RECLAMATION
Managing Water in the West

Attachment C
SCOPING COMMENTS

Revisions to the Coordinated Long-Term Operation of the Central Valley Project and State Water Project, and Related Facilities

Bureau of Reclamation
Mid-Pacific Region

Harrison, Katrina <kharrison@usbr.gov>

Comments to the USBR regarding water exports from the California Delta

Bill Wells <commodorewells@msn.com> Thu. Feb 1, 2018 at 3:15 PM

To: “kharrison@usbr.gov” <kharrison@usbr.gov>, “bdcp.comments.copy@nodeltagates.com” <bdcp.comments.copy@nodeltagates.com>

January 31, 2018

RE: increasing water exports from the California Delta

The California Delta Chambers & Visitor’s Bureau is strongly opposed to increasing water exports from the California Delta. The Delta is a precious ecosystem and it has been significantly damaged by excessive water exports over the last few decades.

Salmon and other fish have been in decline since water exports from the Delta have increased over the last 40 years or so. Outbreaks of egeria densa and toxic algae have been attributed to low water flows caused by the pumps at Tracy. Water hyacinth has totally blocked waterways at times. Jellyfish and other pelagic organisms are being found as far inland as Bethel Island. Sea Lions venture into downtown Stockton and upstream on the Sacramento River past the City of Sacramento.

No study has ever been done to determine the amount of water that can be exported without causing significant harm to the Delta and it’s farmers and residents but the threshold seems to be 3 to 3.5 million acre feet per year or less depending on the amount of water entering the system. We urge that water exports be cut back to three million acre feet maximum until such time as a safe amount of water exports can be determined.

best regards,

Bill

Bill Wells
Executive Director
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https://www.facebook.com/California-Delta-Chambers-and-Visitors-Bureau-16642891725/timeline/

“Defending the California Delta since 1969

STATE OF CALIFORNIA – CALIFORNIA NATURAL RESOURCES AGENCY **EDMUND G. BROWN JR.**, *Governor*

DEPARTMENT OF WATER RESOURCES
1416 NINTH STREET, P.O. BOX 942836
SACRAMENTO, CA 94236-0001
(916) 653-5791

February 1, 2018

David Murillo, Regional Director
Bureau of Reclamation, Mid-Pacific Region
2800 Cottage Way, MP-100
Sacramento, CA 95825-1898

Re: Scoping Comments on the Revisions to the Coordinated Long-term Operation (LTO) of the Central Valley Project (CVP) and State Water Project (SWP)

Dear Director Murillo:

We appreciate the opportunity to provide input during the scoping period defined in the Federal Register Notice published December 29, 2017 Notice of Intent (NOI) to Prepare a Draft Environmental Impact Statement for Revisions to the LTO, as provided by the National Environmental Policy Act (NEPA). The California Department of Water Resources (DWR) has long partnered with Reclamation on a variety of issues and we look forward to collaboratively achieving long-term solutions for water project operations.

As you are aware, on August 2, 2016, via letters to the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS), DWR[1] and Reclamation jointly requested reinitiation of consultation (ROC) under Section 7 of the Endangered Species Act (ESA) on the 2008 USFWS and 2009 NMFS biological opinions (BiOps) on the coordinated LTO of the CVP and SWP. That request was based primarily on the following:

- Multiple years of drought resulting in low fish species populations; and,
- The availability of new information obtained during the drought and as a result of ongoing work through collaborative science processes in the decade since the biological assessments formed the basis of the biological opinions.

Additionally, the letters to USFWS and NMFS explained that the consultation was expected to "update the systemwide operating criteria for the LTO consistent with Section 7 requirements and to review the existing Reasonable and Prudent Alternatives (RPAs) included in the... Biological Opinion to determine the continued substance and efficacy in meeting the requirements of Section 7 of the ESA."

1 DWR is an Applicant as defined by ESA.

In December 2016, agency directors from Reclamation, DWR, USFWS, NMFS, and the California Department of Fish and Wildlife (DFW) signed a Memorandum of Understanding (MOU) for the ROC on LTO, which provides the following abbreviated objectives:

- Proposing an action that will target a non-jeopardy BiOp, ensuring that the LTO is not likely to jeopardize the continued existence of any federally-listed species or result in adverse modification of designated critical habitat, and ensuring compliance and consultation for Essential Fish Habitat as provided for in the Magnuson-Stevens Fishery Conservation and Management Act;
- Coordinating the ESA and NEPA processes with California Endangered Species Act (CESA) authorization for the SWP;
- Preparing a biological assessment (BA) and NEPA document through an open, transparent, and participatory stakeholder process that allows for feedback, dialog, and incorporation of ideas and information beyond agency-only staff;
- Consideration of alternative ways of achieving biological objectives such as accounting for new science related to climate change, hydrology, ecosystem changes, or other information;
- Preparing a joint BiOp or two closely-coordinated BiOps issued by USFWS and NMFS.

On February 14, 2017, the five agency parties to the MOU held a stakeholder kick-off meeting (Kick-Off) which included diverse representatives from the water user community, non-governmental organizations (NGOs), and other public agencies. All five agencies presented information laying the foundation for the planning and compliance work on the ROC. The presentation[2] emphasized a transparent decision-making process and potential new improvements to LTO that include revisions to operations, habitat restoration, and upgrades to facilities. The participating agencies also discussed a general schedule for the process which included the completion of all environmental compliance in 3 years.

Since that time, Reclamation presented a revised approach to include 3 "tracks" that are organized primarily around NEPA compliance. They include:

- Track 1: Modifications to restrictions on Delta exports where updates could be evaluated and a decision reached within a year, where prior work or limited controversy would support the schedule. Track 1 would involve the completion of an Environmental Assessment (EA) and a corresponding Finding of No Significant Impact for NEPA.

2 https://www.usbr.gov/mp/BayDeltaOffice/docs/roc-stakeholder-meeting-20170214-print.pdf

- Track 2: Preparation of a programmatic Environmental Impact Statement (EIS) that analyzes maximizing water deliveries and marketable power through new storage facilities, new conveyance, modifications to existing facilities, changes to regulations, and addressing other stressors. Timeline for EIS completion is within 12-18 months.
- Track 3: Preparation of project-specific EA or EIS documents to cover re-operation of the CVP and SWP, habitat restoration, regulatory changes, new facilities, and other stressors. As of yet, no schedule for completion of these project-specific documents has been identified.

At recent scoping meetings and in the NOI, Reclamation emphasized that the primary purpose for the Revisions to the LTO is to maximize water deliveries. This new explicit emphasis, together with the NEPA focus of the revised three track approach, makes it unclear whether the original commitments in the August 2016 request for reinitiation and December 2016 MOU remain in place and, if so, how they would be achieved.

DWR is particularly concerned about the effects of Reclamation's revised approach on:

1) **Schedule**
   The original schedule for ROC on LTO from 2016 and early 2017 had set a target for completion of NEPA and ESA within three years. Tracks 1 and 2 under the revised approach envision 12 – 18 month processes. Track 3 does not have a defined process or timeline. All of these tracks are anticipated to occur in tandem. This essentially triples the amount of effort going into the process. We have concems that this 3-track effort's timeline will be difficult to achieve. Also, given the trajectory under the original schedule for the prior approach, we believe that a project-level NEPA document and project-level BiOps could have been issued in the same amount of time it will take for the first two tracks of the revised process, which offers only a programmatic determination.

2) **Coordination of ESA and NEPA processes with existing or future CESA authorizations for the SWP**
   Without more detailed information about ESA compliance that may be needed for tracks 1, 2, and 3, DWR cannot determine whether resulting Califomia Environmental Quality Act (CEQA) or CESA compliance is warranted.

3) **Scope of Track 2**
   As expressed in the MOU, DWR maintains its interest in a non-jeopardy conclusion under ESA for project operations. The breath and magnitude of projects open for consideration and the complexity of their likely impacts makes it unclear whether this goal remains obtainable. DWR also questions the inclusion of sharing agreement changes or legislative revisions, as these are highly speculative and, without more clear information to form alternatives, a NEPA document is not the appropriate mechanism to investigate these changes.

4) **Decision-Making Authority**
DWR would like to better understand the decision-making process for what is included and analyzed in the NEPA documents under the revised approach. As the owner and operator of the SWP, DWR needs to be an active participant in the development of potential alternatives and resource analysis. DWR needs to retain decision-making authority on any and all aspects of project description development that involves the SWP.

We appreciate the ability to comment and look forward to continued discussions with you and your staff. DWR continues to value our long-standing and productive collaboration with Reclamation in providing a reliable water supply that supports our communities, farms and ecosystems.

Sincerely,

Karla A. Nemeth
Director

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

FEB 0 1 2018

Katrina Harrison, Project Manager
Bureau of Reclamation, Bay Delta Office
801 I Street, Suite 140
Sacramento, CA 95814-2536

Subject: Scoping Comments on the Notice of Intent To Prepare a Draft Programmatic Environmental Impact Statement for Revisions to the Coordinated Long-Term Operation of the Central Valley Project and State Water Project, California

Dear Ms. Harrison:

The U.S. Environmental Protection Agency has reviewed the U.S. Bureau of Reclamation's Notice of Intent to prepare a draft programmatic environmental impact statement for the Revisions to the Coordinated Long-Term Operation of the Central Valley Project and State Water Project. Our review and comments are provided pursuant to the National Environmental Policy Act, Council on Environmental Quality regulations (40 CFR Parts 1500-1508), and Section 309 of the Clean Air Act. EPA accepted Reclamation's cooperating agency request on June 16, 2017, and we look forward to further collaboration on the development of this Programmatic EIS (PEIS).

We recommend that Reclamation consider a number of issues when preparing the PEIS, including: the range of alternatives to be evaluated; the regulatory framework surrounding the proposed action; biological resources; and water quality. These issues are discussed further in the attached Detailed Comments.

We appreciate the opportunity to review this scoping notice and are available to discuss our comments. When the PEIS is released for public review, please send one hard copy and one CD to the address above (mail code: ENF-4-2). If you have questions, please contact me at (415) 972-3098 or gordon.stephanies@epa.gov.

Sincerely,

Stephanie Gordon
Environmental Review Section

Enclosure: EPA's Detailed Comments

U.S. EPA DETAILED COMMENTS ON THE NOTICE OF INTENT TO PREPARE A DRAFT PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT FOR THE REVISIONS TO THE COORDINATED LONG-TERM OPERATION OF THE CENTRAL VALLEY PROJECT AND STATE WATER PROJECT, AND RELATED FACILITIES FEBRUARY 1, 2018

Statement of Purpose and Need

The draft programmatic Environmental Impact Statement (PEIS) prepared for the Coordinated Long-Term operation of the Central Valley Project and State Water Project should clearly identify the underlying purpose and need to which the Bureau of Reclamation is responding in proposing the alternatives (40 CFR 1502.13). The *purpose* of the proposed action is typically the specific objectives of the activity, while the *need* for the proposed action may be to eliminate a broader underlying problem or take advantage of an opportunity.

The purpose and need should be a clear, objective statement of the rationale for the proposed project, as it provides the framework for identifying project alternatives. The PEIS should concisely identify why the project is being proposed, why it is being proposed now, and should focus on the specific desired outcomes of the project (e.g. secure reliable water supply, protect beneficial uses in the Delta). The purpose and need should also clearly describe Reclamation's role and federal action in the project, particularly with regard to the similarities and differences with the Department of Water Resources' objectives and future actions.

Alternatives Analysis

All reasonable alternatives that fulfill the project's purpose and need should be evaluated in detail, including alternatives outside the legal jurisdiction of Reclamation (40 CFR Section 1502.14(c)). The PEIS should provide a clear discussion of the reasons for the elimination of alternatives which are not evaluated in detail.

A robust range of alternatives will include options for avoiding significant environmental impacts. The PEIS should clearly describe the rationale used to determine whether impacts of an alternative are significant or not. Thresholds of significance should be determined by considering the context and intensity of an action and its effects (40 CFR 1508.27).

The environmental impacts of the proposal and alternatives should be presented in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decision maker and the public (40 CFR 1502.14). The potential environmental impacts (including benefits) of each alternative should be quantified to the greatest extent possible (e.g. acres of wetlands impacted; change in water quality parameters).

The No Action Alternative should clearly describe the current Central Valley Project operating criteria. It should specify the regulatory vehicles that govern the operational regimes including water rights, the Endangered Species Act, and water quality standards in the Bay Delta Water Quality Control Plan and include details of all permits and transfers related to the current pumping.

Regulatory Framework

The EIS prepared for the proposed action should include a comprehensive description of the regulatory context of the project. This section should include a description of any permits and/or modifications to those state and federal permits that the proposed action will require.

Clean Water Act Section 404

Reclamation should coordinate with the U.S. Army Corps of Engineers (USACE) to determine if the proposed action requires a Section 404 permit under the Clean Water Act. Section 404 regulates the discharge of dredged or fill material into waters of the United States, including wetlands and other special aquatic sites. The PEIS should describe all waters that could be affected by the project alternatives and include a jurisdictional delineation for all waters. The PEIS should include maps that clearly identify all waters within the direct footprints of the construction and operational areas (including the project area and proposed facilities, such as new electrical transmission towers and pipeline corridors. A jurisdictional delineation will confirm the presence or absence of waters in the project area and help determine methods for impact avoidance if state and federal permits would be required for activities.

If a Section 404 permit is required, the EPA may review the project for compliance with Section 404(b)(1) Guidelines. Pursuant to 40 CFR 230, any permitted discharge into Waters of the U.S. must be the *least environmentally damaging practicable alternative* available to achieve the project purpose. If needed, the PEIS should include an evaluation of the project alternatives within this context in order to demonstrate the project's compliance with the 404(b)(1) Guidelines.

Water Quality

The water quality discussion in the PEIS should include a description of constituents of concern, water quality standards, and designated beneficial uses in the study area and a quantitative water quality analysis that compares to all water quality standards and objectives described. EPA notes that there are many quantitative and qualitative water quality standards that apply to CVP/SWP operations, as described in the Water Boards' Basin Plans and Water Rights Decision 1641. In the PEIS, discuss how each alternative would affect water quality with respect to narrative and numeric water quality objectives, highlight any predictions of exceeded water quality standards, and identify mitigation strategies that would prevent such exceedances.

The PEIS should discuss how droughts are incorporated into the CalSim model for water supply and quality impact analysis, and acknowledge that drought can and has altered hydrology in the Delta. Contingency procedures for severe droughts should be discussed in this document. In previous drought conditions, multiple water quality objectives were not met for at least two years, resulting in a substantial impact on aquatic life beneficial uses throughout the study area. In the PEIS, provide a description of the adjustments to the Reasonable and Prudent Alternatives from the U.S. Fish and Wildlife Service and National Marine Fisheries Service's Biological Opinions made during 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 RPAs for drought conditions.

Biological Resources

In 2009, several federal agencies, including Reclamation and EPA, declared that the Sacramento-San Joaquin River Delta ecosystem, part of the larger San Francisco estuary, was in a state of collapse.[1] This declaration was made after several years of sharp population declines in four resident fishes, commonly referred to as the pelagic organism decline (POD), followed by sharp drops in Chinook salmon abundance. Two of the POD fishes were already rare while the other two were formerly the most

[1] California Bay-Delta MOU (http://www2.epa.gov/sites/production/files/documents/baydeltamousigned.pdf); Interim Federal Action Plan (https://www.doi.gov/sites/doi.gov/files/migrated/news/doinews/upload/CAWaterWorkPlan.pdf)

abundant fishes in the estuary. Low Chinook salmon populations resulted in a multi-year closing of commercial and recreational fishing.

Populations of all the species covered by the 2008 Fish and Wildlife Service and 2009 National Marine Fisheries Service Biological Opinions (BOs), as well as several non-listed resident and migratory fishes, have continued to decline since the BOs were finalized. The continued decline of resident and migratory fish populations suggests that the suite of RPAs implemented to date, plus commitments to improve protection for aquatic habitat in the Bay Delta watershed, have not yet been successful in protecting aquatic habitat, reversing population declines, avoiding jeopardy, and/or improving aquatic life beneficial use protection. The pace and severity of the decline highlight the urgent need to move forward with full implementation of the RPAs and, perhaps, additional measures in an adaptive management context to ensure their effectiveness.

The PEIS should identify all petitioned and listed threatened and endangered species and critical habitat that might occur within the project area. The document should identify and quantify which species or critical habitat might be directly, indirectly, or cumulatively affected by each alternative and mitigate impacts to these species; emphasis should be placed on the protection and recovery of species due to their status or potential status under the federal or state Endangered Species Act.

Timing and Coordination of Tiered NEPA documents

The NOI states that "it is anticipated that this current programmatic effort will be followed by tiered project-level NEPA analyses to implement various site specific projects or detailed programs that were generally described in the programmatic EIS." EPA is aware that some of these site specific projects may already be underway, such as the Yolo Bypass Fish Passage and Restoration DEIS detailed in the RPA from the NMFS BO. EPA recommends that the PEIS discuss the prospects and "triggers" for developing additional NEPA documentation, including site-specific Environmental Assessments (EAs) or EISs for individual projects and/or operational criteria. The basis for such additional NEPA reviews should be described, including federal agency permitting that may trigger NEPA document development. In general, topics such as operation of all CVP facilities including reservoirs and forebays and canals should be generally discussed in the PEIS (e.g., expected operational ranges) and discussed in the site-specific NEPA documentation.

Cumulative and Indirect Impacts

The cumulative impacts analysis should identify how resources, ecosystems, and communities in the project have already been, or will be, affected by past, present, or future activities in the project area. These resources should be characterized in terms of their response to change and capacity to withstand stresses. Trends data should be used to establish a baseline for the affected resources, to evaluate the significance of historical degradation, and to predict the environmental effects of the project components.

For the cumulative impacts assessment, we recommend focusing on resources of concern or resources that are "at risk" and/or are significantly impacted by the proposed project, before mitigation. For this project, Reclamation should conduct a thorough assessment of the cumulative impacts to aquatic and biological resources, especially in the context of the other developments occurring and proposed in and around the Bay Delta estuary.

EPA recommends that the PEIS identify which resources are analyzed, which ones are not, and why. For each resource analyzed, the PEIS should:

- Identify the current condition of the resource as a measure of past impacts. For example, the percentage of species habitat lost to date.
- Identify the trend in the condition of the resource as a measure of present impacts. For example, the health of the resource is improving, declining, or in stasis.
- Identify all on-going, planned, and reasonably foreseeable projects in the study areas, including planned restoration under EcoRestore, which may contribute to cumulative impacts.
- Identify the future condition of the resource based on an analysis of impacts from reasonably foreseeable projects or actions added to existing conditions and current trends.
- Assess the cumulative impacts contribution of the proposed alternatives to the long-term health of the resource, and provide a specific measure for the projected impact from the proposed alternatives.
- When cumulative impacts are identified for a resource, mitigation should be proposed.
- Disclose the parties that would be responsible for avoiding, minimizing, and mitigating those adverse impacts.
- Identify opportunities to avoid and minimize impacts, including working with other entities.

The PEIS should consider the cumulative impacts associated with other development projects proposed in the area and the potential impacts on various resources including: water supply, endangered species, and habitat.

The PEIS should quantify cumulative impacts across resources areas, as well as describe and evaluate feasible mitigation measures to avoid and minimize the identified adverse cumulative impacts. Although these mitigation measures may be outside the jurisdiction of the lead agency or project proponents, describing them in the PEIS would serve to alert other agencies or officials who can implement these extra measures (CEQ 40 Questions No. 19(b)).

State Water Resources Control Board

February 1, 2018

Katrina Harrison
U.S. Bureau of Reclamation
Bay-Delta Office
801 I Street, Suite 140
Sacramento, CA 95814-2536
kharrison@usbr.gov

Dear Ms. Harrison:

COMMENTS ON NOTICE OF INTENT FOR A DRAFT PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT FOR REVISIONS TO THE COORDINATED LONG-TERM OPERATIONS OF THE CENTRAL VALLEY PROJECT AND STATE WATER PROJECT, AND RELATED FACILITIES

Thank you for the opportunity to comment on the U.S. Bureau of Reclamation's (Reclamation) Notice of Intent (NOI) to Prepare a Draft Environmental Impact Statement (DEIS) for Revisions to the Coordinated Long-Term Operation of the Central Valley Project (CVP) and State Water Project (SWP) (collectively Projects), and Related Facilities. State Water Board staff appreciates the ongoing coordination with Reclamation on this and related matters. The stated proposed purpose of the project is to continue the operation of the CVP in a coordinated manner with the SWP, for its authorized purposes, in a manner that enables Reclamation and the California Department of Water Resources (DWR) to maximize water deliveries and optimize marketable power generation consistent with applicable laws, contractual obligations, and agreements; and to augment operational flexibility by addressing the status of listed species.

The mission of the State Water Resources Control Board (State Water Board) and the nine 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), Order 90-5, and other orders and decisions. The State and Regional Water Boards have primary authority over the protection of the State's water quality. To protect water quality, the State and Regional Water Board's develop water quality control plans that identify beneficial uses of water, water quality objectives to protect those beneficial uses, and a program of implementation to achieve the objectives, as well as monitoring special studies and reporting requirements. These water quality control plans 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 Regional Water Boards' water quality control plans for the Central Valley and San Francisco Bay that are relevant to this project.

The DEIS should analyze how the proposed project will affect aquatic beneficial uses of water and propose an adequate range of alternatives and appropriate mitigation measures to avoid impacts and improve conditions for these beneficial uses. The DEIS should evaluate meeting existing and potentially new water right and water quality requirements, including requirements included in water right orders and decisions and water quality control plans, as well as measures to address emerging issues of concern for aquatic beneficial uses. Specifically, the EIS should evaluate the potential effects of the proposed project on flow, water quality, and other habitat conditions that affect native fish and wildlife, including effects of the project on predation, entrainment, spawning, rearing, migration, water temperatures, toxic algal blooms, submerged aquatic vegetation, dissolved oxygen conditions, turbidity, contaminants and other impacts to aquatic beneficial uses. Alternatives and mitigation measures that avoid or reduce impacts should be proposed and alternatives that improve conditions for native species should be evaluated.

Specifically, the DEIS should evaluate alternatives consistent with the State Water Board's current efforts to update the Bay-Delta Water Quality Control Plan (Bay-Delta Plan). The State Water Board is updating the Bay-Delta Plan through two separate processes. As part of the Phase I revisions to the Bay-Delta Plan, the State Water Board is considering amendments to the San Joaquin River flow and southern Delta salinity objectives and associated provisions in the program of implementation. The State Water Board released a draft Substitute Environmental Document (SED) for Phase I in September of 2016, and is currently responding to those comments and expects to release a final SED and proposed changes to the Bay-Delta Plan this spring. As part of the Phase II update to the Bay-Delta Plan, the State Water Board is considering new and modified Sacramento River and tributary and Delta tributary inflow and cold water habitat, Delta outflow, and interior Delta flow objectives and a program of implementation to achieve those objectives. In October of 2017, the State Water Board released a Scientific Basis Report documenting the science upon which proposed Phase II changes to the Bay-Delta Plan will be based and a general description of those changes. We anticipate releasing the draft SED/Staff Report for Phase II for public comment in the spring.

The potential range of proposed changes to the Bay-Delta Plan should be considered as the DEIS is developed. While no decisions have been made about what changes will be made to the Bay-Delta Plan, higher year round Delta inflow and outflow requirements that mimic the natural hydrograph, minimum cold water habitat protective measures, and interior Delta flow requirements that are protective of native migratory fish species (including Old and Middle River flow constraints, Delta Cross Channel Gate operations, and export constraints consistent with the existing biological opinions and incidental take permit requirements for the Projects since these constraints are being considered to be added to the Bay-Delta Plan) should be fully evaluated and optimized for the benefit of native fish and wildlife. The DEIS should also acknowledge that changes to the Bay-Delta Plan could affect the water supply benefits expected from the modified operations. Additionally, alternatives should be evaluated that are consistent with the objectives of the Delta Stewardship Council's Delta Plan to achieve the coequal goals for the Delta, including efforts to reduce reliance on the Delta and build regional water supply self-sufficiency through statewide water conservation, water use efficiency, and sustainable water use.

State Water Board staff looks forward to working with you further on these matters, including development of alternatives consistent with the above comments. If you have any questions or would like to discuss these comments or related issues further, please contact me at (916) 341-5297 or diane.riddle@waterboards.ca.gov.

Sincerely,

ORIGINAL SIGNED BY

Diane Riddle, Assistant Deputy Director
Division of Water Rights
State Water Resources Control Board

Harrison, Katrina <kharrison@usbr.gov>

USDA Request for Inclusion in PEIS as a Collaborating Agency

Hartley, Chris - OCE <chartley@oce.usda.gov> Mon. Feb 5, 2018 at 6:05 M

To: “bcnelson@usbr.gov” <bcnelson@usbr.gov>, “kharrison@usbr.gov” <kharrison@usbr.gov>
Cc: “Johansson, Robert – OCE” <RJohnsson@oce.usda.gov>, “Casamassa, Glenn-FS” <gcasamassa@fs.fed.us>, “Jiron, Dan – OSEC, Washington, DC” <Dan.Jiron@osec.usda.gov>

Dear Katrina Harrison and Ben Nelson,

Per our recent discussions, I would like to request that you include the United States Department of Agriculture as a cooperating agency (40 C.F.R. §§ 1501.6 & 1508.5) in the PEIS for Revisions to the Coordinated Long-Term Operation of the Central Valley Project and State Water Project and Related Facilities.

Given the interrelation between U.S. Forest Service lands and other USDA investments in water-related infrastructure critical to the CVP, we believe that USDA and several of its constituent agencies meet the relevant criteria, and will make available our technical expertise in land, water and resource management during the PEIS.

If you have any questions, please contact me at 202-690-0832 or by email at chartley@oce.usda.gov.

Thank you,

Christopher Hartley, Ph.D.
Office of Chief Economist
United States Department of Agriculture

CC:
Robert Johansson, Chief Economist & Acting Deputy Under Secretary for Farm Production and Conservation, USDA
Dan Jiron, Acting Deputy Under Secretary for Natural Resources & Environment, USDA
Glenn Casamassa, Associate Deputy Chief, National Forest Systems, USDA

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DELTA STEWARDSHIP COUNCIL
A California State Agency

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February 1, 2018

Chair
Randy Fiorini

Members
Frank C. Damrell, Jr.
Patrick Johnston
Susan Tatayon
Skip Thomson
Ken Weinberg
Michael Gatto

Executive Officer
Jessica R. Pearson

Katrina Harrison
Bureau of Reclamation, Bay-Delta Office
801 I Street, Suite 140
Sacramento, CA 95814-2536

RE: Notice of Intent to Prepare a Draft Environmental Impact Statement, Revisions to the Coordinated Long Term Operation of the Central Valley Project and State Water Project, and Related Facilities

Dear Ms. Harrison,

Thank you for the opportunity to comment on the Notice of Intent (NOI) to prepare a Draft Environmental Impact Statement (DEIS), Revisions to the Coordinated Long-Term Operation of the Central Valley Project and State Water Project, and Related Facilities (82 FR 61789).

The Delta Stewardship Council (Council) is an independent California state agency tasked with furthering the State's coequal goals for the Delta through implementation of the Delta Plan; a comprehensive, long-term management plan for the region guided by the best available science. As defined in California Water Code section 85054, the State's coequal goals include providing a more reliable water supply for California, and protecting, restoring and enhancing the Delta ecosystem.

While the Council acknowledges the desire of the Bureau to explore opportunities to "maximize water deliveries," the Delta Plan reinforces, through both regulation and recommendation, that water operations exporting water through or from the Delta should, at a minimum:

1) Be informed by the best available science and be able to adapt to changing conditions (hydrological, climate change, and ecosystem needs) both near-term and in the future, while continuing to provide benefits to the ecosystem and reliably convey available water supplies **(Delta Plan G PI);**
and
2) Consider how the proposed action(s) would reduce reliance on the Delta **(Delta Plan WR PI).**

Additionally, the Council is currently amending the Delta Plan as it relates to water conveyance, storage and operations. This amendment further emphasizes that Delta-related water operations should:

1) More closely match water supplies available to be exported, based on water year type and consistent with the coequal goal of protecting, restoring, and enhancing the Delta ecosystem;
2) Enhance the Delta ecosystem, including restoring more natural flows, increase the reliability with which water available for export supplies can be exported, and consider "Delta as place" characteristics;
3) Provide real benefits to the ecosystem, in contrast to protecting the ecosystem from further degradation; and
4) Consider the potential effects on State waters, infrastructure, water supply, and water quality criteria for the Bay-Delta as well as Statewide.

Council staff will track the Bureau's progress on this endeavor going forward and would welcome the opportunity to discuss our comments in more detail at the appropriate time. If you have any questions or comments please contact me at (916) 445-0134 or jessica.law@deltacouncil.ca.gov.

Sincerely,

Jessica Law
Chief Deputy Executive Officer
Delta Stewardship Council

RECEIVED
JAN 23 2018

WINTU OF HAYFORK
P.O. Box 1108
Hayfork, CA 96041

17 January 2018

Katrina Harrison, Project Manager
Bureau of Reclamation Bay-Delta Office
801 I Street, Suite 140
Sacramento, CA 95814-2536

Dear Katrina Harrison:

I am writing regarding the announcement by the Bureau of Reclamation of intentions to maximize water deliveries in the Central Valley Project.

There is already too much water being taken from the Trinity and Lewiston Lakes and diverted to the CVP. There is an urgent need for more water to be released from the Trinity and Lewiston Lakes to increase the flow in the main stem of the Trinity River in Trinity County, California. The stream flow in the Trinity watershed is only 1/3 of historical flows and is adversely impacting the natural ecosystem. Also, because of forest management practices resulting in the overgrowth of vegetation, the watershed has even more drastic decrease in stream flows.

In addition to this destruction; because of legislation there has been a tremendous increase in water diversion and use for the cultivation and production of cannabis. With passage of the new State Law allowing cannabis production for recreational use there will be a further increase in demand for water from the Trinity River Watershed.

There is no way that more water being diverted from the Trinity River watershed can even be considered.

Sincerely,

Raymond Patton

Raymond Patton
Tribal Leader
WINTU OF HAYFORK

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January 31, 2018

Via E-mail (kharrison@usbr.gov)

Katrina Harrison, Project Manager
Bureau of Reclamation
Bay-Delta Office
801 I Street, Suite 140
Sacramento, CA 95814-2536

Re: Scoping Comments of Hoopa Valley Tribe on Notice of Intent to Prepare a DEIS, Revisions to the Coordinated Long-Term Operation of the Central Valley Project and State Water Project, and Related Facilities

Dear Ms. Harrison:

On behalf of the Hoopa Valley Tribe, we submit the following scoping comments on the Bureau of Reclamation's Notice of Intent to Prepare a Draft Environmental Impact Statement (DEIS), Revisions to the Coordinated Long-Term Operation of the Central Valley Project and State Water Project, and Related Facilities, which was published in the Federal Register on December 29, 2017.[1] 82 Fed. Reg. 61789-61791.

I. Interest of the Hoopa Valley Tribe

The Hoopa Valley Tribe ("Tribe"), a federally-recognized Indian tribe, is located on the Hoopa Valley Reservation, which was established for the Tribe by the United States in 1864. *Parravano v. Babbitt*, 70 F.3d 539, 542 (9th Cir. 1995), *cert. denied*, 518 U.S .1016 (1996). The lower twelve miles of the Trinity River, and a stretch of the Klamath River near the Trinity confluence, flow through the Tribe's Reservation. Since time immemorial, the fishery resources of the Trinity and Klamath Rivers have been the mainstay of the life and culture of the Hoopa Valley Tribe. The principal purpose of the Tribe's Reservation was to set aside sufficient resources of these rivers for the Indians to be self-sufficient and achieve a moderate living based on fish. Memorandum from John D. Leshy (M-36979), Solicitor of the Department of the

[1] Prior to publication of the Notice of Intent in the Federal Register, the Tribe provided comments on the draft language of the Notice of Intent. Many of the Tribe's comments were not included in the final Notice of Intent. The Tribe has attached its prior edits/comments to the Notice of Intent to this letter for inclusion in the record.

Interior to the Secretary of the Interior (Oct. 4, 1993), *cited with approval, Parravano*, 70 F.3d at 542. The United States, as trustee for the Tribe, has a fiduciary responsibility to protect and preserve the Tribe's trust resources. *Klamath Water Users Ass'n v. Patterson*, 204 F.3d 1206, 1213 (9th Cir. 2000); Memorandum to Regional Director, Bureau of Reclamation from Regional Solicitor, Pacific Southwest Region (July 25, 1995) ("Reclamation must exercise its statutory and contractual authority to the fullest extent to protect the tribal fisheries and tribal water rights").

When Congress authorized the Trinity River Division (TRD) of the Central Valley Project (CVP) in 1955, 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. Congress thus limited the integration of the TRD into the CVP and required the Secretary of the Interior to exercise a priority for use of all TRD water necessary to protect fish and other in-basin needs. 1955 Trinity River Division Central Valley Project Act, Pub. L. No. 84-386, 69 Stat. 719 ("1955 Act"), § 2 (provisos); Memorandum from Solicitor to Assistant Secretary, Land and Water Resources, Dec. 7, 1979. S*ee also* Memorandum from Solicitor to Secretary (M-37030) re Trinity River Division Authorization's 50,000 Acre-Foot Proviso and the 1959 Contract between the Bureau of Reclamation and Humboldt County, December 23, 2014.[2]

Nonetheless, development and operation of the TRD without faithful adherence to the foregoing legal and fiduciary obligations took a devastating toll on the Hoopa Valley Tribe, the Trinity and Klamath Rivers, and the fish species that rely on those rivers. Between 1963 and 1981, Chinook salmon runs in the Trinity River declined by 80%. Eighty to ninety percent of total salmonid habitat in the Trinity Basin was lost during that time. In 1981, relying on an environmental study, the authority provided by the 1955 Act, § 2, and the trust obligation to protect tribal resources, the Secretary ordered an increase of annual flows released from the TRD to the Trinity River downstream of Lewiston Dam to 340,000 acre-feet annually and further directed initiation of a Trinity River Flow Evaluation Study ("TRFES") to study and develop a flow regime and other measures to improve habitat conditions in the Trinity River. The Secretary concluded "there are responsibilities arising from congressional enactments, which are augmented by the federal trust responsibility to the Hupa and Yurok tribes, that compel restoration of the river's salmon and steelhead resources to pre-project levels." 1981 Secretarial Order.

In 1984, Congress affirmed and authorized the Secretary's restoration directive in the Trinity River Basin Fish and Wildlife Management Act ("1984 Act"), Pub. L. No. 98-541, 98 Stat. 2721. Congress extended the scope of the restoration mandate to the Klamath River in the

[2] The first proviso of Section 2 of the 1955 Act provides that ". . . the Secretary is authorized and directed to adopt appropriate measures to insure the preservation and propagation of fish and wildlife . . . ." The second proviso of Section 2 of the 1955 Act provides that ". . . not less than 50,000 acre-feet shall be released annually from the Trinity Reservoir and made available to Humboldt County and downstream water users." These two provisos "represent separate and independent limitations on the TRD's integration with, and thus diversion of water to, the CVP." Memorandum M-37030, December 23, 2014.

Klamath River Basin Conservation Restoration Area Act ("1986 Act"), Pub. L. No. 99-552, 100 Stat. 3080. The express goal and directive of these acts was to restore anadromous salmonids in the Trinity and Klamath Rivers to pre-project levels. Congress reauthorized and amended the 1984 Act in the Trinity River Basin Fish and Wildlife Management Act of 1996 ("1996 Act"), Pub. L. No. 104-143, 110 Stat. 1339 (1996). The 1996 Act amended and expanded the scope of the 1984 Act's mandate to include rehabilitation of fish habitat "in the Klamath River downstream of the confluence with the Trinity River." 1996 Act, § 3(b).

In 1992, Congress passed the Central Valley Project Improvement Act ("CVPIA"), Pub. L. No. 102-575, § § 3401-12, 106. Stat. 4600, 4706-31 (1992). Section 3406(a) of the CVPIA modified the purposes of the CVP to include the mitigation, protection, and restoration of fish and wildlife. Section 3406(b)(23) of the CVPIA expressly confirmed the Bureau of Reclamation's trust responsibility to the Hoopa Valley Tribe and its fishery. The CVPIA required the Secretary to take specific actions "in order 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, § 3406(b)(23). Congress directed the Secretary to complete the TRFES and, if the Secretary and the Tribe concurred in the TRFES' recommendations once completed, directed the Secretary to implement any increase in flow and CVP operations accordingly. *Id.*, § 3406(b)(23)(B).

The U.S. Fish and Wildlife Service, the Hoopa Valley Tribe and other agencies completed the TRFES in 1999. The TRFES recommended a flow regime and management actions to rehabilitate habitat in the mainstem channel of the Trinity River between Lewiston Dam and the Klamath confluence at Weitchpec. The TRFES did not address restoration issues downstream of the Trinity-Klamath confluence. Following completion of the TRFES and an EIS under NEPA, the Secretary, with the Tribe's concurrence as required by section 3406(b)(23) of the CVPIA, executed the Trinity River Mainstem Fishery Restoration Record of Decision ("TRROD") in December 2000. The TRROD adopted the TRFES' recommendations to restore physical fishery habitat in the mainstem Trinity River pursuant to Congress' direction in the 1984 Act and the CVPIA. The Tribe has been and remains an active leader in implementation of habitat rehabilitation projects pursuant to the TRROD.

In September 2002, thousands of fall-run Chinook salmon died in the lower-Klamath River during their migration upstream when a combination of unusually low flows, warm water temperatures, and a large number of returning fish led to a severe disease outbreak. In certain recent years (2003-2004, 2012-2015), the Secretary has scheduled extra releases of water from Trinity Reservoir during the late-summer when fishery managers and scientists determined that fish returns and low flow conditions were expected to duplicate conditions present in 2002. The Ninth Circuit affirmed the Secretary's authority to implement these "flow augmentation releases" pursuant to Section 2 of the 1955 Act. *San Luis & Delta-Mendota Authority v. Haugrud*, 848 F.3d 1216 (9th Cir. 2017). On April 20, 2017, the Bureau of Reclamation executed its Record of Decision re Long-Term Plan to Protect Adult Salmon in the Lower Klamath River Final Environmental Impact Statement. The Bureau selected the Proposed Action of providing 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 2,800 cfs. The Bureau relied on Section 2 of the 1955 Act for the statutory authority for its decision.

The current state of the fishery in the Klamath-Trinity river system remains unstable and imperiled due to continued federal mismanagement. Abundance and fishery allowances for Chinook salmon in 2017 were at the lowest levels since the stock was first managed in 1978. In consideration of the unprecedented low stock size, the Pacific Fishery Management Council significantly limited 2017 marine fisheries affecting Klamath River fall Chinook ("KRFC"). The harvest guideline for the in river Tribal fishery was set to 814 adult KRFC. The Yurok and Hoopa Valley Tribe share the annual harvestable surplus of KRFC on a 50-50 basis with non-Tribal fisheries. This harvest of only 814 KRFC was the lowest ever reserved for the two tribes whose collective membership exceeds 8,000 persons. Adding to the collapse of the tribal fishery for KRFC were record low returns of Coho salmon, which are listed (since 1997) under the Federal ESA as a "threatened" species.

The directive to return fish species in the Klamath and Trinity Rivers to pre-TRD levels has fallen woefully short due to mismanagement and continuing failure to recognize the priority for use of TRD water necessary to protect fish and other in-basin needs and for economic development. Nor can the Hoopa Valley Tribe or its members achieve the promised moderate livelihood based on fish. The United States, the Department of the Interior, and the Bureau of Reclamation, collectively and independently have a trust responsibility to ensure protection, preservation, and restoration of the Tribe's trust resources, which at the present time are in extremely imperiled condition. Any action taken by Reclamation with respect to long-term operations of the CVP must be consistent with its trust duties and its existing legal obligations to the Tribe and the Trinity and Klamath Rivers.

II. Scoping Comments of the Hoopa Valley Tribe

A. Modification of Long-Term CVP Operations Must Fully Account For, Develop, and Implement Necessary Measures for Mitigation, Restoration, Preservation and Propagation of the Affected Fish Species, Habitat, and Indian Trust Assets.

The December 29, 2017 Notice of Intent appears to be focused on alternatives to maximize water deliveries for consumptive purposes while largely ignoring CVP environmental impacts, removing or reducing environmental restrictions on CVP water deliveries, and focusing environmental mitigation efforts on other non-CVP impacts. See Notice of Intent, Section II (Why We Are Taking This Action); Section III (Purpose and Need for Action). As written, the Notice of Intent excludes or ignores one of the essential purposes of the CVP, as approved by Congress, which is to mitigate, restore, preserve and propagate fish and wildlife. CVPIA, Section 3406(a). Moreover, as discussed above, reclamation law establishes a first priority for use of the CVP water developed by the TRD for restoration, preservation and propagation of Trinity River fish and wildlife, and economic development of the Hoopa Valley Tribe and other water users downstream of the TRD. Any alternatives considered for long-term operation of the CVP must consider ways to fully implement the mitigation, restoration, preservation, and

propagation of fish and wildlife and Hoopa Valley Tribe economic development as mandated by Congress and required by the United States' trust obligations.

Specific examples of protective and restorative measures that the Bureau of Reclamation should evaluate and ultimately adopt in any Record of Decision for long-term CVP operations include:

- Full funding and implementation of actions under the 2000 TRROD.
- Augmentation of flows beyond the requirements of the 2000 TRROD as necessary for preservation and propagation of fish in the Trinity and/or Klamath Rivers when conditions warrant.
- Coordinating and integrating operation of CVP/TRD operations with the Klamath Irrigation Project in a joint directorate with the Hoopa Valley Tribe.
- Funding and developing infrastructure to establish and maintain temperature of water releases from TRD facilities suitable for fish and wildlife preservation and propagation.
- Upgrading the TRD hatchery facilities and funding Hoopa Valley Tribe plans for additional selective harvest;
- Transferring management of TRD hatchery to Hoopa Valley Tribe.
- When called upon by the Tribe as a third party beneficiary of the June 19, 1959 contract between the United States and Humboldt County for annual release of 50,000 acre-feet of TRD water for: (a) facilitating economic development of the Hoopa Valley Reservation and (b) fishery preservation and propagation activities in addition to those provided for with Proviso 1 TRD water.
- Accumulating and maintaining in TRD carryover storage for use in the Trinity/Klamath basin for beneficial uses, up to 150,000 acre-feet of Proviso 2 water.
- Facilitating lease or exchange of Proviso 2 water in carryover storage to CVP contractors and the State Water Project on terms acceptable to the Tribe.

In summary, no modification of CVP long-term operations should be undertaken without full recognition and implementation of the Congressional priorities and mandate to mitigate, restore, preserve, and propagate fish and wildlife and provide for economic development of TRD water in the Trinity/Klamath basin. The Hoopa Valley Tribe depends on the water and fish of the Trinity and Klamath Rivers and the Bureau of Reclamation, as trustee to the Tribe, must exercise its statutory and contractual authority to the fullest extent to protect the tribal resources and the in-basin water needs. The Secretary must identify and avoid any impacts in any program it undertakes to maximize water deliveries to CVP contractors whose entitlement to use CVP water is manifestly junior to the Tribe's right under reclamation law to CVP water.

B. Modification of Long-Term CVP Operations Must Fulfill the United States Fiduciary Trust Obligation to the Hoopa Valley Tribe.

The principal purpose of the Tribe's Reservation was to set aside sufficient resources of the Trinity and Klamath Rivers for the Indians to be self-sufficient and achieve a moderate living

based on fish. 1993 Solicitor Op. M-36979, (Oct. 4, 1993). The Ninth Circuit Court of Appeals has recognized that the United States has "a trust obligation to protect the Yurok and Hoopa Valley Tribes' rights to harvest Klamath chinook." *Parravano*, 70 F.3d at 546. The Ninth Circuit has also held that "the United States, as a trustee for the [Klamath Basin] Tribes, has a responsibility to protect their rights and resources." *Patterson*, 204 F.3d at 1213-14. The Department of the Interior and the Bureau of Reclamation have likewise confirmed their affirmative fiduciary trust responsibilities to the Hoopa Valley Tribe. Memorandum to Regional Director, Bureau of Reclamation from Regional Solicitor (July 25, 1995), p. 10 (stating, "Reclamation must exercise its statutory and contractual authority to the fullest extent to protect the tribal fisheries and tribal water rights"); 1993 Solicitor Op. M-36979, p. 29 ("Interior . . . must ensure that their actions are consistent with the trust obligations of the United States to the [Klamath Basin] Tribes").

The December 29, 2017 Notice of Intent, Section VI, acknowledges that "there are Indian Trust Asset issues and there may be environmental justice issues related to the Trinity River . . ." Section II of the Notice of Intent likewise references the federal trust responsibilities, but only in the context of an assertion that such trust responsibilities have, with other factors, "significantly reduced the water available for delivery south of the Sacramento-San Joaquin River Delta."

The Bureau of Reclamation must take affirmative actions to fulfill its trust obligation to mitigate, protect, and restore the Tribe's trust resources. The current imperiled status of the fish species that the Tribe relies upon warrants significant action to improve fish habitat, health, and abundance. The Congressional directive to restore fish species in the Trinity and Klamath basins to pre-project levels has fallen far short. Any modification of CVP long-term operations must first consider how the Bureau will fulfill its trust obligation, as well as its statutory obligation, to mitigate, protect, and restore the fish of the Trinity and Klamath rivers. The items identified by the Tribe in Section II.A above are necessary measures to fulfill the Bureau's trust obligations.

Consistent with the Bureau's obligations to fulfill its trust obligations and to consider and minimize any environmental justice impacts, the Tribe also asks the Bureau to evaluate and adopt an allocation of CVP power to the Hoopa Valley Tribe. It is not consistent with principles of environmental justice that the Tribe, who has been disproportionately affected by operation of the CVP/TRD, should not have access to power generated by that project.

In addition, in accordance with its trust responsibilities and pursuant to established law, the Bureau must consult on a government-to-government basis with the Tribe regarding the development of alternatives for continued long-term operation of the CVP/TRD.

C. <u>The Project Area Includes the Trinity River and the Klamath River Downstream of the Trinity-Klamath Confluence</u>.

Section IV of the Notice of Intent describes the Project Area (Area of Analysis) without reference to the Trinity River, the Trinity River watershed, and the Klamath River (and watershed) downstream of the Trinity River confluence. Any evaluation of long-term operation of the CVP must include an evaluation of how the CVP operations will fulfill the purposes of

fish mitigation, protection, and restoration within the Trinity and Klamath Rivers and watersheds, as well as how such operations will be implemented in accordance with the priorities and fiduciary duty owed to the Hoopa Valley Tribe.

D. The Bureau of Reclamation Must Evaluate Alternative CVP Operations That Would Fulfill the Statutory and Trust Obligations to Mitigate, Protect, and Restore Fish and Wildlife and to Limit CVP Impacts on Such Affected Species and Resources.

Section V of the Notice of Intent does make reference to alternatives that may include

- Habitat restoration and ecosystem improvement projects intended to increase fish populations which would be factored into the regulatory process; and
- Modification to existing state and federal facilities to reduce impacts to listed species.

However, the Bureau must consider alternatives that would be designed to achieve the trust and statutory obligations to restore affected fish populations in the Trinity and Klamath Rivers to pre-project levels and, at minimum, to levels that would allow the Hoopa Valley Tribe to fully exercise its federally reserved rights to achieve a moderate living based on fish. The current status of fish species in the Trinity and Klamath Rivers falls well short of either of these obligations. Simply increasing fish populations from their currently very depressed levels is not adequate. Nor are alternatives that only focus on reducing impacts to listed species, rather than all fish species that are affected by CVP/TRD operations. The Bureau must consider alternatives that will fully mitigate, protect, and restore the fish species affected by CVP/TRD operations in the Trinity and Klamath rivers.

Sincerely yours,

MORISSET, SCHLOSSER, JOZWIAK & SOMERVILLE

/s/ Thomas P. Schlosser

Thomas P. Schlosser
Attorneys for Hoopa Valley Tribe

Attachment

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tds:1/31/18

Winnemem Wintu Tribe

14840 Bear Mountain Road
Redding, CA 96003

Transmitted via email: kharrison@usbr.gov

Katrina Harrison, Project Manager
Bureau of Reclamation
Bay Delta Office
801 I Street, Suite 140
Sacramento, CA 95814

Subject: Notice of Intent to Prepare a Draft Environmental Impact Statement, Revisions to the Coordinated Long-Term Operations of the Central Valley Project and State Water Project, and Related Facilities.

Dear Ms. Harrison:

We, the Winnemem Wintu, are an historic Native California Tribe listed as a recognized California Native Tribe by the California Native American Heritage Commission (NAHC), a California Agency. The Winnemem Wintu are also known as: Northern Wintoon, Baird Indians, McCloud River Indians, McCloud Wintu, Okwanuchu (a Shasta Indian word for people of the north), Oylaca (un-ratified Cottonwood Treaty of 1851), Wailacca (various spellings meaning northern people), Northern Wintu, Baird Auxiliary, and many others. The traditional name is Winnemem Wintu, (Winnemem: meaning Middle Water (the McCloud River) and Wintu: meaning People – (Middle Water People)).

The Winnemem's historical territory included the east side of the upper Sacramento River watershed; the McCloud River watershed from origin to termination, the Squaw Creek watershed from origin to termination, and approximately 20 miles of the Pit River from confluence of the McCloud River, Squaw Creek and Pit River up to Big Bend.

As you can see by the breadth and location of our traditional homeland, which covers the upper Sacramento River watershed, and the McCloud river watershed, spanning across three rivers and other tributaries, any water diversions, large or small, can, will and have had an adverse effect on our Tribe's cultural resources, sacred sites, village sites, burial grounds, and sustenance gathering ability. On these points I will elaborate a little further on.

The Bureau of Reclamation (USBR) has opened up a comment period on the above-referenced notice of intent issued December 29, 2017 in the Federal Registrar. It is our understanding that this Notice of Intent (NOI) is the precursor to USBR and the State Water Project (SWP) issuing a new Operational

Criteria and Plan (OCAP) for the Long-Term Operations of the Central Valley Project and State Water Project, and Related Facilities.

The scope and breadth of area this proposed Draft Environmental Statement seeks to address is not only troubling, but fully unrealistic. To attempt to include and address all of the Trinity River - conveyance facilities, storage facilities, Tribal assets, cultural resources, fish species, Court Mandates, settlement agreements, as well as a myriad of other concerns; parts of the Klamath River and all of the same above concerns; and the entirety of the Central Valley Project from the Shasta Dam watershed, to the San Joaquin Valley, all of the facilities and proposed facilities within, all the endangered species within, all the Tribal Cultural Properties, Tribal Assets, Tribal concerns, all of the Court Mandates, Settlement Agreements, contracts and contract allocations, as well as Biological Opinion RPAs and Environmental Justice concerns in a fair, and exhaustive manner, is an insincere proposition at best, or a blatant attempt to undo 30 years of legal, regulatory and environmental protections for the benefit of large corporate water users and Big Ag concerns at worst.

Because of this, we, the Winnemem Wintu Tribe (WWT) appreciate the opportunity to comment on the notice of intent issued December 29, 2017, and its proposed intent to evaluate alternatives that maximize water deliveries and optimize marketable power generation consistent with applicable laws, contractual obligations, and agreements; and to augment operational flexibility by addressing the status of listed species. Our comments address USBR's request for suggestions and information on alternatives and topics to be addressed, including other important issues related to the proposed action.

Further, we incorporate by reference the comments contained in the letter of Natural Resources Defense Council, Bay Institute, Defenders of Wildlife, and San Francisco BayKeeper submitted to the Bureau on January 30, 2018.

Also, further by reference we incorporate the comments contained within the letter submitted by Restore the Delta, dated January 31, 2018.

Public Law 102-575 – Central Valley Project Improvement Act, 1992

Section 3402. Purposes

The purposes of this title shall be:

(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;

(c) To improve the operational flexibility of the Central Valley Project;

(d) To increase water-related benefits provided by the Central Valley Project to the State of California through expanded use of voluntary water transfers and improved water conservation;

(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.

1. Reading the stated purpose of the Central Valley Project Improvement Act (CVPIA), 1992, we cannot find where it states that the Central Valley Project should 'maximize water supply delivery, consistent with applicable law, contracts and agreements, considering new and/or modified storage facilities', as the NOI states as its intent. However, we do see that the CVPIA's first two stated purposes are to, **protect, restore, and enhance fish, wildlife, and associated habitats in the Central Valley and Trinity River basins,** and, **to address impacts of the Central Valley Project on fish, wildlife and associated habitats.**

USBR's mandate is 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. Therefore, any alternatives formulated under this DEIS, and any NEPA analysis **must** cover the full breadth of purpose stated in the CVPIA and not just limited to projects that maximize water deliveries and optimize marketable power generation.

2. The objectives stated in the NOI to increase water deliveries and optimizing marketable power generation were the same objectives and approach behind USBR and DWR's 2004 OCAP. This approach and the resulting 2004 Biological Opinions based on the 2004 OCAP were soundly rejected by the Federal Courts.

2004 OCAP

In 2004 the Bureau of Reclamation and California Department of Water Resources jointly issued a new Long Term Operations Criteria and Plan (OCAP) for the joint operations of the Central Valley Project and the State Water Project. This new plan superseded all previous OCAPs and Biological Opinions (BiOp) and significantly changed the way some operations of the CVP/SWP would be conducted.

Previous BiOps, such as the 1992 and 1993 BiOps, found that the impact of CVP operations (1992 BiOp) jeopardized the continued existence of winter-run Chinook salmon, and the 1993 BiOp arrived at the same conclusion regarding joint CVP/SWP operations. As a result of these biological opinions, several mitigation measures were incorporated into a jointly operated CVP/SWP OCAP, including requirements that the projects be operated in such a way that water temperatures in the Sacramento River at Bend Bridge normally not exceed 56 degrees Fahrenheit from April 15 through September 30, and 60 degrees Fahrenheit through October ("temperature compliance point" requirement), and that at least 1.9 million acre-feet of cold water be held in storage at the end of each water year in Shasta Reservoir to be available for release from Shasta Dam into the Sacramento River to maintain these temperatures during drought years or exceptionally hot weather ("carry over storage requirement"). According to the National Marine Fisheries Service (NMFS), these mitigation measures were required in order to avoid jeopardy to the winter-run salmon.

The 2004 OCAP disregarded these requirements by moving the "temperature compliance point" contained in earlier OCAPs 19 miles upstream from Bend Bridge to Ball's Ferry, thus eliminating nearly 20 miles, or about 42 percent, of the available spawning habitat for the endangered winter-run Chinook. In addition, the 2004 OCAP eliminated the carryover storage requirement for Shasta Reservoir contained in earlier OCAPs and replaced that requirement with an unenforceable "target." Moving the temperature compliance point upstream and eliminating the Shasta Reservoir 1.9 million acre-feet carryover storage requirement each has the effect of allowing dangerously high water temperatures within the winter-run Chinook salmon's critical habitat.

Not coincidentally, moving the temperature compliance point upstream and eliminating the Shasta Reservoir 1.9 million acre-feet carryover storage requirement would also have the effect of making additional water available for export to Central Valley and southern California water users because the amount of cold water that must be retained in Lake Shasta for purposes of controlling water temperature downstream of Shasta Dam would be reduced.

This actually appears to be the case based on information contained in Department of Water Resources DayFlow Database: www.iep.ca.gov/dayflow/output/index.html. From 2003 through

2007 the average combined CVP and SWP exports were right around 1 million acre-feet more then had ever been previously exported.

Biological Opinions

In March of 2004, the Bureau requested formal consultation with NMFS on the impacts of the 2004 OCAP on listed salmon and steelhead Evolutionary Significant Units (ESU)s, which resulted in the preparation of a new written biological opinion on those impacts.

On October 22, 2004, NMFS released its Biological Opinion on the impacts of the 2004 OCAP to listed salmon and steelhead ESUs. The Biological Opinion documented the severe decline of [something was missing here, and I'm guessing what you may have intended, but correct me if I'm wrong] the five salmon and steelhead ESUs due to the joint operations of the CVP and SWP and the substantial additional adverse impacts that the 2004 OCAP would have on those ESUs. Nevertheless, the Biological Opinion concluded that the 2004 OCAP would not jeopardize the continued existence of any of the ESUs nor adversely modify or destroy their critical habitat.

However, a draft of the 2004 BiOp found that the 2004 OCAP would be likely to jeopardize the continued existence of Central Valley spring-run Chinook salmon and Central Valley steelhead and that it would be likely to adversely modify or destroy the critical habitat of the winter-run Chinook salmon. No new scientific date or information had emerged after the draft Biological Opinion was prepared to justify the final Biological Opinion's contrary "no jeopardy" finding.

U.S. Senator Barbara Boxer, U.S. Representative George Miller, and 18 other members of Congress called for investigations into whether improper political pressure had been placed on NMFS to change the draft Biological Opinion's jeopardy conclusion, or whether political appointees played a role in encouraging NMFS to ignore the scientific basis for the initial jeopardy conclusions and to override those conclusions.

In March of 2006, the Winnemem Wintu Tribe, along with eight other Plaintiffs represented by Earthjustice, filed suit challenging the NFMS' Biological Opinion and the 2004 OCAP it supported. In April of 2008, the U.S. District Court for the Eastern District of California issued its ruling in the case, ***Pacific Coast Federation of Fisherman's Associations v. Gutierrez*** **(Case No 1:06-cv-00245)**, which invalidated portions of the 2004 BiOp and remanded it to NMFS for revision.

In 2008 USFWS, and 2009 NMFS issued a new Biological Opinions on the 2004 OCAP, and found that the water pumping operations in the Central Valley for the CVP/SWP jeopardize the continued existence of several threatened and endangered species under the jurisdiction of NMFS.

Federal biologists and hydrologists concluded that current water pumping operations for the CVP and SWP should be changed to ensure survival of winter and spring run Chinook salmon,

> Central Valley steelhead, the southern population of North American green sturgeon and southern resident killer whales which rely on Chinook salmon runs for food.
>
> In arriving at a Reasonable and Prudent Alternative (RPA), which set forth protective measures to improve the chances of survival for designated ESUs, NMFS concluded that analysis showed that, even after all discretionary actions are taken to operate Shasta and Folsom reservoirs to reduce adverse effects of water operations on listed anadromous fish, the risk of temperature-related mortality of fish and eggs persists, especially in critically dry years. This mortality can be significant at the population level. The analysis also led to the conclusion that, due to climate change, the frequency of these critically dry years will increase. [NMFS 2009 BiOp]
>
> NMFS concluded that it believes it is necessary for Reclamation, other fisheries agencies, and DWR, in cooperation with NMFS, to undertake a program to provide fish passage above the rim dams such as Shasta and Folsom, in order to reintroduce winter-run, spring-run, and Central Valley steelhead back into their historical habitats above the dams. NMFS believes that the high-elevation areas of suitable habitat will provide a refuge for cold water fish in the face of climate change.

The NOI ignores ANY of this or other measures that were set in place to protect endangered species throughout the CVP. Nor, does it take into account the actual operations of the CVP and SWP as 'stressors'. In fact, it clearly states the DEIS will 'evaluate stressors on fish other than CVP and SWP operations'. The CVP and SWP stores, transfers, diverts and manages '*water*''. Does USBR think that water and how it is managed and manipulated is not a '**stressor'?** ANY alternatives evaluated in the DEIS must evaluate ***all*** stressors affecting listed species ***including*** CVP and SWP operations. A failure to do so would be ***arbitrary*** and ***capricious.*** This type of approach is what led the Federal Courts to ***reject*** the 2004 OCAP and which brought about the 2008 and 2009 Biological Opinions.

3. The NOI makes this statement regarding NEPA:

> 'Reclamation has ***decided*** to prepare an EIS. As an example for why NEPA is required related to CVP operation, in 2014, the Ninth Circuit Court of Appeals determined that the current, coordinated operation of the CVP and SWP under biological opinions issued by the USFWS and NMFS in 2008 and 2009, respectively, was a major Federal action that affected the quality of the human environment that required the preparation of an EIS.'[emphasis added]

It is interesting to note that USBR decided to prepare an EIS even though they were '***required'*** to do so. It would seem that if something is required to be done that there would be no option to decide not to do it. Yet, USBR basically states that, okay, we have actually decided to follow a required action.

Yet, even with this decision, it seems that USBR is not ready to actually perform this requirement in a meaningful and fiduciary manner. This can be seen by how and USBR intends to perform any NEPA analysis, i.e.:

> 'It is anticipated that this current programmatic effort will be followed by tiered project-level NEPA analyses to implement various site specific projects or detailed programs that were generally described in the programmatic EIS.' [NOI p.3]

In plain English language, this statement says that USBR is going to complete the programmatic EIS with NO NEPA analysis, then, and only then, perform tiered project-level NEPA analysis to implement various site specific projects… generally described in the programmatic EIS. This is pretty much absurd, arbitrary and capricious.

USBR's stated reason for *deciding* to do and EIS was based on the Federal Court's decision and the USFWS and NMFS biological opinions which ALL concluded that the coordinated long-term operation of the CVP and SWP, as proposed in Reclamation's 2008 Biological Assessment, was likely to jeopardize the continued existence of listed species and destroy or adversely modify designated critical habitat. Both Biological Opinions included Reasonable and Prudent Alternatives designed to allow the CVP and SWP to continue operating without causing jeopardy to listed species or destruction or adverse modification to designated critical habitat. Those operations greatly increased water diversions and pumping throughout the CVP and SWP, while cutting temperature compliance points, removing cold water carryover storage requirements and reducing critical habitat for anadromous fish.

In 2016, the U.S. Fish and Wildlife Service and National Marine Fisheries Service concurred that re-initiation was warranted because of the effects of CVP/SWP operations during the ongoing drought, new scientific information on effects of operations of the CVP and SWP that were not considered in the existing biological opinions, and recent data showing extremely low abundance of ESA-listed species. In this context, the purpose and need cannot be limited to projects and alternatives that would increase water supply, as the best available science demonstrates that greater protections for endangered species are required, including actions that will reduce exports. As currently drafted, the purpose and need statement is improperly narrow under NEPA, and it would be unlawful to preclude consideration of alternatives that result in reduced water deliveries from the Delta.

4. The NOI recognizes that there are 'Tribal Assets' on the Trinity River, but fails to acknowledge that there are hundreds if not thousands of Tribal Cultural Properties, Tribal Cultural Resources, and Native American Spiritual Sites throughout the proposed scope of this DEIS. It merely mentions that there may be 'environmental justice issues… . as well as potential impacts within other areas'. This is unacceptable and fails to meet the requirements of the National Historic Preservation Act (NHPA), and Sec. 106 obligations.

> ***Section 106 (16 U.S.C. 470f)***
>
> *The head of any Federal agency having direct or indirect jurisdiction over a proposed Federal or federally assisted undertaking in any State and the head of any Federal department or independent agency having authority to license any undertaking shall, prior to the approval of the expenditure of any Federal funds on the undertaking or prior to the issuance of any license, as the case may be, take into account the effect of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register. The head*

of any such Federal agency shall afford the Advisory Council on Historic Preservation established under Title II of this Act a reasonable opportunity to comment with regard to such undertaking.

There are clear and concise guidelines and procedures throughout the NHPA which must be met and fulfilled prior to any undertaking commencing, including specific reference to: '*Native American Cultural items'*.

The proposed DEIS must contain a full NHPA analysis of the entire designated project area ***prior*** to any undertaking.

5. The NOI states as possible proposed actions considered by the DEIS are: Actions that increase storage capacity upstream of the Delta for the CVP and/or Modification to existing state and federal facilities to reduce impacts to listed species. Both of these proposed actions are troubling to the Winnemem Wintu Tribe.

First, and foremost, is the proposed action to increase storage capacity for the CVP upstream of the Delta which would necessarily include possible enlargement of Shasta Dam. The proposal to raise the height of Shasta Dam by 18.5 feet has been on the table for some time now –a proposed enlargement that we, the WWT strongly oppose.

When Shasta Dam was first constructed, the resulting lake inundated over 90% of our Traditional Homelands along the Sacramento, McCloud and Pit Rivers. Any new enlargement would inundate more Tribal Cultural Properties, historic sites, and Sacred Sites that we still use today. Additionally, the completion of Shasta Dam effectively extirpated all runs of anadromous fish within the upper Sacramento River, the McCloud River and the Pit River by blocking their migration to their historical spawning grounds.

On July 29, 2015, Reclamation transmitted to Congress the Final Feasibility Report and Environmental Impact Statement for the Shasta Lake Water Resources Investigation. Reclamation considered these transmittals a 'final', but has not even begun NEPA analysis on the project. The Winnemem Wintu Tribe is a 'consulting party' for the NEPA and 106 processes, and has not been consulted in any meaningful way regarding this proposed project.

To save time of re-hashing comments and arguments, the WWT comments on the SLWRI EIS can be found here: https://www.usbr.gov/mp/nepa/includes/documentShow.php?Doc_ID=22625.

The proposed DEIS designated in the NOI **must** contain a full NEPA, NHPA, and CEQA analysis on any project associated with a modification to Shasta Dam, and the Winnemem Wintu Tribe **must** be considered 'consulting parties'.

6. There is one part of the possible proposed action stated above that could be supported, and that is the 'modification of state and federal facilities to reduce impacts to listed species'. Reclamation is currently evaluating a Shasta Dam Fish Passage Evaluation under the 2008 NMFS Biological RPA to provide fish passage above the rim dams. The Winnemem Wintu Tribe is also a consulting party on that

project. However, the SDPFE project is only considering a possible 'trap and truck' process for re-introducing salmon above Shasta Dam.

The Winnemem Wintu Tribe opposes this method of re-introduction and submitted a plan for a volitional swim-way around the dam so that salmon can return to their historical spawning grounds. We believe that the only way to help assure the continued existence of the salmon, the winter-run Chinook in particular, is to provide them a return to their natural life cycle.

The WWT's comments on the SDFPE PDEA can be found here in the public comment section and through written comments pps. 31-50

The proposed DEIS designated in the NOI **must** contain a full NEPA, NHPA, and CEQA analysis on any project associated with fish passage around Shasta Dam, and the Winnemem Wintu Tribe **must** be considered 'consulting parties'.

Thank you for the opportunity to comment on this NOI. Please include our contact information on routing of any direct communications the USBR may have related to this proposed action and EIS.

Chief Caleen Sisk
Winnemem Wintu Tribe
caleenwintu@gmail.com

Gary Mulcahy
Government Liaison, WWT
gary@ranchriver.com

(sent via email, kharrison@usbr.gov)

Katrina Harrison
Project Manager
Bureau of Reclamation, Bay Delta
801 I Street Suite 140
Sacramento, Ca 95814-2536

January 31, 2018

Subject: Notice of Intent to Prepare a Draft Environmental Impact Statement, Revisions to the Coordinated Long-Term Operations of the Central Valley Project and State Water Project Facilities

Dear Ms. Harrison:

On behalf of the Chicken Ranch Rancheria Me-Wuk Indians of California, a federally recognized Tribe with trust land holdings west of Jamestown California, we would like to state that it is the Tribe's intent to work with the Bureau of Reclamation to assure that Tribal, in-basin, water supply needs will be accommodated in any "Coordinated Long-Term Operations of the Central Valley Project and State Water Project Facilities."

We make two requests of the Bureau of Reclamation:

1. That the Bureau of Reclamation and the Chicken Ranch Rancheria Me-Wuk Indians of California, immediately initiate a government-to-government relationship in all matters relating to Central Valley Project facilities within the Stanislaus River Watershed, including the preparation of the subject Environmental Impact Statement (EIS).

2. That the Bureau of Reclamation accept the Tribe's request to be identified as a cooperating agency for the preparation of the EIS, in accordance with the National Environmental Policy Act.

The Tribe hereby requests to begin work immediately with the U.S. Dept. of Interior, Bureau of Reclamation (BOR), in a cooperative and constructive fashion related to water resources within their historic Tribal lands - the Stanislaus River Watershed. It is the intent of the Tribe to work with the Bureau to maximize water storage enhancements and ensure the beneficial uses of water within the Stanislaus River Basin (watershed) in meeting modest Tribal needs, while also supporting the stated efforts of the BOR within the subject Notice of Intent, to *"...maximize water deliveries and optimize marketable power generation consistent with applicable laws, contractual obligations, and agreements; and to augment operational flexibility by addressing the status of listed species."*

The Tribe's objective is to achieve self-determination for the Tribe, in part by securing a sustainable long-term water supply through the utilization of water resources - specifically from Stanislaus River sources via New Melones reservoir. Moreover, we believe improving the efficient use of existing non-Tribal water rights on the Stanislaus, coupled with a long-term water transfer, is the most efficient and least disruptive way to meet that objective. Nonetheless, we wish to assure that through any reoperations plan, requisite in-basin water resources will be available to meet long-term Tribal supply needs for municipal and agricultural purposes, within Tuolumne County. We respectfully remind the Bureau of the responsibilities of the United States Government regarding the requisite government-to-government relationship with the Tribe, as well as the Trust responsibilities relative to agricultural land use.[1]

The Tribe is currently developing an agricultural management plan[2] to provide for adequate long-term management of its agricultural lands supported by an adequate, secure and sustainable water supply. Additionally, the Tribe is quantifying requisite long-term municipal supply needs for its lands. This information will be of help to the BOR in the development of the Environmental Impact Statement and adequately quantifying Tribal in-basin water supply needs and supporting Tribal self-determination.

The Tribe, and only the Tribe, can supply the BOR with the essential information for the EIS that quantifies in-basin Tribal water needs, and assures the actions of

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[1] 25 U.S.C. § 3701 et seq.

[2] 25 U.S.C. § 3703 – U.S. Code – Un-annotated Title 25§. Indians §3703. Definitions 25 U.S.C. § 3711 Management of Indian rangelands and farmlands.

the BOR will not conflict with Tribal self-determination and sustainability of a secure water supply.

If you have any questions on this matter please do not hesitate to contact our designated representative John Mills.

Sincerely,

Stephanie Suess
Community & Resources Development Director
Chicken Ranch Rancheria of Me-Wuk Indians of California

John S. Mills
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Cc: Ryan Zinke, Secretary of the Interior
Brenda Burman, Reclamation Commissioner
David Murillo, Director, Mid-Pacific Region

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January 31, 2018

Katrina Harrison, Project Manager
Bureau of Reclamation, Bay-Delta Office
801 I Street, Suite 140
Sacramento, CA 95814-2356

RE: Revisions to the Coordinated Long-Term Operation of the Central Valley Project and State Water Project Facilities

Dear Ms. Harrison,

Thank you for the opportunity to comment on the Bureau of Reclamation's (Reclamation) upcoming programmatic Environmental Impact Statement into Revisions to the Coordinated Long-Term Operation of the Central Valley Project (CVP) and State Water Project (SWP) Facilities.

We are pleased that the Bureau of Reclamation has undertaken the long overdue effort to maximize water delivery and power generation within the CVP. This process gives hope that environmental goals may be more effectively met, and at the same time improve the supply and reliability of the CVP's contracted water supply.

The degradation of the CVP over the last two decades has taken a huge human and economic toll on the water management community and its customers. The instability of water supplies has had a direct and undeniable negative impact on many rural and disadvantaged communities. Water supply shortages directly resulting from regulatory actions in 2016 led to the fallowing of approximately 293,000 acres of farmland south of the Delta, according to researchers at the University of California, Davis[1].

The damage caused by these water supply reductions can affect multiple areas of the CVP. As an interconnected system, shortages in the CVP's Westside San Luis Division often translate into significant challenges for water users in the Friant Division on the Eastside. As less and less water is available it becomes a challenge for Reclamation to fully meet all of its obligations. The cascading effect of these shortages impacts thousands of farm families, millions of acres of farmland, California's vitally important farm worker community, and the rural areas that depend on agriculture for their survival.

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[1] Medellin-Azuara, Josué, et al. "Estimates of Irrigated Cropland Idled Due to the 2016 California Drought: Clarifications and Supplemental Information." *Estimates of Irrigated Cropland Idled Due to the 2016 California Drought: Clarifications and Supplemental Information*, Center for Watershed Sciences, UC Davis • ERA Economics • UC Davis Agricultural Issues Center, 1 Sept. 2016.

Central Valley farmers utilize the highest levels of moisture monitoring systems, solar power and minimally impactful equipment available on the market today. Even with the most advanced technologies, farmers still need water to grow their crops. For many, the CVP is the only source of this critical water supply.

Over the years the reliability of water project deliveries has diminished considerably. Allocation announcements often come too little and/or too late in the season to be useful in determining which crops and how much of each a farmer is able to plant. In 2016 Reclamation announced a five percent allocation for South of Delta Water Service Contractors, despite a near normal water year.[2] In contrast, the State Water Project ultimately provided a 60 percent allocation[3] to its customers even though its principle reservoir, Lake Oroville, held 811,000 acre-feet less water than the CVP's Lake Shasta at the end of January.[4]

In addition to a dismal five percent allocation these CVP water users were not provided access to their water until far too late in the season for it to be of any benefit for the 2016 growing season.

There have been, and continues to be, relevant scientific advances made of our understanding of the Delta ecosystems which need to be put into practice. Stressor evaluations of other than CVP and SWP operations, non-flow measures to decrease stressors, and habitat restoration are a few that could yield significant improvement to water users. Multiple factors, not the least of which were the 1992 Central Valley Project Improvement Act along with the 2008 and 2009 Salmon and Delta smelt biological opinions, have led to CVP water supply reliability for South of Delta Water Service Contractors falling from 90 percent in 1990 to about 30 percent today.

Despite the redirection of water supplies, ostensibly for the benefit of these listed anadromous fish species, populations of listed fish have not rebounded. It is incumbent that this evaluation determine, 1) why these water supply cuts have failed to result in higher population numbers for listed species and, 2) what measures can be undertaken to provide the benefits that water users and the environmental community are seeking.

In testimony[5] before the United States House of Representatives Subcommittee on Water, Power, and Oceans, Doug Demko, president of the environmental consulting firm *Fishbio* stated,

> ***"...increased flow appears to be the popular red herring for recovering native fish populations, but scientific studies continue to indicate that water releases from rim dams are no silver bullet: more water doesn't equal more fish..."***

Demko added,

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[2] "Central Valley Project (CVP) Water Supply for 2016." *Central Valley Project (CVP) Water Supply for 2016*, US Department of Interior, Bureau of Reclamation, Mid-Pacific Region, 31 Mar. 2016, www.usbr.gov/mp/cvp-water/docs/1-cvp-water-quantities-allocation.pdf.

[3] "State Water Project Allocation Increased." *News Releases*, California Department of Water Resources, 21 Apr. 2016, www.water.ca.gov/news/newsreleases/2016/042116.pdf.

[4] "Current Conditions for Major Reservoirs." *Major Reservoir Current Conditions Graphs*, Department of Water Resources, California Data Exchange Center, 31 Jan. 2016, cdec.water.ca.gov/resapp/RescondMain.

[5] Demko, Doug. "Written Testimony, United States House of Representatives Subcommittee on Water, Power, and Oceans." *2016 Predation Testimony*, 16 Feb. 2016, fishbio.com/predation_testimony.

"The overwhelming majority of predation on juvenile Chinook salmon is the result of non-native predators that were intentionally stocked by California Department of Fish & Wildlife. Most of the non-native fish species (69%) in California, including major predators, were intentionally stocked by CDFW for recreation and consumption beginning in the 1870s."

The 1992 Central Valley Project Improvement Act required the doubling of natural production of anadramous fish within 10 years. This requirement included non-native striped bass, which created competing goals of doubling both salmon and their predators. Radio tracking of marked salmon smolts as far back as 1998 and 1999 showed that adult striped bass were consuming large numbers of hatchery salmon during their migration to the sea. After 15 years of juvenile salmon migration studies and monitoring the U.S. Fish and Wildlife Service determined that the survival rate for young salmon due to predation was just seven percent, much lower than the 40%-60% estimate by the then California Department of Fish and Game.

In addition, the current policy ignores the fact that full delivery of the CVP commitment has positive environmental impacts. The Central Valley's ecosystem resources, including public and privately managed wetlands, have immense value. Local partnerships between farmers and irrigation districts are essential to meeting the needs of some of California's last remaining wetlands.

Published information by the San Luis & Delta-Mendota Water Authority describes the positive relationship between San Joaquin Valley farms and the area's national wildlife refuges that depend on CVP water.[6] Local partnerships between farms and both public and private wetland areas help stretch these water supplies. While positive, these activities are only successful when adequate CVP water is available to meet all of the Project's purposes, including refuge water supplies and irrigation water for the production of food and fiber.

"California's San Joaquin Valley is rich with birds, plants, animals, fish and insects. Its rivers, streams and wildlife sanctuaries host millions of waterfowl, Tule elk, turtles, cranes, deer and many other species that call the San Joaquin Valley home. California's productive farmland and important wildlife areas both need reliable water supplies. CVP deliveries to these areas as well as agricultural districts are critical to the health of the flyway and the diverse wildlife this region supports.

San Joaquin Valley Landscapes[6]

Once again, thank you for the opportunity to comment. It is our hope that the Bureau of Reclamation will recognize the significant needs of water users within the CVP and will strive to modify the system to maximize water deliveries to one of the United States' most important food growing regions.

Sincerely,

Mike Wade

Mike Wade
Executive Director

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[6] "San Joaquin Valley Landscapes." *SLDMWA*, 5 Jan. 2018, www.sldmwa.org/environment/

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January 26, 2018

Via Electronic Mail and First-Class Mail

Ms. Katrina Harrison
Project Manager
United States Bureau of Reclamation
Bay-Delta Office
801 I Street, Suite 140
Sacramento, California 95814-2536
kharrison@usbr.com

Subject: Bureau of Reclamation's Notice of Intent to Prepare a Draft Environmental Impact Statement, Revisions to the Coordinated Long-Term Operations of the Central Valley Project and State Water Project, And Related Facilities [82 Fed. Reg. 61789 (Dec. 29, 2017)]

Dear Ms. Harrison:

The Sacramento River Settlement Contractors (Settlement Contractors) submit this letter in response to the Bureau of Reclamation's (Reclamation) above-referenced Notice of Intent (NOI). The NOI states that Reclamation intends to prepare a programmatic Environmental Impact Statement (EIS) for analyzing potential modifications to the continued long-term operations of the federal Central Valley Project (CVP) in a coordinated manner with the State Water Project (SWP). The NOI also states that Reclamation proposes to evaluate alternatives that maximize water deliveries and optimize marketable power generation consistent with applicable laws, contractual obligations, and agreements; and to augment operational flexibility by addressing the status of listed species. Reclamation requests suggestions and information on the alternatives and topics to be addressed in the draft EIS, and any other important issues related to the proposed action.

At the outset, the Settlement Contractors fully support Reclamation evaluating alternatives that would maximize water deliveries and power production, in a manner consistent with applicable law and contractual requirements. Of course, Reclamation's performance of its obligations under the Sacramento River Settlement (SRS) Contracts is a fundamental operational requirement underpinning the alternatives that Reclamation should consider. The Settlement Contractors understand that any and all alternatives evaluated will ensure that Reclamation meets its contractual requirements under the SRS Contracts.

The draft EIS will also have to address the numerous competing and complementing actions related to continued long-term operations and the associated Reinitiation of Consultation with the federal resource agencies. These actions include, but are not limited to: (1) Biological Opinion Implementation; (2) the Collaborative Science and Adaptive Management Program (CSAMP/CAMT); (3) the Coordinated Operations Agreement; (4) CVP Cost Allocation; (5) Shasta RPA Adjustment; (6) Voluntary Settlement Agreements related to the Bay-Delta Water Quality Control Plan Update; (7) CA WaterFix and Adaptive Management Inter-agency Implementation Coordination Group; (8) WIIN Act Compliance; and (9) Structured Decision-making for the CVPIA Anadromous Fish Program and the Delta.

The NOI states that the potential alternatives to be considered include "[a]ctions that increase storage capacity upstream of the Delta for the CVP." In this regard, the Settlement Contractors encourage and request Reclamation to evaluate the potential integration of the proposed Sites Reservoir Project with continued long-term CVP operations, to assist with the maximization of water deliveries for both water supply and public benefit purposes.

The Settlement Contractors also request and encourage Reclamation to evaluate the development and implementation of a comprehensive shared and integrated science planning effort related to long-term operations. This should include a robust, transparent, and collaborative science work plan, which is absolutely critical to inform multi-benefit water management decisions and improve the recovery of salmonid species in the Sacramento River Basin. Reclamation and the National Marine Fisheries Service (NMFS) have developed a Science Work Plan associated with the proposed amendment of the Shasta Reasonable and Prudent Alternative (Shasta RPA) under NMFS 2009 Biological Opinion. The Settlement Contractors appreciate this effort and encourage further efforts to enhance comprehensive, integrated approaches.

In this regard, the Settlement Contractors are working on the development of the "Sacramento River Mainstem Integrated Water Management Plan," which adopts a balanced approach to provide water and habitat for agriculture, fish, wildlife, and other beneficial uses in the Sacramento River region. The goal is to create a comprehensive water and habitat management plan that will ultimately result in greater water supply reliability for farmers and communities and enhanced habitat along the Sacramento River for fish and wildlife. Participation in this Plan is expected to be very broad, encompassing federal, state and local agencies, irrigators, conservationists, recreational organizations, and business groups. The Plan is modeled after the highly successful Yakima River Basin Water Enhancement Project. (See Pub.L. No. 103-434 (108 Stat. 4550).)

A key component of the Plan will be the development and implementation of a collaborative science plan.[1] Since water operations and fishery management decision-making on the Sacramento River are intricately connected, it is imperative that integrated science and monitoring programs inform operational decisions and restoration activities.

[1] In addition, the development of a collaborative science plan will have utility in numerous settings and ongoing regulatory processes, including but not limited to the Voluntary Agreement process related to the Bay-Delta Water Quality Control Plan Update, and the proposed Shasta RPA adjustment being considered in Reclamation's Reinitiation of Consultation on the Long-Term Operations of the CVP (ROC-LTO).

By cooperatively identifying, incorporating, and improving tools and models, we can ultimately improve operations and salmon recovery. The effectiveness of any plans or agreements related to the Sacramento River Basin will depend on them being collaborative products that use the best available science and technology. Accordingly, the draft EIS should evaluate the development and implementation of a collaborative science plan that would inform and guide continued long-term operations.

Finally, the Settlement Contractors request and encourage Reclamation to evaluate how the potential alternatives considered will ensure compliance with the Wilkins Slough 5,000 cubic foot per second (cfs) navigation flow standard, which is not discretionary. In this regard, Congress initially authorized the construction of certain facilities for the CVP under the Rivers and Harbors Act of 1935 (the 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 Number 35. This document is a 1934 report from the Corps' Chief Engineer recommending to Congress that Kennett Dam (predecessor to Shasta Dam) "shall be operated so as to provide a minimum flow of 5,000 cubic feet per second between Chico Landing and Sacramento." (See Central Valley Project Documents, part I, 544, 548 (Committee Doc. 35, 73rd Cong.).)

Congress re-authorized the CVP under the Rivers and Harbors Act of 1937 (the 1937 Act) (50 Stat. 844, 850). This re-authorization mandated in relevant part that "the $12,000,000 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 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 5,000 cfs between Chico Landing and Sacramento. There has been no subsequent action by Congress that has "discontinued" or otherwise changed this minimum navigation flow requirement.

The 1937 Act also mandates that CVP "dams and reservoirs *shall* be used, *first*, for river regulation, improvement of navigation, and flood control; second, for irrigation and domestic uses; and, third, for power." (50 Stat. 844, 850, emphasis added; *see also United States v. State Water Resources Control Bd.* (1986) 182 Cal.App.3d 82, 135.) In 1992, Congress explicitly amended this hierarchy of use by enacting sections 3406(a) and (b) of the Central Valley Project Improvement Act (Pub.L. No. 102-575 (1992)), which make protection of non-ESA listed fish and wildlife coequal priorities with irrigation. Even with this amendment, however, Reclamation's first priority remains river regulation, navigation, and flood control. In fact, the Settlement Contractors rely on the priority of the Wilkins Slough minimum navigation flow requirement. For example, on the Sacramento River, all major diversions have positive barrier flat-plate fish screens

installed that provide protection to listed fishery species. These screens have been designed with an approach velocity of 0.33 feet/second, as required by NMFS and the California Department of Fish and Wildlife. During design, the screens, velocities and diversion rates were based upon the Wilkins Slough flow requirement of 5,000 cfs, given that this flow standard is controlling under federal law. As such, if Reclamation reduces flows below the Wilkins Slough flow requirement, then some screens may not meet the velocity criteria as designed, and diversion pumps can experience dangerous cavitation and other operational issues. Accordingly, any and all alternatives must address compliance with the Wilkins Slough flow standard.

The Settlement Contractors appreciate Reclamation's consideration of these comments. If you have any questions, please contact the undersigned at (530) 735-6274.

Sincerely,

Roger Cornwell

Roger Cornwell, President
Sacramento River Settlement Contractors

cc:
David Murillo
David Mooney
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February 1, 2018

Katrina Harrison
Project Manager
United States Bureau of Reclamation
Bay-Delta Office

Sent Via Electronic Mail to: kharrison@usbr.gov

Re: Comments on Scope of the Programmatic Draft Environmental Impact Statement, Revisions to the Coordinated Long-Term Operation of the Central Valley Project and State Water Project, and Related Facilities (Notice of Intent dated December 29, 2017 – Federal Register 82-249, p. 61791)

Dear Ms. Harrison:

The following comments are made on behalf of the South Valley Water Association ("SVWA"), an association of the Friant Division Central Valley Project ("CVP") contractors made up of the following member irrigation and water districts: Delano-Earlimart Irrigation District, Exeter Irrigation District, Ivanhoe Irrigation District, Lower Tule River Irrigation District, Pixley Irrigation District, Shafter-Wasco Irrigation District, Stone Corral Irrigation District and Tea Pot Dome Water District.

The SVWA Members have direct and indirect interests in the operations of the CVP and any proposed revisions to coordinated long-term operations with the State Water Project ("SWP") and other related facilities. Consistent with those interests, we provide the following comments:

Comment 1: Actions and Alternatives To Be Considered in EIS Must Not Disturb Existing Priorities For the San Joaquin River Exchange Contract Supplies Under Established Water Rights

The Bureau of Reclamation's ("Reclamation") Notice of Intent ("NOI") describes the proposed action in general terms, and as a result, it acknowledges that the Environmental Impact Statement ("EIS") is to be primarily programmatic in nature. That is, it will describe broad categories of projects and operational and regulatory changes, and combinations of the same, but will not assess project-level impacts of those changes. Specifically, the description of the proposed action is: "Potential modifications to the continued long-term operation of the CVP" to achieve a variety of water supply enhancements and other benefits. A number of specific kinds of modifications are described. One of the areas of proposed modifications is: "Maximize water supply delivery, consistent with applicable law, contracts and agreements, considering new and/or modified storage and export facilities."

SVWA Members are primarily concerned with the clause "consistent with applicable law, contracts and agreements." The CVP was built and is operated under rights that have been

established over time, through a succession of purchases and exchanges of existing rights, and new rights applications, permits and licenses. All of these various rights have different sources and different priorities, both internally (among the various CVP sources) as well as externally (as compared to other water rights holders such as the SWP). A key to the successful operation of the CVP and SWP has been an adherence to these established water rights and priorities. Absent this adherence, the operation of the projects would devolve into discord and dispute, and ultimately a failure to operate in a coordinated fashion for the maximum benefit of all water users.

Reclamation's NOI appears to recognize this by inclusion of the clause "consistent with applicable law, contracts and agreements". SVWA Members interpret this clause expansively: "applicable law" includes the law of water rights and priorities, and therefore the directive in the NOI would be appropriately read as "consistent with existing water rights and priorities". Accordingly, Reclamation's efforts under this NOI should not include a revisiting of water rights and priorities, both as they relate to non-CVP water users as well as among CVP divisions. Even a mere investigation or reassessment of such priorities would create the likelihood of disputes and would sidetrack the important work of maximizing water supply through operational enhancement or other changes.

SVWA Members specifically are committed to the preservation of the Exchange Contract supply priority to Delta diversions, which are at the historical foundation of the CVP. We will be opposed to any effort that seeks to reassess, investigate or potentially modify that priority. Instead, we assert that the process described in the NOI should be focused on efforts that can be undertaken that do not question this priority.

SVWA Members are also opposed to the inclusion of any potential action that has the potential to interfere with, or have effects on, the existing Exchange Contract Delta supply priority. An example of such an action would be the construction or alteration of facilities that are used to elevate other water users' ability to divert on a higher priority.

We request that Reclamation specifically clarify that such actions will not be considered under the project as described in the NOI.

Comment 2: The EIS Should Not Include Assessment or Consideration of Alternative San Joaquin River Releases From Millerton Reservoir

As noted in Comment 1, the NOI describes the subject proposed action as including actions to "maximize water supply delivery, consistent with applicable law, contracts and agreements, considering new and/or modified storage and export facilities." Similar to our concerns described in Comment 1, SVWA Members note that releases from Millerton Reservoir other than to the Friant Division contractors are currently controlled by existing "law, contracts and agreements," all of which must not be disturbed. Specifically, releases from Millerton Reservoir are specifically addressed in, among other things, the Central Valley Project Improvement Act, the San Joaquin River Settlement ("the Settlement"), the San Joaquin River Restoration Act ("the SJRRA"), Friant Division Permanent 9d Contracts, the long-standing purchase and exchange contracts involving the San Joaquin River Exchange Contractors, and various settlement contracts. Prior to the Settlement and the SJRRA, it was widely acknowledged that operation of the Friant Division has no

impact on the remainder of the CVP due to the lack of any regular connection between the upper and lower portions of the San Joaquin River. With the commencement of Restoration Flows under the Settlement and SJRRA, it was recognized that the limited connection that those flows established required assessment under NEPA and the Endangered Species Act. In fact, that assessment was completed in 2012, and no changes to the operations as envisioned and mandated by the Settlement or the SJRRA have occurred since then. Because of this, it would not be appropriate to include the topic of releases from Millerton Reservoir for reassessment or investigation of any alternatives to the releases authorized by the SJRRA at this time.

Any effort that includes a reassessment or investigation of the principles contained in the above-noted laws, contracts and agreements would be detrimental to the overall process in that it would unnecessarily raise new controversies. We request that Reclamation confirm that such an effort will not be included in the project described by the NOI.

Comment 3: Primary Focus of the Project Should be Implementing Non-flow Measures that Are More Beneficial to Fish Populations than Flow Restrictions

Reclamation proposes to augment operational flexibility by addressing the status of listed species. SVWA Members support this proposal, and urges that specific non-flow alternatives be identified that would provide benefits to species and lessen the dependence on export restrictions and other flow restrictions as measures to protect species.

SVWA Members and FishBio have submitted non-flow alternative actions for consideration in the re-initiation of consultation for long term operations of the CVP and SWP at the January 19th, 2018 technical meeting in Sacramento. These alternatives propose various efforts to reduce the extreme impact of predation and competition from non-native species.

SVWA Members assert that focus on non-flow measures, with a strong emphasis on reducing the impacts of non-native species, is imperative to an improved operation of the CVP. The current biological opinions and other regulatory structures focus exclusively on flow measures, despite widely accepted science that shows that other stressors, including loss of or modification to habitat and huge increases in non-native fish populations, are having a much greater negative impact on the viability of the species. Simply put, all of the flow restrictions used to date have not, and cannot, solve the problem, and this requires the parties to consider non-flow alternatives.

SVWA Members suggest that this category of potential actions should receive the highest priority in the NOI process.

Comment 4: Subsequent site-specific projects, and their priority levels, need to be identified in the proposed draft programmatic Environmental Impact Statement (EIS)

SVWA Members support the overall effort by Reclamation to holistically evaluate the operations of the CVP and the SWP for improvements to maximize water supply. However, as noted in Comments 1 and 2, the generality of this process can create, and has created, uncertainty among the water users about the nature of the proposed revisions. This uncertainty would be relieved by

a more specific description of the actions being considered. A priority to the process, therefore, should be to arrive at these specific project descriptions at the earliest point possible.

The NOI states that the EIS is to be primarily programmatic in nature and that future project-level NEPA analysis will be performed for various site-specific projects or detailed programs that were described in the programmatic EIS. After Reclamation describes future site-specific projects or detailed programs, it should also provide a comprehensive and prioritized list or table of those projects and programs.

Among other things, the EIS should be specific as to how Re-initiation of Consultation (ROC) on the 2008 and 2009 smelt and salmon biological opinions will proceed. The Water Infrastructure Improvement for the Nation Act of 2016 ("WIIN Act") specified a direct role for water users, such as the members of SVWA, in the ROC process. SVWA's Members are benefited by this legislative direction, and have been committed to participating in the manner identified in that law. The ROC process, which has been formally under way since late 2016, relates to many of the same topics addressed in the EIS that is to be developed under the subject NOI. It is unclear how the process commenced under the NOI differs from or modifies the ROC process already underway. SVWA Members are concerned that the specific directives to all of the federal agencies to involve water users in the ROC process in a specific way, as contained in the WIIN Act, may be avoided or made moot by the confusion caused by the new process started with the NOI. This confusion could be cured by a clear statement by Reclamation regarding how the ROC process, and the water user involvement directives of the WIIN Act related to that process, will be incorporated into the NOI process.

Conclusion

SVWA Members appreciate the opportunity to comment on the NOI, and we look forward to actively participating in the development of the EIS.

Sincerely,

PELTZER & RICHARDSON, LC

Alex Peltzer
General Counsel to South Valley Water Association

February 1, 2018

Katrina Harrison, Project Manager
United States Bureau of Reclamation, Mid-Pacific Region
Bay-Delta Office
801 I Street, Suite 140,
Sacramento, CA 95814-2536

VIA EMAIL TO: kharrison@usbr.gov

Re: Comments on Notice of Intent to prepare a draft Environmental Impact Statement for proposed revisions to the coordinated Long-Term Operations of the Central Valley Project and State Water Project and their facilities

Dear Ms. Harrison:

Thank you for providing an opportunity to submit comments on the scope of the draft Environmental Impact Statement for the proposed revisions to the coordinated Long-Term Operations of the Central Valley Project and State Water Project and their facilities. The agencies that have signed this letter rely on water supplies diverted from the American River and are signatories to the 2000 Water Forum Agreement, under which a coalition of over 35 cities, counties, water suppliers, environmental groups, business organizations and public stakeholders agreed to work together to manage the region's water resources to meet two co-equal objectives:

- Provide a reliable and safe water supply for the region's economic health and planned development to the year 2030; and
- Preserve the fishery, wildlife, recreational, and aesthetic values of the lower American River.

We are pleased to have Reclamation as an active partner in the important work being undertaken by the Water Forum. Since Reclamation has been engaged in these regional efforts, we know you already understand that each of the agencies that has signed this comment letter is keenly interested in the operations of Reclamation's Folsom Unit within the CVP American River Division, and the effects that proposed changes to Central Valley Project operations could have on regional water supplies and flows in the lower American River.

To that end, we offer the following three comments on the scope of the DEIS. First, the long-term operations of the Central Valley Project must incorporate the Modified Flow Management Standard. As Reclamation is well aware, the numerous parties to the Water Forum Agreement have worked very hard to strike a reasonable balance that protects sufficient amounts of water supplies to ensure both reliable deliveries for municipal and industrial uses and cold water flows needed to support fisheries in the American River. Following the 2013 – 2015 drought, water suppliers and environmental groups in our region incorporated the new data points and adjusted the flow regime to ensure protection of both instream and municipal uses of the water through multi-year dry periods. The analysis of the long-term operations of the Central Valley Project should incorporate this flow and storage regime, which all the affected regional stakeholders have jointly agreed to implement.

Second, we applaud Reclamation's stated goals of "maximiz[ing] water supply delivery, consistent with applicable law, contracts and agreements, considering new and/or modified storage and export facilities," and "evaluat[ing] potential changes in laws, regulations and infrastructure that may benefit power marketability," and we recognize how difficult it can be to implement operational changes in this complex system. However, we do wish to reiterate that the proposed changes to the long-term operations should not result in unmitigated redirected impacts to the water supplies of upstream CVP contractors, water rights holders, or fisheries. In other words, the goal of the proposed changes to long-term operations should be more reliable deliveries for <u>all</u> CVP contractors, not an increase in supplies available south-of-Delta at the expense of impacts upstream on reservoir storage levels, fisheries, water rights and CVP contractor allocations, and overall water supply reliability, particularly in dry year and multi dry year scenarios, which are the times of greatest concern for water agencies.

Third, we ask that the modeling and analysis undertaken for the reconsultation and the EIS incorporate the "best available commercial and scientific data," including current information regarding topics such as anticipated American River water demands and inflows to Folsom Reservoir. For example, updated hydrology for the inflows to Folsom has been developed during the Federal Energy Regulatory Commission relicensing process for the upstream power-generating reservoirs. Any modeling and analysis of American River operations that is undertaken as part of this reconsultation and its associated NEPA review should utilize this updated and more accurate hydrological information. Likewise, any modeling of the system should include full demand projections for contractors and water rights holders on the American River.

Thank you for your consideration of these comments. The agencies listed on this letter request to be recognized as cooperating agencies for this NEPA process, either individually or collectively, given their special expertise concerning potential impacts upon American River resources and water supplies. We look forward to working productively with Reclamation on this program.

Please do not hesitate to contact us should you have any questions on the issues addressed above.

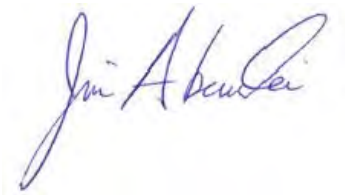
Sincerely,

Paul Helliker
General Manager
San Juan Water District

Marcus Yasutake
Environmental & Water Resources Director
City of Folsom

Michael L. Peterson,
Director/Agency Engineer
Sacramento County Water Agency

Richard D. Plecker
Environmental Utilities Director
City of Roseville



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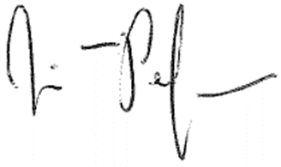

James Peifer
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February 1, 2018

Katrina Harrison
Project Manager
Bureau of Reclamation, Bay-Delta Office
801 I Street, Suite 140
Sacramento, CA 95814-2536

Sent via email to kharrison@usbr.gov

RE: Comments on the Notice of Intent to Prepare a Draft Environmental Impact Statement, Revisions to the Coordinated Long-Term Operation of the Central Valley Project and State Water Project, and Related Facilities

Dear Ms. Harrison:

Contra Costa Water District (CCWD) appreciates this opportunity to provide comments on the Bureau of Reclamation's (Reclamation) Notice of Intent to Prepare a Draft Environmental Impact Statement, Revisions to the Coordinated Long-Term Operation of the Central Valley Project (CVP) and State Water Project (SWP), and Related Facilities (NOI). CCWD is a CVP water service contractor, and relies on the CVP for a significant portion of the drinking water supply that CCWD delivers to over 500,000 people in eastern and northern Contra Costa County.

CCWD operates four water intakes in the Sacramento-San Joaquin Delta, under its own water rights as well as Bureau of Reclamation water rights through CCWD's CVP contract. CCWD operations are regulated by Biological Opinions by the U.S. Fish and Wildlife Service and the National Marine Fisheries Service and an Incidental Take Permit by the California Department of Fish and Wildlife (collectively, "CCWD-specific permits), which are independent of the permits for the long-term operation of the CVP and SWP. The CCWD-specific permits include operational restrictions for fish protection: a 75 to 90 day period when the CCWD's Los Vaqueros Reservoir cannot be filled and a 30 day period when CCWD cannot divert any water from the Delta.

Two of CCWD's intakes – CCWD's Old River Intake and Middle River Intake – are located in the region of the Delta near the Old River and Middle River (OMR) flow gauges. Since OMR restrictions have been in place, Reclamation and DWR have requested that CCWD further limit its operations by reducing filling of Los Vaqueros Reservoir. CCWD's Old and Middle River intakes have state of the art fish screens and are located along the sides of the river channels. Monitoring data and research indicate that CCWD's screens and operations are highly effective at protecting aquatic species. In over 20 years of operation since the construction of CCWD's Los Vaqueros Reservoir and Old River fish screens, CCWD has diverted over one million acre-feet of water from the Delta, yet CCWD has caught zero Chinook salmon, zero adult smelt and only 15 juvenile or larvae smelt at our intakes. For comparison, from 1997 to 2010, approximately one-half million adult and juvenile delta smelt have been caught at CVP and SWP export facilities in the south Delta.

This disparity in direct impacts to listed species is not taken into account in the implementation of the current coordinated operation of the CVP and SWP. CCWD requests that the Draft Environmental Impact Statement consider an alternative in which implementation of OMR restrictions is dependent on the relative impact of individual diversion facilities. This alternative should include consideration of the pre-screen loss that occurs in Clifton Court Forebay. Although the impact of Clifton Court Forebay is not measured by the salvage counts at the Skinner Delta Fish Protective Facility, predation loss in Clifton Court Forebay has been estimated by numerous studies and should be included in the analysis.

If you have any questions or would like to discuss this request, please contact me at (925) 688-8083 or lorloff@ccwater.com.

Sincerely,

Leah Orloff
Water Resources Manager

LO/DS:wec

FRIANT
WATER AUTHORITY

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February 1, 2018

Ms. Katrina Harrison
Bureau of Reclamation
801 I Street, Suite 140
Sacramento, CA 95814
Via Email to Kharrison@usbr.gov

Subject: Notice of Intent (NOI) to Prepare a Draft Environmental Impact Statement (DEIS), Revisions to the Coordinated Long-Term Operation of the Central Valley Project (CVP) and State Water Project (SWP), and Related Facilities Pursuant to 82 Fed. Reg. 61789 (12/29/2017).

Dear Ms. Harrison:

Friant Water Authority (FWA) appreciates the opportunity to comment on the NOI. FWA is a public agency formed by its members under California law to operate and maintain the Friant-Kern Canal, which is within the Friant Division of the Bureau of Reclamation's CVP. FWA represents our members in federal and state policy, political, and operational decisions that could affect the water supply of the Friant Division. As such, FWA has both a unique understanding of the Friant Division and a direct interest at stake regarding any potential revisions to the coordinated long-term operation of the CVP and SWP. Therefore, as part of this comment letter, FWA is requesting it be designated a Cooperating Agency on the development of the DEIS under the National Environmental Policy Act. We believe FWA meets the criteria for Cooperating Agency status under the Council on Environmental Quality Act Regulations (40 CFR 1508.5 & 1501.6).

FWA appreciates and supports Reclamation's stated position in the NOI that Reclamation is seeking to maximize water deliveries, which in our view is a fundamental component of water contracts and inherent in Reclamation law. Quite simply, too many growers in the San Joaquin Valley and elsewhere are continuing to suffer due to over-regulation of the water supply system, which, as explained below, has not provided any meaningful benefits for the fish species they are designed to protect. A course correction is badly needed.

In reviewing the NOI and through discussion at the staff level, it has become apparent that Reclamation is re-evaluating its discretion throughout the CVP, including regarding Friant Division operations. It is also our sense that questions are being raised as to whether Friant Division Contractors are appropriately contributing towards meeting CVP environmental requirements. FWA agrees and supports the understanding that all users of water in the system should be responsible for addressing their impacts. We also believe the on-the-ground facts show that Friant Division Contractors are meeting their obligations and are indeed "carrying our own weight" relative to the environment.

As a threshold matter, and despite being one of the original three divisions of the CVP and therefore senior to the San Luis Unit, the Friant Division has, over the years, nonetheless suffered more frequent shortages of contract maximum allocations than San Luis contractors. Despite the variability of our water supply, Friant Division Contractors have also been leaders in the care and stewardship of the environment. Entering into the San Joaquin Settlement and dedicating approximately 28% of the unimpaired flow of the San Joaquin River- our primary source of water- to address salmon restoration issues is but one example. Moreover, Friant Division Contractors have paid over $270 million into the Central Valley Project Improvement Act (CVPIA) Restoration Fund from 1993 through 2017, including over $100 million through the so called "Friant Surcharge, " which specifically levies additional charges on Friant Division Contractors to ensure they are carrying their fair share in light of CVPIA prohibitions on using Friant water in meeting refuge demands.[1] Thus, we respectfully disagree with any narrative that Friant Contractors are not carrying our fair share of environmental obligations for the CVP.

We are concerned that Reclamation is choosing to reevaluate its discretion with regard to Friant Division Operations through this scoping process instead of direct engagement with FWA and we respectfully reiterate our previous request for immediate and direct discussion on these issues. Currently, FWA is engaged in a process with Reclamation and other stakeholders over the San Joaquin River Restoration Program (Program). Of significant concern to FWA are potential actions by Reclamation to interpret Program authorities (Public Law 111-11 and the State Water Resources Control Board (SWRCB) actions necessary to implement the Program) as providing the means to reallocate Friant supplies to other uses wholly unrelated to the Program. It is particularly difficult for FWA to understand these actions in light of the specific and widely documented agreement among all the Program parties that these changes were solely intended to implement the Program--not to expand Reclamation's authority to reallocate Friant water for other uses. For this reason, there are significant issues under both federal and state law with such an approach. We also believe that such actions are inherently inconsistent with Program requirements to reduce or avoid adverse water supply impacts to Friant Division contractors that may result from the release of restoration flows. If Reclamation is indeed considering such actions, we reiterate our request for open and substantive discussions prior to any final decision.

[1] For illustrative purposes only – and based on the simple computation of water deliveries times Restoration Fund charges – the next largest south-of-delta water user in the CVP has paid approximately $124 million into the CVPIA Restoration Fund.

FWA also has specific comments as follows:

Subsidence /Ground Water Overdraft

As Reclamation is aware, the Friant Division was originally designed as an early conjunctive use project where excess surface water is provided to recharge groundwater aquifers, and the project has until recently restored groundwater levels throughout the Friant Division service area. Unfortunately, due to severe drought, and in particular, substantial pumping of groundwater by landowners outside of the Friant Division service area, the San Joaquin Valley is in a severe groundwater overdraft, which is causing the ground to continue subsiding. This subsidence in turn creates significant inefficiencies in the operation of the Friant-Kern Canal, limiting the amount of surface water that may be delivered, which in turn prevents any additional supplies from being used to recharge the aquifer. Our view is that there must be alternatives that evaluate meeting ESA demands while not exacerbating the impact of dedicating surface water from the San Joaquin Valley for uses in the Delta.

Programmatic Approach

Although not stated in the title to the NOI, in the summary section and elsewhere, the NOI states the DEIS will be using a programmatic approach. FWA would like further clarification as to what is meant by such an approach. For example, will the biological opinion also take a programmatic approach? Does a programmatic approach mean that additional analysis will be required? These questions are very important given that, as noted above, our growers continue to suffer from the effects of over-regulation and need relief sooner rather than later.

Formulation of a Maximized Delivery Alternative

Given the stated goal to maximize water deliveries, FWA would like to see the NOI formulate and analyze an alternative that assumes full or close to full project deliveries, and that relies on actions other than those that cause reductions in water deliveries to comply with applicable laws. We believe the non-flow conservation measures assembled for the Bay Delta Conservation Plan is an example of actions that need to be considered for such an alternative.

Equities

FWA understands that as part of this DEIS process, Reclamation will be evaluating the potential for "sharing of water responsibilities in the delta." FWA welcomes any analysis and discussion over how to identify private diverters that are having an adverse effect on listed species yet are not providing any water to meet regulatory requirements. The NOI does not mention the ongoing process of the State Water Resources Control Board to identify any such diverters and develop standards that address environmental issues. FWA believes the DEIS process is an opportunity to work with the SWRCB to ensure that all who use water resources are also equally providing resources to meet environmental objectives.

Science

There continues to be much uncertainty, question, and controversy regarding the overall state of the science for the delta smelt, listed salmonids, and ecosystem of the Sacramento/San Joaquin River Delta. Yet surprisingly, the NOI fails to acknowledge any of this. It is our view that any analysis of potential alternatives for meeting ESA standards must be supported by the best available science. Despite record amounts of water allocated for regulatory purposes, the most recent surveys show a continuing downward trend for listed species in the delta. There should be no disagreement that our collective understanding of science for these species must be better and that while alternatives are being analyzed, so must the scientific process and understandings that surround these species.

Conclusion

Friant Division Contractors have enjoyed a long and productive relationship with Reclamation. It is FWA's desire to continue working collaboratively with Reclamation and the resource agencies to find common sense solutions to the very difficult and complex issues of water supply in the CVP and SWP. While we are encouraged by many statements in the NOI about maximizing water delivery and to review non-flow measures to address fishery needs, we are still concerned with ongoing actions that seem to call into question how Reclamation views Friant Division operations. We therefore reiterate our request to work with you and have productive engagement on these issues before any final decisions that impact the Friant Division are made.

Sincerely,

Jeffrey Payne, PE
Director of Water Policy

JP:tm

NDWA
NORTH DELTA WATER AGENCY

Chairman — Steve Mello
Vice-Chairman — Jack Kuechler
Secretary/Treasurer — Tom Hester
Director — Topper van Loben Sels
Director — Ryan Mahoney
Manager — Melinda Terry

February 1, 2018

Sent Via Email: KHarrison@usbr.gov

Katrina Harrison, Project Manager
Bureau of Reclamation, Bay-Delta Office
801 I Street, Suite 140
Sacramento, CA 95814

SUBJECT: North Delta Water Agency Scoping Comments on Notice of Intent to Prepare a Draft Environmental Impact Statement, Revisions to the Coordinated Long-Term Operation of the Central Valley Project and State Water Project, and Related Facilities (FR Doc. 2017-28215 filed 12-28-17) (hereinafter "Notice")

The North Delta Water Agency (NDWA/Agency) is pleased to submit these scoping comments in response to the above-referenced Notice, in which the Bureau of Reclamation states its intent to prepare a Draft Environmental Impact Statement (Draft EIS) pertaining to modifying the coordinated long-term operation of the Central Valley Project (CVP) and State Water Project (SWP) and related facilities to maximize CVP water deliveries.

Background of Agency and 1981 Contract

NDWA has a statutory mandate under California law to assure that the lands within the North Delta have a dependable supply of water of suitable quality sufficient to meet present and future beneficial uses.[1] In accordance with its statutory responsibilities, in 1981 the NDWA and the Department of Water Resources (DWR/Department) executed the *Contract for the Assurance of a Dependable Water Supply of Suitable Quality* (1981 Contract).

The crux of the 1981 Contract, which remains in full force and effect, is a guarantee by the State of California that, on an ongoing basis, DWR will ensure through the operation of the State Water Project that suitable water will be available to satisfy all agricultural and other reasonable and beneficial uses in all channels within NDWA's boundaries. The 1981 Contract contains specific minimum water quality criteria to be maintained year-round and obligates DWR to avoid or repair damages from hydrodynamic changes resulting from conveyance of SWP water. The 1981 Contract also provides that, if necessary, DWR will provide alternative water supplies of suitable quality and quantity or to limit the operations of the SWP pumps and reservoirs in order to maintain compliance with the minimum water quality criteria contained in the contract.

[1] North Delta Water Agency Act, Chapter 283, California Statutes of 1973.

Subsequently, during "Phase IV" of the water right hearings that led up to Water Right Decision No. 1641 revised, DWR acknowledged its responsibilities to NDWA by means of a Memorandum of Understanding dated May 26, 1998. Taken together, the 1981 Contract and the 1998 Memorandum of Understanding constitute a broad commitment by DWR to provide a water supply of suitable quality and quantity within the jurisdictional boundaries of NDWA.

DWR's compliance with the binding terms of the 1981 Contract is not discretionary. Moreover, the legal standards that govern DWR's discharge of its obligations under the 1981 Contract are quite different from those that govern DWR's compliance with NEPA, CEQA and other applicable law. For example, while CEQA requires DWR to implement feasible mitigation measures to reduce significant impacts of projects to less-than-significant levels, DWR may not, as a matter of contract law, choose not to comply with the specific requirements of the 1981 Contract based on a determination of infeasibility, or otherwise.

The CVP and SWP are operated in accordance with the Coordinated Operation Agreement between the federal government and the State of California.[2] As described in the subject Notice, Reclamation proposes to continue the operation of the CVP in a *"coordinated manner with the SWP"* in a manner that enables the Bureau and the California Department of Water Resources (DWR) to *"maximize water deliveries"* consistent with *"applicable laws, contractual obligations, and agreements."* (emphasis added). Reclamation must ensure that any revisions to the coordinated long-term operation of the CVP and SWP comply fully with the terms and conditions of the 1981 Contract.

The Notice states in relevant part: "Reclamation proposes to evaluate alternatives that maximize water deliveries and optimize marketable power generation consistent with applicable laws, *contractual obligations, and agreements*; and to augment operational flexibility by addressing the status of listed species." (82 Fed. Reg at 61789; emphasis added). The following scoping comments are intended to ensure continued compliance with the 1981 Contract and the requirements of the National Environmental Policy Act (NEPA).

Scoping Comments

1. The Draft EIS should include: A) a comprehensive description of the 1981 Contract; B) identify the 1981 Contract as a significant legal constraint on the coordinated operation of the CVP/SWP in order to maximize CVP water deliveries; and C) identify in the EIS how proposed long-term coordinated operations will assure water supply reliability, availability, and quality for all North Delta water users.

2. All hydrologic and hydraulic modeling undertaken as part of the preparation of the Draft EIS must assume, as the "baseline" condition, that the terms and conditions of the 1981 Contract, including but not limited to its water quality requirements, will remain in full force and effect.

3. The Draft EIS should analyze not only the potential impacts to water quality, water surface elevations, flows and flow direction, increased seepage and erosion resulting

[2] Authorized by Public Law 99-546.

from various alternatives, but also the mitigations associated with the repair, modification, or replacement of existing landowner diversion facilities and levees as required under Article 6 of the 1981 Contract due to the modification of coordinated operations of CVP with SWP.

4. The Draft EIS must consider a reasonable range of project alternatives in accordance with NEPA. Reclamation must ensure that all of the alternatives proposed in the Draft EIS will avoid undermining or interfering with DWR's ability to comply with its obligations under the 1981 Contract. In other words, the discussion of alternatives in the Draft EIS should focus on alternatives that are feasible in light of the requirements of the 1981 Contract.

5. NEPA imposes an obligation to analyze and mitigate the significant effects (direct and indirect) associated with "human environment" (42 U.S.C. § 4332) and "economic, social or health" effects (40 C.F.R. § 1508.8). The Draft EIS must analyze the extent that any of the project alternatives cause agricultural land within NDWA to be taken out of agricultural production.

6. Any project-related significant adverse impacts within the jurisdictional boundaries of NDWA must be properly described, analyzed, and mitigated in accordance with NEPA and other applicable law. In particular, NDWA is concerned that modifying CVP/SWP Coordinated Operations in order to maximize CVP water deliveries will alter water quality, water surface elevations, and velocities in the North Delta. Such impacts must be fully analyzed and mitigated in the Draft EIS.

Thank you for considering NDWA's scoping comments.

Sincerely,

Melinda Terry,
Manager

O'Laughlin & Paris LLP Attorneys at Law

February 1, 2018

Via Email Only

Katrina Harrison, Project Manager,
Bureau of Reclamation, Bay-Delta Office
801 I Street, Suite 140
Sacramento, CA 95814–2536
Email: kharrison@usbr.gov

Re: Comment Letter - Environmental Impact Statement (EIS)

Dear Ms. Harrison:

These comments to the DOI-NOI (Notice of Intent to Prepare a Draft Environmental Impact Statement, Revisions to the Coordinated Long-Term Operation of the Central Valley Project and State Water Project, and Related Facilities), published in the 82 F.R. 61789 are made by Oakdale Irrigation District, South San Joaquin Irrigation District and Stockton East Water District.

Very truly yours,

Tim O'Laughlin

Attachments

cc: Peter Rietkerk
Steve Knell
Scot Moody
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Kenneth Robbins

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Executive Summary

DOI-NOI

Maximize Water Supply Delivery

- Change index for New Melones. This can be done immediately. It costs no money. It is entirely within the discretion of Reclamation. ("maximize water supply delivery"). **(Attachment A)**
- The release/transfer of 25-100,000 acre-feet per year for the next ten years. Releases would be made available March-May. Fully exportable. Any water not released would be stored by Reclamation, pursuant to a Warren Act Contract. ("modified storage and export" and "maximize water supply delivery"). **(Attachment B)**
- Rescheduling guidelines for SEWD/CSJWCD. Costs no money. Is entirely within the discretion of Reclamation. ("maximize water supply delivery"). **(Attachment C)**

Modifications to Regulatory Actions, including RPA's **(Attachment D)**

- Petition State Water Board to modify Dissolved Oxygen objective.
- Eliminate Appendix 2e flows and revert back to California Department of Fish and Wildlife '88 Agreement flows that are a condition of the New Melones Project Permits.
  - Eliminate Appendix 2e flows because:
    - *O. mykiss* are the endangered species, not Fall Run Chinook Salmon.
    - *O. mykiss* do not use Floodplain Habitat.
    - No increase in habitat from Appendix 2e flows (no spawning, incubation or rearing).
    - Resident Rainbow Trout decimated, due to New Melones Storage depletion.
    - Channel incision has not, will not and cannot change, due to flow changes at New Melones.
    - Flow has been available for variation and NMFS has not varied flow in nine years.
- Eliminate RPA water temperature objectives. They either are met (not due to Appendix 2e flows) or they cannot be met.

Stressors

- Support Native Fish Recovery Plan.
- Support transfer/release for Spring migration and cold-water pool.
- Gravel Augmentation (Reclamation).
- In-channel restoration (Honolulu Bar).
- Habitat complexity.

Alternatives to Be Considered

New Facilities

- A conveyance facility to move excess (water in excess of TID, MID, CCSF, required FERC flows and Delta in excess) Tuolumne River water to OID. Back OID deliveries up into New Melones. This will require storage. **(Attachment E)**

Actions to Generate Additional Water

- OID and SSJID "conserved water" to be stored in New Melones and accessible to the Districts.
- SEWD/CSJWCD "unused allocation" to be stored in New Melones for use in subsequent years.

Habitat Restoration

- A portion of the revenue from release/transfer to be used for habitat improvement, Native Fish Plan, gravel augmentation, habitat complexity.

ATTACHMENT A

DOI – NOI

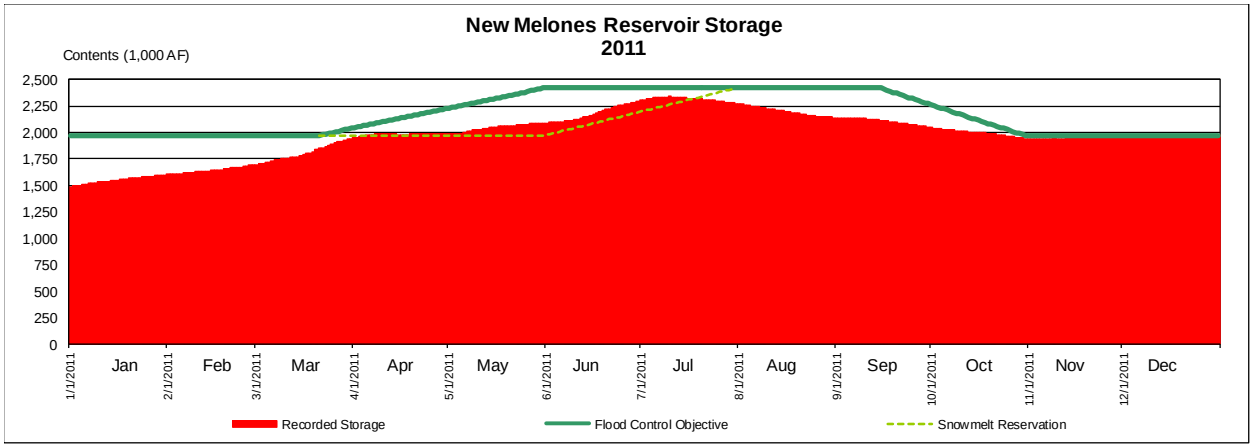
Change the index at New Melones

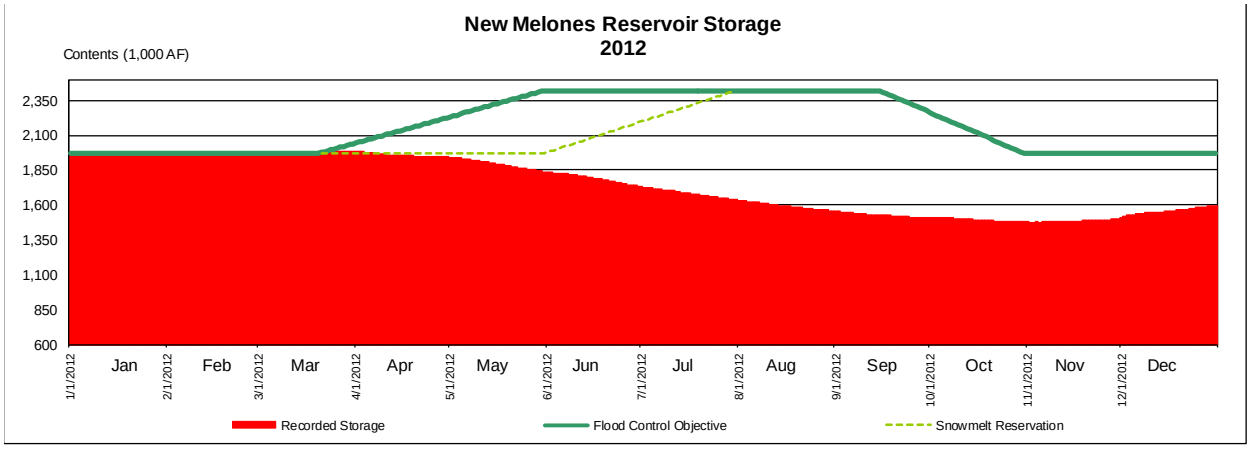
The current index at New Melones is called, originally, the New Melones Index (NMI). The index is storage in the Reservoir on the last day of February plus the forecasted inflow to New Melones Reservoir for the remainder of the water year, e.g., March through September. The combined numbers are the index. The NMI is established during March upon the availability of the DWR runoff forecast in early March, and is updated as soon as revised forecasts and actual inflow data becomes available.

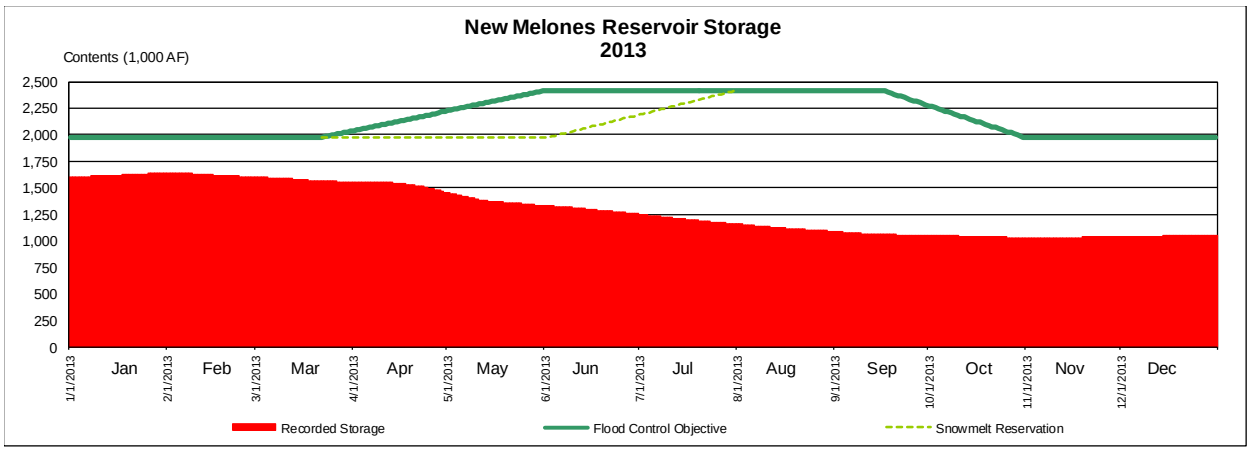
The current index, based on last year's hydrology, is approximately 3,314 and will remain classified as "Wet" until redetermination during March of this year, regardless of the hydrology that may ensue between now and then.

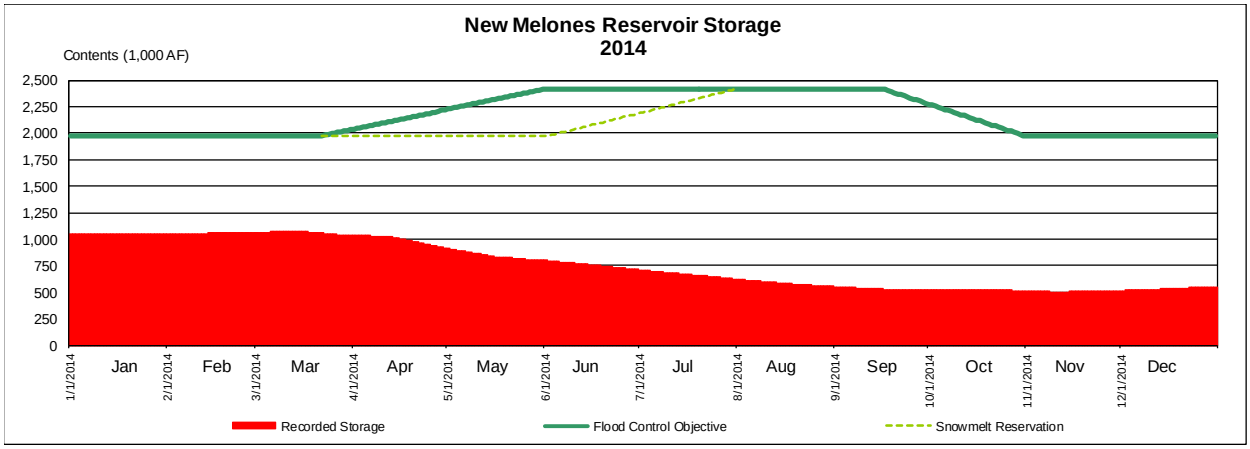
The purpose of the index when it was formulated in 1998 was to recognize the unique circumstance of storage at New Melones Reservoir within the context of basin runoff and demands, and protect its availability for dry conditions.

The current NMI and operation when combined with NMFS RPA Appendix 2e flows does just the opposite, it decimates storage. This can be seen during the recent drought.






New Melones Reservoir Storage
2013
Contents (1,000 AF)
2,500
2,250
2,000
1,750
1,500
1,250
1,000
750
500
250
0
1/1/2013
Jan
2/1/2013
Feb
3/1/2013
Mar
4/1/2013
Apr
5/1/2013
May
6/1/2013
Jun
7/1/2013
Jul
8/1/2013
Aug
9/1/2013
Sep
10/1/2013
Oct
11/1/2013
Nov
12/1/2013
Dec
Recorded Storage
Flood Control Objective
Snowmelt Reservation


New Melones Reservoir Storage
2014
Contents (1,000 AF)
2,500
2,250
2,000
1,750
1,500
1,250
1,000
750
500
250
0
1/1/2014
Jan
2/1/2014
Feb
3/1/2014
Mar
4/1/2014
Apr
5/1/2014
May
6/1/2014
Jun
7/1/2014
Jul
8/1/2014
Aug
9/1/2014
Sep
10/1/2014
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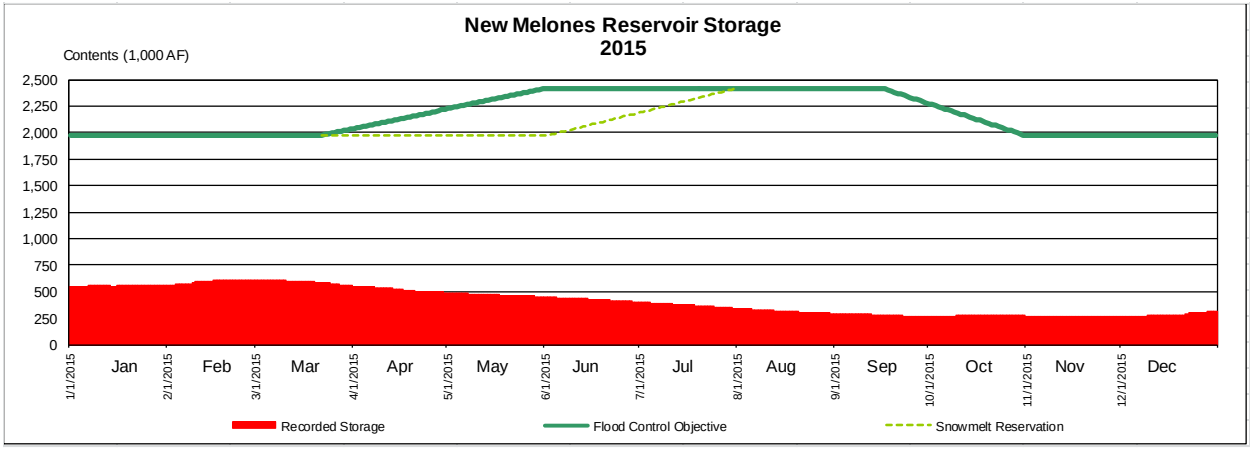
11/1/2014
Nov
12/1/2014
Dec
Recorded Storage
Flood Control Objective
Snowmelt Reservation


New Melones Reservoir Storage
2015
Contents (1,000 AF)
2,500
2,250
2,000
1,750
1,500
1,250
1,000
750
500
250
0
1/1/2015
Jan
2/1/2015
Feb
3/1/2015
Mar
4/1/2015
Apr
5/1/2015
May
6/1/2015
Jun
7/1/2015
Jul
8/1/2015
Aug
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Dec
Recorded Storage
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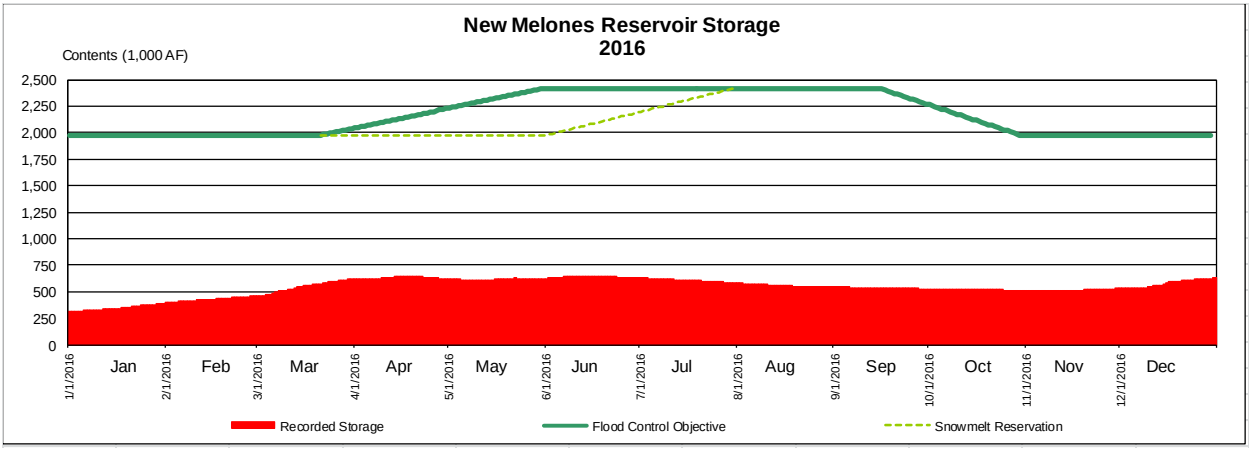
Snowmelt Reservation



The current index in combination with the associated Appendix 2e requirements devastates storage. In several years as much water, if not more than flows into New Melones reservoir is released in a year under Appendix 2e, passing inflow to the river leaving very little of the basin's runoff for diversion. Only during fortuitous years does inflow exceed river requirements allowing water to be stored and later used for diversions.

Year	Inflow	River Releases
2011	2,093	863
2012	607	577
2013	559	431
2014	344	349
2015	333	198
2016	962	326

Units: 1,000 Acre-feet

The continued use of the NMI in combination with Appendix 2e will continue to mismanage in the basin for both diversions and river releases. This problem will become exacerbated with the SWB adoption of the Phase I WQCP.

The Phase I WQCP will require 40% UIF from February 1, 2018 – June 30, 2018 to be bypassed from New Melones. This pending regulatory action will reduce the opportunity to store water, and in combination with Appendix 2e requirements will exacerbate diminishment of storage.

We recommend the use of a hydrologic index for river releases that is more reactive to current hydrologic conditions of year. An example of such an index is the SWRCB "60-20-20" index that is used for the San Joaquin River Basin. Additionally, the carryover effect of using the previous year's index (based on hydrology of the previous water year, ending September) should be scrutinized for applicability during the ensuing fall and winter. We recommend that some form of adaptive flow schedule be applied that is reactive to "current conditions".

The Reasoning for Appendix 2e

Judge Wanger's opinion in the OCAP-BO cases succinctly states the case for Appendix 2e flows.

NMFS explains:

The proposed operation of the East Side Division **modifies the hydrograph from the unimpaired flow pattern with which CV steelhead evolved**. Such modifications may affect survival and critical habitat for CV steelhead in the following ways:

- **Peak flood flows are dampened**, reducing floodplain inundation and impairing rearing ability;
- **Flow variability is muted**, eliminating migratory cures that prompt migration and anadromy;
- **Flow variability is muted**, causing channel incision, reducing available rearing habitat, simplifying channel complexity and **allowing land use encroachment into riverside habitats**; and
- **Channel forming flows are reduced or eliminated**, resulting in fossilization of gravel bars and degradation or spawning habitat.

(NMFS AR at 00106381; 2009 BO, p. 301.) NMFS further explains that operations affect CV steelhead because:

- Operational releases control extent of cool water habitat available below Goodwin Dam.
- Operational release levels control the quantity and functionality of instream habitat for spawning, egg incubation, juvenile rearing and smoltification.
- Operational release are typically **lower than unimpaired flows**, requiring smolting juveniles to expend more energy to outmigrate and lower stream velocities increase to exposure of juveniles and smolts to predation.

The basis for NMFS' statement of effects is true in average to wet conditions. When OID-SSJID cannot divert the entire flow to storage and/or directly divert, then New Melones can store water. This is, I guess, a discretionary act. If these are NMFS' concerns, then it seems that a hydrograph based on current-based runoff makes more sense. Then, the effect is in the given year. The RPA can address a given year, but it should not be allowed to draw water from storage, three years later in a drought, when New Melones Reservoir has zero impact on these "effects of concerns."

We reviewed the OCAP-BO pleadings in preparation for drafting this section. In our pleading we continuously stated:

> *"The second RPA dealing with flow from New Melones requires Reclamation to release water pursuant to an established year-round minimum flow schedule, dependent on hydrologic year type."*

While this is a correct statement, it conveys the wrong message. "Hydrologic year type" on the Stanislaus River is based on NMI and depending on the year, a huge component of the NMI, stored water that has nothing to do with reducing the natural flow. If you asked most laypeople, judges too, what a year type is, they would say, "wet, normal, dry." In their heads, it would be based entirely on rainfall/snow that year; not previous run-off to storage.

The effects of the New Melones project are in the year in which the operation occurs, not later.

ATTACHMENT B

Release/Transfer

The Districts have in the past, transferred and released water for CVP Contractors. From 1996 to 2006, the Districts transferred up to 30,000 af per year to SEWD, a CVP Contractor. The Districts are currently working with SEWD to make water available in years when the CVP does not have sufficient water available to meet SEWD's surface water demand. In addition, discussions have begun with CSJWCD to firm up its dry year supply of water, so surface water supplies become more reliable.

The Districts, since 2014 have been making water available to Reclamation at Goodwin Dam to assist Reclamation in meeting the April-May flow objectives pursuant to D-1641. This water has been paid for by DWR and SLDMWA. The water made available to Reclamation at Goodwin Dam that is in excess of Appendix 2e flows has been exported by the CVP/SWP at Bank & Jones.

These releases/transfer may require storage in New Melones Reservoir. Reclamation should explore the following alternatives for storage in New Melones Reservoir: Warren Act Contracts, change in '88 Agreement Conservation Account.

ATTACHMENT C

Rescheduling Guidelines

Since 2010 SEWD has requested Reclamation develop rescheduling guidelines for New Melones Reservoir, which Reclamation has not done. All other CVP contractors are allowed to reschedule water as a matter of routine, and SEWD was allowed to reschedule water in New Melones in 1995. Using remaining "unused" allocation will have no effect on future allocations or carry-over, as it was already allocated and expected to be used in any given water year.

We have included both draft Legislation and proposed Rescheduling Guidelines for the East Side Division of the Central Valley Project.

SECTION 1. RESCHEDULING (CARRYOVER) GUIDELINES.

(a) In General. Not later than 45 days after the date of the enactment of this Act, the Secretary of Interior shall develop and implement Rescheduling (Carryover) Guidelines applicable to the Central Valley Project (CVP) Eastside Division Project Facilities.

(b) Terms and Conditions. The terms and conditions of the Rescheduling (Carryover) Guidelines shall

(1) Allow Eastside Division CVP Contractors (hereinafter referred to as "Contractor") to store Project Water allocated to Contractor, but unused in that water year, for future use (Rescheduled Project Water); and

(2) Require Contractor to provide the Bureau of Reclamation with an estimate of the amount Rescheduled Project Water that it intends to store by the end of each calendar year; and

(3) Rescheduled Project Water shall not interfere with Project operations and water deliveries. Rescheduled Project Water must be the first Project Water scheduled and used by the Contractor in the following year. If there is insufficient storage space in New Melones Reservoir to store the Rescheduled Project Water, such water must be evacuated as soon as possible; and

(4) All Rescheduled Project Water shall be subject to the payment of a reasonable rescheduling fee as established by the Bureau of Reclamation.

RESCHEDULING (CARRYOVER) GUIDELINES
EAST SIDE DIVISION
CENTRAL VALLEY PROJECT
CENTRAL CALIFORNIA AREA OFFICE
(For Water Rescheduled from 20__ to 20__)

GENERAL:

The following Guidelines will apply to the rescheduling of Central Valley Project (Project) Water in the East Side Division Project Facilities from the 20__ contract Year into the 20__ contract Year. These Guidelines are intended to continue in effect throughout the 20__ contract Year. Reclamation reserves the right to terminate, rescind, or amend these Guidelines if necessary. It is the intent of Reclamation that these Guidelines will remain substantially the same from year to year: however, dates, water rates, and other policy considerations will be addressed as necessary.

Rescheduled Project Water must be the first Project Water scheduled and used by the applicable Contractors, which includes delivering Rescheduled Project Water that is being transferred in the 20__ contract Year.

A. STORAGE PRIORITY IN EAST SIDE DIVISION PROJECT FACILITIES:

1. For purposes of these Guidelines, the 20__ East Side Division Project Water allocation supply shall have priority for storage in New Melones Reservoir over Rescheduled Project Water as determined by Reclamation.

B. APPROVAL AND SCHEDULING

1. **Request.** On or about October 21, 20__, the Contractor will be required to provide to Reclamation a preliminary estimate of the quantities of Rescheduled Project Water requested to be accommodated as of December 31, 20__. No – this is the day that they will actually begin storing it for us. The Contractor must submit a written request to the CCAO identifying the estimated total quantity of undelivered 20__ Project Water the Contractor desires to have rescheduled (by month), and containing an acknowledgement that the Contractor agrees to abide by these Guidelines for rescheduling. On the basis of the then current hydrologic conditions, Project operations, and rescheduling[1] requests received. Reclamation may request revised schedules from the Contractors.

   Reclamation reserves the right to reject any request for rescheduling due to factors beyond Reclamation's control, or due to circumstances not contemplated or foreseen when these Guidelines were prepared.

2. **Limitations on Rescheduled Project Water**. Prior to December 1, 20__, Reclamation shall inform the East Side Division Contractors of any preliminary limits they have

[1] Water delivery schedules submitted pursuant to a water service contract showing rescheduled amounts is acceptable.

placed on Rescheduled 20__ Project Water. Currently, Reclamation does not anticipate a need to limit the overall volume of Rescheduled Project Water. However, the total volume of Project Water available to be rescheduled into 20__ may not exceed the actual quantity of Project Water declared and remaining unused by the Contractor at the end of the contract Year.

Reclamation may also limit the delivery timing of Rescheduled Project Water, including Transfers, during a portion of the 20__ contract Year. This limitation will be based on the amount of water needed to satisfy 20__ Project operational requirements, contractual obligations, and schedules.

3. **Schedule.** The CCAO will review and provide to the Contractor written approval or denial of any water delivery schedule the Rescheduled Project Water. Any revisions to an approved schedule must be submitted no later than 24 hours prior to the proposed changes. The CCAO shall provide pertinent information to Ratesetting Services (MP-3400) and the Water Contracts, Transfers, and Banking Branch (MP-440). CCAO will provide consultation on rescheduling questions and problems. Submittal of schedules and notification of approval or denial may occur by electronic means to expedite communication.

4. **First Water Evacuated.** All Rescheduled Project Water is subject to available conveyance and storage capacity. Rescheduled 20__ Project Water will not be allowed to interfere with 20__ contract Year Project operations and water deliveries. Rescheduled Project Water must be the first Project Water scheduled and used by the applicable Contractors, which includes delivering Rescheduled Project Water that is being transferred in the 20__ contract Year. If there is insufficient storage space in New Melones Reservoir to store the Rescheduled Project Water, such water must be evacuated as soon as possible upon notice from Reclamation.

5. **Transfer of Rescheduled Water.** Rescheduled Project Water will not be eligible for transfer, other than for transfers between CVP contractors during the 20__ contract Year providing such transfer has no adverse impact to Project operations. Rescheduled Project Water will not be eligible for banking outside contractor's service area during the 20__ contract Year, without further approval by the Contracting Officer in consultation with the CCAO.

6. **Loss Criteria.** As stated above, Rescheduled Project Water shall not interfere with 20__ contract Year Project Water deliveries. Reclamation has discretion to limit, evacuate, or re-designate as 20__ supplies, the Rescheduled Project Water in New Melones if it appears that it may impact the 20__ Project operations. The loss of Rescheduled Project Water as New Melones fills will be in accordance with the following conditions to avoid impacts to 20__ allocated Project Water deliveries:

   (1) The Rescheduled Project Water will be considered to "float" on top of the 20__ Project Water storage and will be deemed as having no impact on 20__ Project supplies.

(2) If there is insufficient storage space in New Melones Reservoir to store Rescheduled Project Water and the 20__ Project Water supplies, the Rescheduled Project Water shall be evacuated first. Reclamation will attempt to provide a 3-day written notice of the necessity for evacuation of Rescheduled Project Water. If more than one Project Contractor has Rescheduled Project Water in storage, the Rescheduled Project Water lost due to spill conditions will be prorated on a daily basis, by Reclamation on a per Contractor basis and depending upon the amount of Rescheduled Project Water in storage at the time of spill.

(3) If Reclamation declares water available in order to avoid a spill. Rescheduled Project Water in New Melones shall he reduced by the amount of water delivered pursuant to the temporary water service contracts, and the total amount of Rescheduled Project Water lost due to spill conditions will be prorated on a daily basis, by Reclamation on a per Contractor basis and depending upon the amount of Rescheduled Project Water in storage at the time of spill.

7. **Section 215 Water,** Contractors who have Rescheduled 20__ Project Water and have not taken delivery of such water will be allowed to enter into temporary contracts with the United States for non-storable or unmanageable flood flows of short duration pursuant to Section 215 of the Reclamation Reform Act (215 water). Delivery of 2l5 water however, will not be allowed until all the Contractor's Rescheduled Project Water has been delivered or deemed spilled.

C. PAYMENT:

1. **Water Rate for Rescheduled Project Water.** For 20__ Project Water rescheduled into the 20__ contract Year, the Contractor must pay the appropriate 20__ Project Water rate when the Contractor schedules delivery of Rescheduled Project Water in 20__. Payment of the appropriate 20__ Project Water rate must be made in advance of water delivery, in the event that Rescheduled Project Water in storage in New Melones Reservoir is lost due to a necessary evacuation or other cause, the amounts advanced by a Contractor with a renewed long - term water service contract will not be refunded, but will be applied to the individual Contractor's other water service obligations, exclusive of the Rescheduling Fee described in the following paragraph. Reclamation will develop and provide a Standard Operating Procedure (SOP) for application of revenues for unused water by September 1, 20__, and this SOP will quantify the rescheduling fee for 20__ supplies, and provide specific application and implementation of Accounting and Ratesetting Procedures.

2. **Rescheduling Fee.** For 20__ Project Water rescheduled into the 20__ contract Year, the Contractor must pay a rescheduling fee at the time the Contractor submits its final request for the quantity of water to be rescheduled (prior to December 31, 20__). If Rescheduled Project Water is approved in New Melones Reservoir on behalf of a Contractor, but lost due to a necessary evacuation or other cause, these fees will not be refunded, and will not be applied to the Contractor's other water service obligations. Please see the SOP

referenced in Section C.l (above) for application of rescheduled water fees. The requirement for payment of the rescheduling fee is applicable to all participating Contractors regardless of the provision of only paying for actual water delivered.

3. **Restoration Fund Charge.** For 20__ Project Water rescheduled into the 20__ contract Year, the Contractor must pay the Fiscal Year 20__ Restoration Fund (if applicable) charge by the end of the month following the month in which the Rescheduled Project Water was delivered. The Restoration Fund charges will not be incurred unless the Rescheduled Project Water is delivered to, or on behalf, of the Contractor.

4. **Contractor Payments for Rescheduling Project Water.** Project Contractors will remit the appropriate amounts listed in section C above and reiterated here: Rescheduling Fees specified in C.2; Restoration Fund Charges specified in C.3; to Reclamation in the same manner as the Project Contractor submits its water rate payments to Reclamation under its Project Water Service contract.

ATTACHMENT D

Comments on the Notice of Intent to Prepare a Draft Environmental Impact Statement on Revisions to Long-term Operation of the CVP/SWP

February 2018

Background and Purpose

The U.S. Department of Interior published a Notice of Intent to Prepare a Draft Environmental Impact Statement, Revisions to the Coordinated Long-Term Operation of the Central Valley Project and State Water Project, and Related Facilities (Federal Register 82, No. 249, December 29, 2017). Therein, the Bureau of Reclamation (BOR) proposes to "review and consider modification to regulatory requirements, including the existing Reasonable and Prudent Alternative (RPA) actions identified in the Biological Opinions […]" and to "evaluate stressors on fish other than CVP and SWP operations, beneficial non-flow measures to decrease stressors […] and other beneficial measures for improving targeted fish populations."

When the Biological Opinion (BiOp) for Central Valley Steelhead was written in 2009, very little data was available pertaining to the abundance, distribution and life-history characteristics of *Oncorhynchus mykiss* in the Stanislaus River. With a poor understanding of how this population responds to New Melones Reservoir operations as part of the CVP, the National Marine Fisheries Service (NMFS) used fall-run Chinook salmon (FRCS) in the San Joaquin River basin as a surrogate species in developing RPA actions. It was assumed that conditions that improve the abundance of FRCS should simultaneously improve the abundance of steelhead. Despite some overlap in habitat requirements between these species, their life histories differ, casting doubt on the validity of these assumptions.

Since 2009, a substantial body of new and pertinent information has been accumulated through intensive life-cycle monitoring and various scientific studies designed to address ambiguity associated with our understanding of *O. mykiss* in the Stanislaus River and the effect of various management actions on the population. In this memorandum, we present scientific evidence and data from long-term monitoring operations for consideration by the BOR in the preparation of an Environmental Impact Statement. In particular, the following topics are discussed in detail:

- An overview of scientific data pertinent to *O. mykiss* in the Stanislaus River collected in the past 10 years, including oversummering population size, factors associated with distribution and densities of *O. mykiss*, and juvenile and adult migration characteristics

- An evaluation of the existing Regulatory Actions, including Reasonable and Prudent Alternative actions (RPAs) in consideration of relevant data that has become available since the RPA actions were defined

- A discussion of stressors on native fish populations other than CVP and SWP operation and suggested beneficial measures to alleviate these stressors.

1. New Scientific Data Collected Since 2009

1.1. Abundance of Oversummering O. mykiss

Unlike FRCS, anadromous *O. mykiss* (steelhead) remain in freshwater for at least one, but usually two summers before migrating to the marine environment. Also unlike FRCS, some *O. mykiss* do not migrate, but remain in the river as residents. As a consequence, surveys during the summer months can provide population estimates that are inclusive of all size/age classes and life history variants: juveniles that may migrate to sea, and adults that have adopted the resident life history. FISHBIO has conducted annual snorkel surveys in the Stanislaus River since 2009 to estimate the abundance and distribution of oversummering *O. mykiss,* and to document population responses to flow, water temperature, and habitat (FISHBIO 2015).

The population of *O. mykiss* in the Stanislaus River is composed almost entirely of resident fish, with few migrating individuals (described in more detail in sections 1.3 and 1.4), and until recently, the population was fairly large and stable. The majority of *O. mykiss* are found upstream of Orange Blossom Bridge with the highest densities found between Goodwin Dam and Knights Ferry (Figure 1). Elevated water temperatures (above the typical summer temperature of approximately 55°F; monthly mean temperature at Goodwin), beginning in 2014, coincide with the decline in *O. mykiss* densities across all reaches. The warmest water temperatures of approximately 67°F were recorded during the summer of 2015.

From 2009 until 2014, overall abundance averaged about 20,000 individuals, peaking in 2012 due to a large number of young/small fish. Following this peak, overall abundance of *O. mykiss* sharply declined during drought, falling to a low of approximately 5,000 in 2015 and 2016. The population began to recover in 2017 (Figure 2).

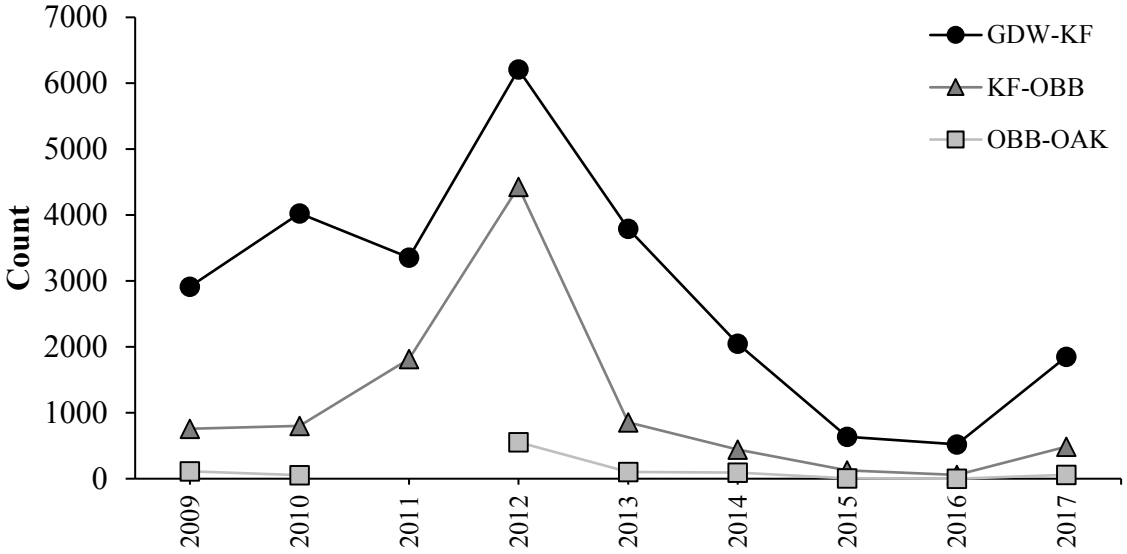


Figure 1. Fish per river mile (density) estimates made during fall snorkel surveys, 2009-2017 in the Stanislaus River. All reaches were sampled all years except for OBB to OAK in 2011. Reach names are Goodwin Dam to Knight's Ferry (GDW-KF), Knight's Ferry to Orange Blossom Bridge (KF-OBB), and Orange Blossom Bridge to Oakdale (OBB-OAK).

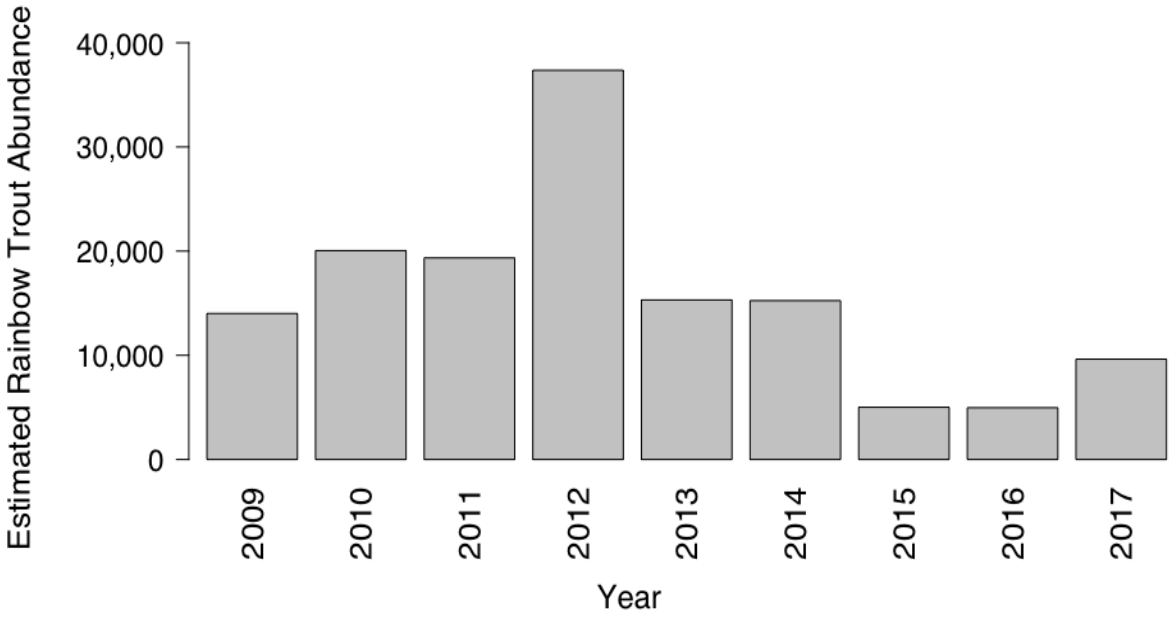


Figure 2. Annual *O. mykiss* abundance in the Stanislaus River during 2009-2017.

Estimated *O. mykiss* abundance during 2009-2017 tracks very closely with water temperatures, and lower *O. mykiss* abundance was observed in years following warmer summer temperatures (Figure 3). Carry-over storage and maintenance of an adequate cold-water pool to provide summertime releases of sufficiently cool water are integral to maintaining suitable habitat for *O. mykiss* in the Stanislaus River.

A visual depiction of *O. mykiss* abundance in relation to flow (at Ripon; Figure 4) may be misleading at first glance: the apparent trend depicted in the graph below was entirely driven by the flood control release of approximately 700 TAF in 2011 (corresponding to the 2012 abundance estimate), which is well outside the range of managed flows as specified in Table 2-E of the BiOp. With the exception of peak *O. mykiss* abundance occurring in 2012, abundance estimates have not tracked well with the volume of flow released during January–August of the year prior. For instance, flows at Ripon in 2012 and 2013 were approximately 375 TAF and were higher than the flows of approximately 250 TAF to 275 TAF in 2009–2010. However, despite the higher flows in 2012 and 2013, *O. mykiss* abundance was in 2013/2014 and lower in 2013 than in 2010/2011.

Trends in densities and abundance clearly indicates that these population indices of *O. mykiss* can be adversely impacted by elevated stream temperatures which, in turn, are a consequence of depleted storage in New Melones Reservoir during the recent drought (Figure 5). Under the current operational requirements and constraints, the cold-water pool in New Melones Reservoir was depleted during the recent drought, resulting in a drastic decline in abundance of *O. mykiss*. Depleted storage in the years 2014 – 2016 inhibited the operator's ability to provide cold-water releases during the summer months of these years. The effects of storage conditions on the temperature of discharged water is discussed further in Section 2.3.

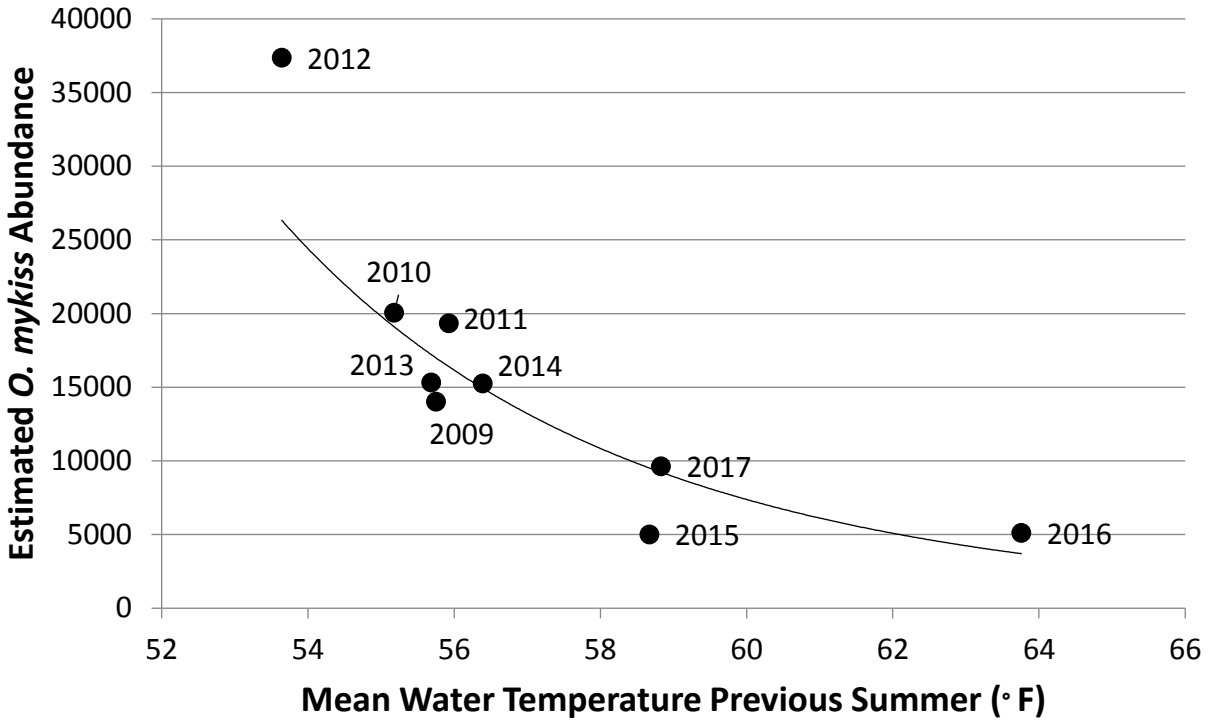


Figure 3. Abundance of *O. mykiss* in the Stanislaus River relative to the mean summer water temperature the previous year (June – August at Goodwin Dam).

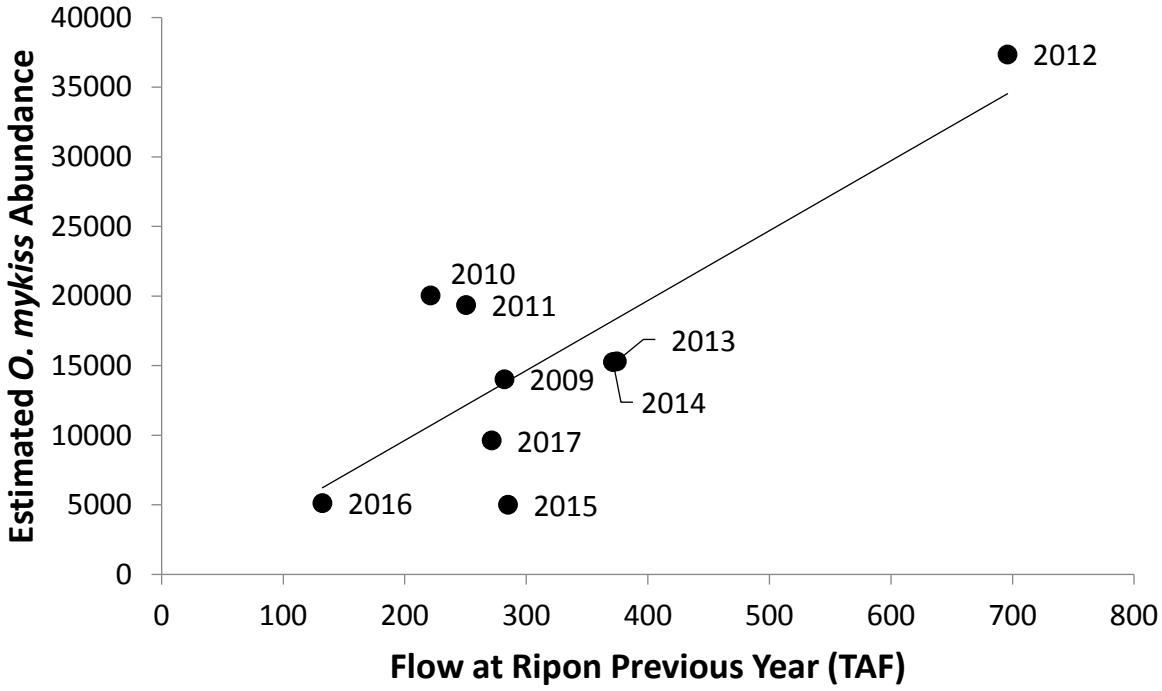


Figure 4. Abundance of *O. mykiss* in the Stanislaus River relative to the cumulative discharge (January – August at Ripon, in TAF) the prior year.

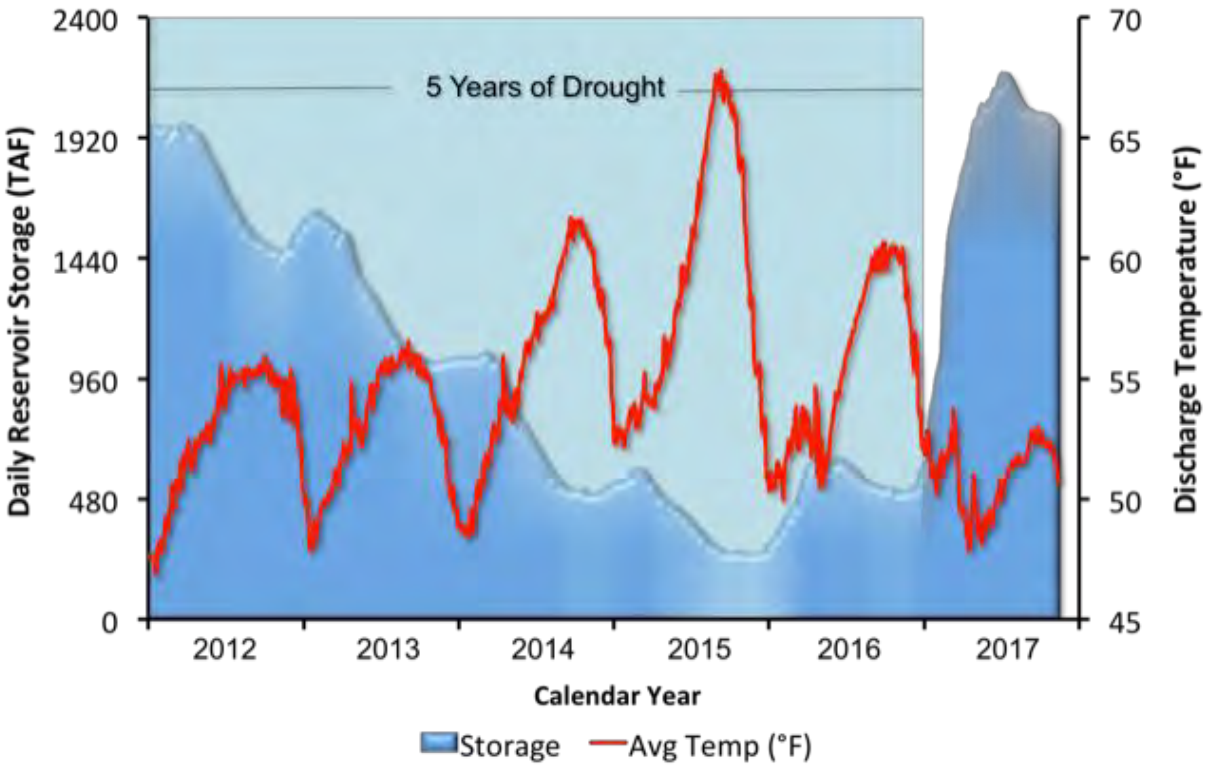


Figure 5. Relationship between average daily storage at New Melones Reservoir and mean daily water temperature below Goodwin Dam.

1.2. Juvenile Outmigration Characteristics

Juvenile outmigration monitoring has been conducted annually in the Stanislaus River since 1996 using rotary screw traps (RSTs) at an upper site near Oakdale (RM 40.1) and a lower site at Caswell State Park (RM 8.6). In general, abundance of downstream migrating *O. mykiss* is very low. Fewer than 500 individuals potentially beginning migration to sea (age 1+ or older; FL > 100 mm) have been captured at Oakdale in 22 years of monitoring, with a mean annual catch of approximately 21 individuals per year (Figure 6). Comparing captures at the two RST monitoring locations on the Stanislaus River, the upper RST at Oakdale captures more *O. mykiss* than the lower RST at Caswell (Figure 6).

Juvenile outmigration monitoring is also conducted in the San Joaquin River by operating a trawl near Mossdale. Catches at Mossdale do not closely mirror annual catches in the Stanislaus River, but are similarly low (Figure 6). The disparity between catches in the RSTs and at Mossdale is likely due to differences in sampling effort. While the RSTs generally operate daily from January through June, the trawl is not operated on a consistent number of days per month throughout each outmigration season, and the number of tows conducted on a given day is variable. Very little sampling occurs at Mossdale prior to late March. While downstream movement of potentially outmigrating fish (age 1+ or older; FL > 100 mm) is highest from January through March (Figure 7) at the Oakdale RST, almost none have been captured at Mossdale during this period. Catches at Mossdale are greatest during April and May (Figure 7).

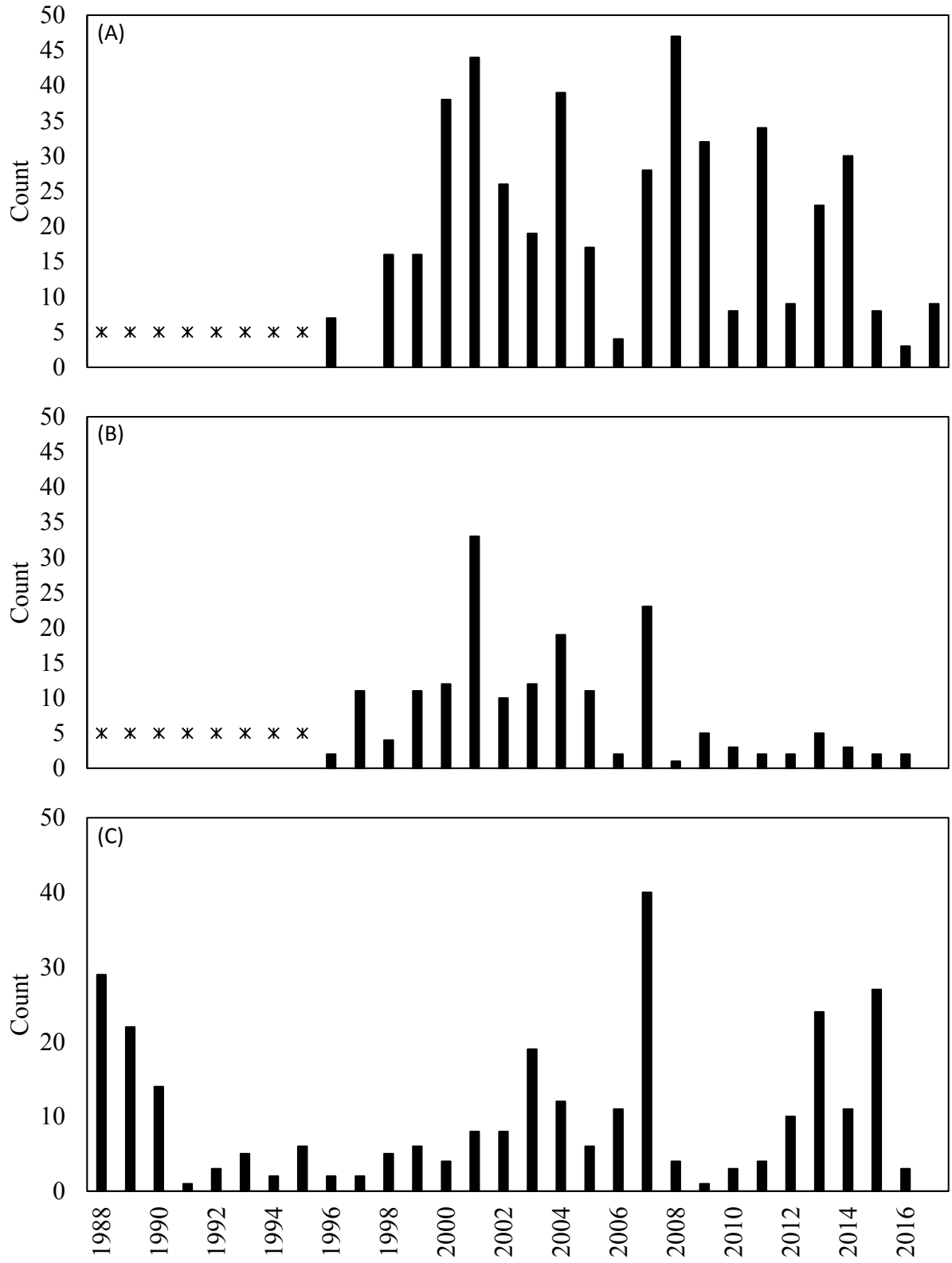


Figure 6. Annual *O. mykiss* catch in the Stanislaus River at the Oakdale (A) and Caswell (B) RSTs and in the San Joaquin River at the Mossdale trawl (C). Star symbols indicate no available data for a particular year.

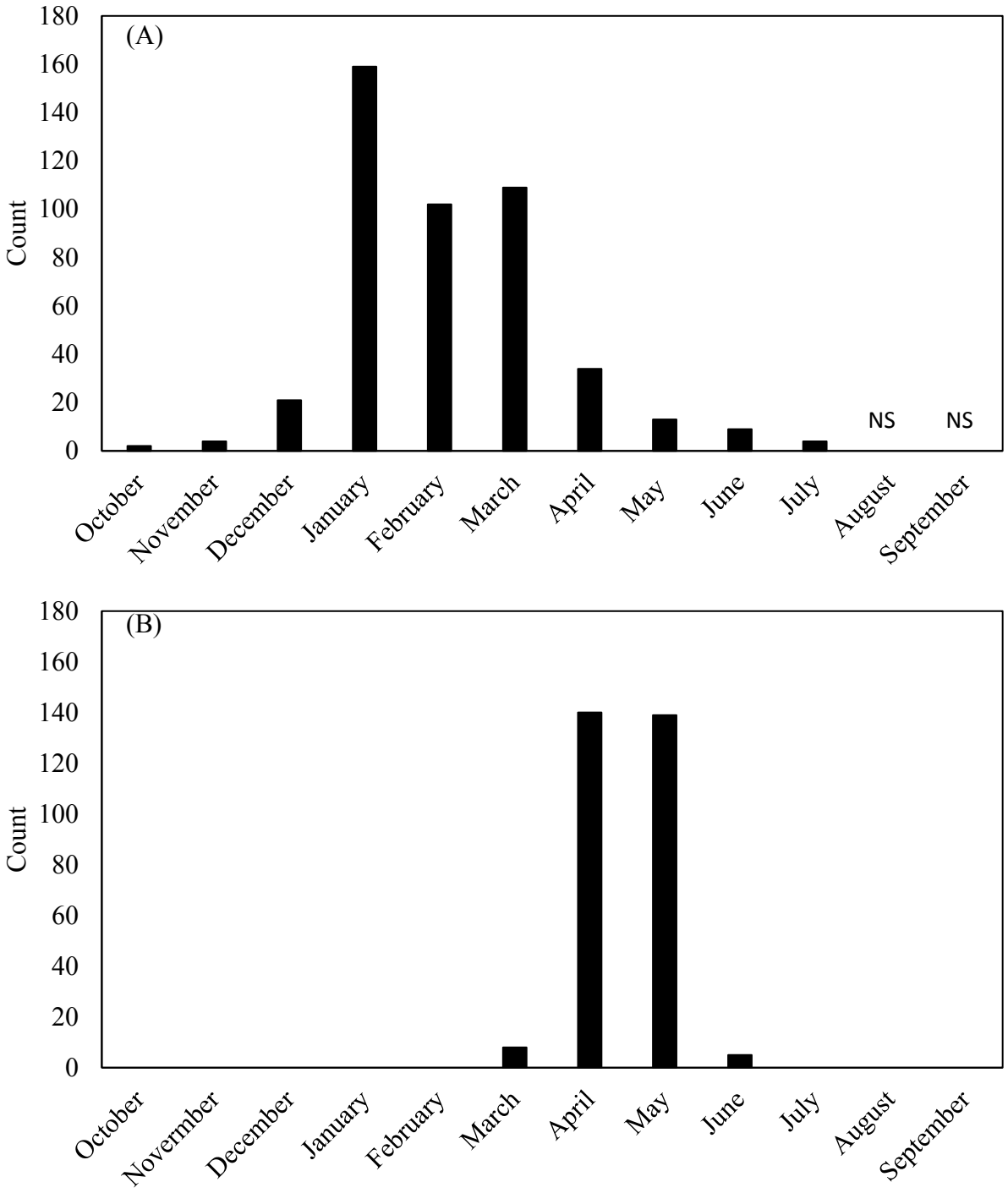


Figure 7. Timing of catches of *O. mykiss* in the Stanislaus River at Oakdale during 1996-2017 (A) and in the San Joaquin River at Mossdale during 1988-2016 (B). NS indicates months in which sampling has never occurred at the site.

1.3. Adult Upstream Migration Characteristics

A weir has been operated on the Stanislaus River annually since 2003 to document upstream migration of FRCS and *O. mykiss*. Not all *O. mykiss* counted at the weir are adults and not all are anadromous. As the monitoring is passive, samples are not collected to determine the life history of individuals. Instead, individuals >16 inches TL are considered potential steelhead. On average, about 8 potential steelhead (*O. mykiss* > 16 inches TL) are documented entering the Stanislaus River annually, though escapement fluctuates greatly (Figure 8). Notably, of the 116 upstream migrating steelhead, 43 were identified to be of hatchery-origin by a clipped adipose fin (all steelhead released from hatcheries in the Central Valley are marked in this fashion), another 14 individuals could not be clearly distinguished as hatchery- or natural-origin. Upstream migration of potential steelhead in the Stanislaus River occurs predominantly from October through February, albeit at very low levels.

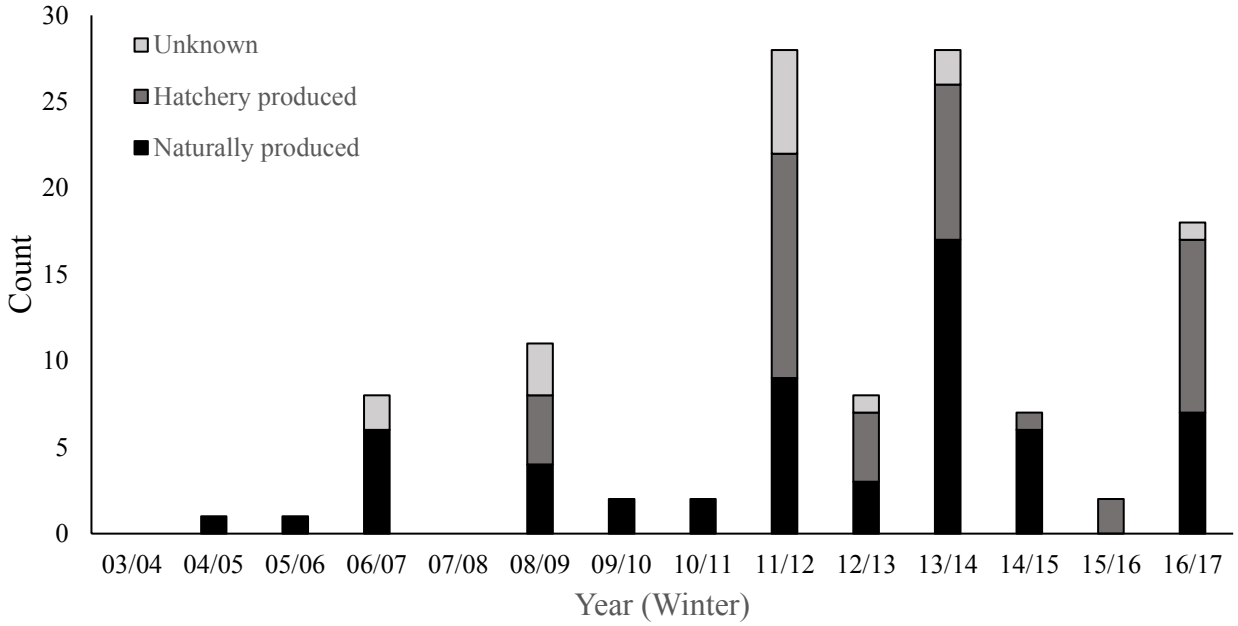


Figure 8. Steelhead (>16 inches) passage count at the fish monitoring weir on the Stanislaus River (n=116).

A complex interaction of numerous environmental and genetic factors determines the propensity of *O. mykiss* to express an anadromous life history. While a detailed elaboration of these factors and their applicability to the Stanislaus River populations exceeds the scope of the comments provided in this document, it is worth noting that consistent survival differences between the two life history forms can constitute a feedback loop that ultimately influences the magnitude of prevalence of one form over the other. As a result of known and recognized stressors (discussed in more detail in Section 3), survival of juvenile outmigrants to the marine environment (and, subsequently, the number of adult returns) is exceedingly low. According to the current understanding of the Stanislaus River *O. mykiss* population, a large proportion of the population remains as residents in the Stanislaus River. Anadromy does still persist in the Stanislaus River, as evidenced by long-term life-cycle monitoring efforts described herein and research conducted by Zimmerman et al. (2009), who found 1 steelhead among 157 samples of *O. m*ykiss. Further,

progeny of steelhead were represented among multiple age classes of juvenile fish, albeit at very low rates (Zimmerman et al. 2009).

1.4. Off-channel Habitat Use by O. mykiss

Since 2009, various modeling studies have investigated the possibility of creating/inundating floodplain or similar off-channel habitat by increasing discharge, with the general conclusion that well-defined floodplain does not exist along the Stanislaus River within the magnitude of operational flows. Even though additional wetted area is gained during higher flows, such habitat is patchy and exhibits characteristics that are unlikely to provide the benefits typically associated with floodplain rearing of juvenile Chinook. In contrast to Chinook salmon, *O. mykiss* typically do not use floodplains for rearing, and lack of observation of *O. mykiss* in inundated off-channel areas – despite substantial research efforts devoted to this subject in recent years – confirms this assessment.

On the Stanislaus River, extensive surveys of inundated off-channel habitats during periods of increased discharge (in 2013, 2014 and 2017, at flows between 2,400 and 5,000 cfs) revealed that few, if any, of these habitats have characteristics associated with a traditional floodplain. Instead, inundated habitat is often characterized by thick vegetation cover, great (>4 ft) depth, and large amounts of decaying organic matter. Juvenile salmonids were documented in inundated side channels at a recently restored location, but no rearing salmonids were documented elsewhere despite extensive sampling of off-channel habitat.

This topic is applicable to the existing RPA action III.2.2 (Conduct Floodplain Restoration and Inundation Flows in Winter or Spring to Inundate Steelhead Juvenile Rearing Habitat), and discussed in greater detail in Section 2.5.

2. Evaluation of Existing Regulatory Actions, Including RPAs

In this section, existing regulatory actions and RPA actions identified by the BiOp are discussed and evaluated with respect to effectiveness in avoiding jeopardy of *O. mykiss*. Where warranted, suggestions – based on our now much improved understanding of *O. mykiss* population characteristics in the Stanislaus River – for modifications of existing RPAs are offered.

2.1. Operation of a Dissolved Oxygen Compliance Point

BOR is required to make releases from New Melones Reservoir to maintain a dissolved oxygen (DO) concentration of 7.0 mg/L in the Stanislaus River at Ripon (RM 16) year-round. However, ambiguity persists regarding the justification for this requirement. Initially formulated, the requirement was intended to "protect the salmon fishery" and the compliance point may have been set at Ripon as a result of waste discharges from canneries in the area that were high in biological and chemical oxygen demand. Such discharges no longer occur. The current DO concentration required by the CWRQCB is intended to protect the cold-water fishery and spawning fishes, which in the Stanislaus River are primarily salmon and *O. mykiss*. While establishing a DO requirement for the protection of such fishery is appropriate, the compliance point(s) and schedule should reflect where and when these species are present.

FRCS in the Stanislaus River are generally ocean-run, meaning that they spend less than one year in freshwater before migrating to sea. Consequently, very few juvenile FRCS live in the river through the summer. *O. mykiss* live in the river year-round, but are only found in the lower reaches (i.e., near Ripon) while migrating into (primarily October-March) or out of the river (primarily January-March). Snorkel surveys have been conducted each summer since 2009 to determine the abundance and distribution of *O. mykiss* in the Stanislaus River, and how these population characteristics may vary in response to environmental factors (see Section 1.1.). Surveys conducted in an 18.3-mile reach from Goodwin Dam to Oakdale (RM 40.1) consistently demonstrated that over 95% of the over-summering *O. mykiss* population resides in the first 11.5 miles between Goodwin Dam (RM 58.4) and OBB (RM 46.9). Distribution of both juvenile and adult *O. mykiss* has been found to be primarily explained by physical habitat parameters, not water quality. Specifically, *O. mykiss* distribution is correlated with stream habitat, such that abundance (density) decreases as gradient decreases, and gradient decreases with distance downstream from Goodwin Dam. Few *O. mykiss* are observed in the river below OBB due to lack of suitable physical habitat (gradient, substrate, and complexity). These surveys also documented that, on average, 99% of the few over-summering juvenile Chinook salmon were also found above OBB.

Proposed modification to existing regulatory action: The DO control point should be moved to Orange Blossom Bridge (OBB; RM 46.9) to better reflect conditions in occupied habitat. This would not result in negative impacts to the population, yet would enhance the ability to conserve water storage in New Melones Reservoir for other beneficial uses and/or maintenance of the cold-water pool for future releases (in sequential drought years). The importance of maintaining an adequate cold-water pool was dramatically illustrated in recent years, when *O. mykiss* abundance declined from a long-term average (2009-2014) of just over 20,000 fish to only about 5,000 fish in 2015 and 2016. This decrease in abundance is attributable to increased water temperatures

during the summer months resulting from the depletion of the cold-water pool in the reservoir (see Section 1.1).

2.2. RPA Action III.1.1. Establish Stanislaus Operations Group for Real-Time Operational Decision-Making as Described in These Actions and Implementation Procedures.

This action specifies the formation of a group that includes representatives from state and federal agencies, *and outside expertise* [emphasis added]. However, the Districts and/or their representatives are not included in the group, although the SOG relies heavily on data collected and provided by the District and their contractors to guide the decision-making process. Instead, a separate group, the Stanislaus River Forum was established. This creates an extra burden on agency staff to discuss issues in duplicate and is far less effective than direct communication.

Proposed modification to existing RPA: Representation by the Districts, as a major stakeholder affected by the decisions of the SOG and arguably the party with the most detailed and recent information pertaining to fisheries resources in the Stanislaus River, would enhance the effectiveness and efficiency of the SOG.

2.3. RPA Action III.1.2. Provide Cold-Water Releases to Maintain Suitable Steelhead Temperatures.

This RPA action requires BOR to manage the cold-water supply in New Melones Reservoir and make releases to provide suitable temperatures for CV steelhead rearing, spawning, egg incubation smoltification, and adult migration, in accordance with a prescribed compliance schedule (Table 1). Compliance points are Knights Ferry (RM 56.3) and Orange Blossom Bridge (RM 46.9) which are 2.1 and 11.5 miles downstream of Goodwin Dam, respectively.

Table 1. Temperature compliance schedule as specified in the NMFS RPA amendments (2011).

Temperature Criteria	Applicable Timeframe	Targeted Lifestage
Temperature below 56°F at OBB	Oct 1* - Dec 31	Adult migration
Temperature below 52°F at KNF and 57°F OBB	Jan 1 – May 31	Smoltification
Temperature below 55°F at OBB	Jan 1 – May 31	Spawning and incubation
Temperature below 65°F at OBB	June 1 – Sept 30	Juvenile rearing

The temperature goals identified in the compliance schedule were not met in recent years. As previously discussed in Section 1.1, grossly elevated summer water temperatures resulted in detrimental effects to the population of *O. mykiss* in the Stanislaus River and adverse conditions during fall-run Chinook salmon spawning and incubation. Contrary to the goal of this RPA, adherence to the prescribed compliance schedule reduced storage in New Melones Reservoir and contributed to the depletion of the cold-water pool, leading to detrimental in-river temperature conditions for *O. mykiss* and FRCS during the recent drought.

An assessment and evaluation of observed temperatures during 2011-2015 (operating according to the BiOp flow schedule) and expected temperatures under alternative operational guidelines (from the Interim Operations Plan) indicates that summer and fall water temperatures would have been substantially lower under the Interim Operations Plan in 2014 and 2015 (Figure 9).

In addition, temperature monitoring and modeling (HEC-5Q) on the Stanislaus River shows that water temperature in the anadromous reach of the Stanislaus River (and other tributaries in the basin) are difficult to influence through dam releases, as they are predominantly determined by ambient air temperatures. Cool or cold water released from dams quickly (often within 10 – 15 miles) warms to a point above required temperature criteria. As a consequence, increased discharge during the summer months does not serve to extend the longitudinal extent of cold-water habitat in the river; rather, increased releases deplete storage that may be needed to provide cool water in subsequent years to maintain suitable conditions in the most densely occupied reach below Goodwin Dam.

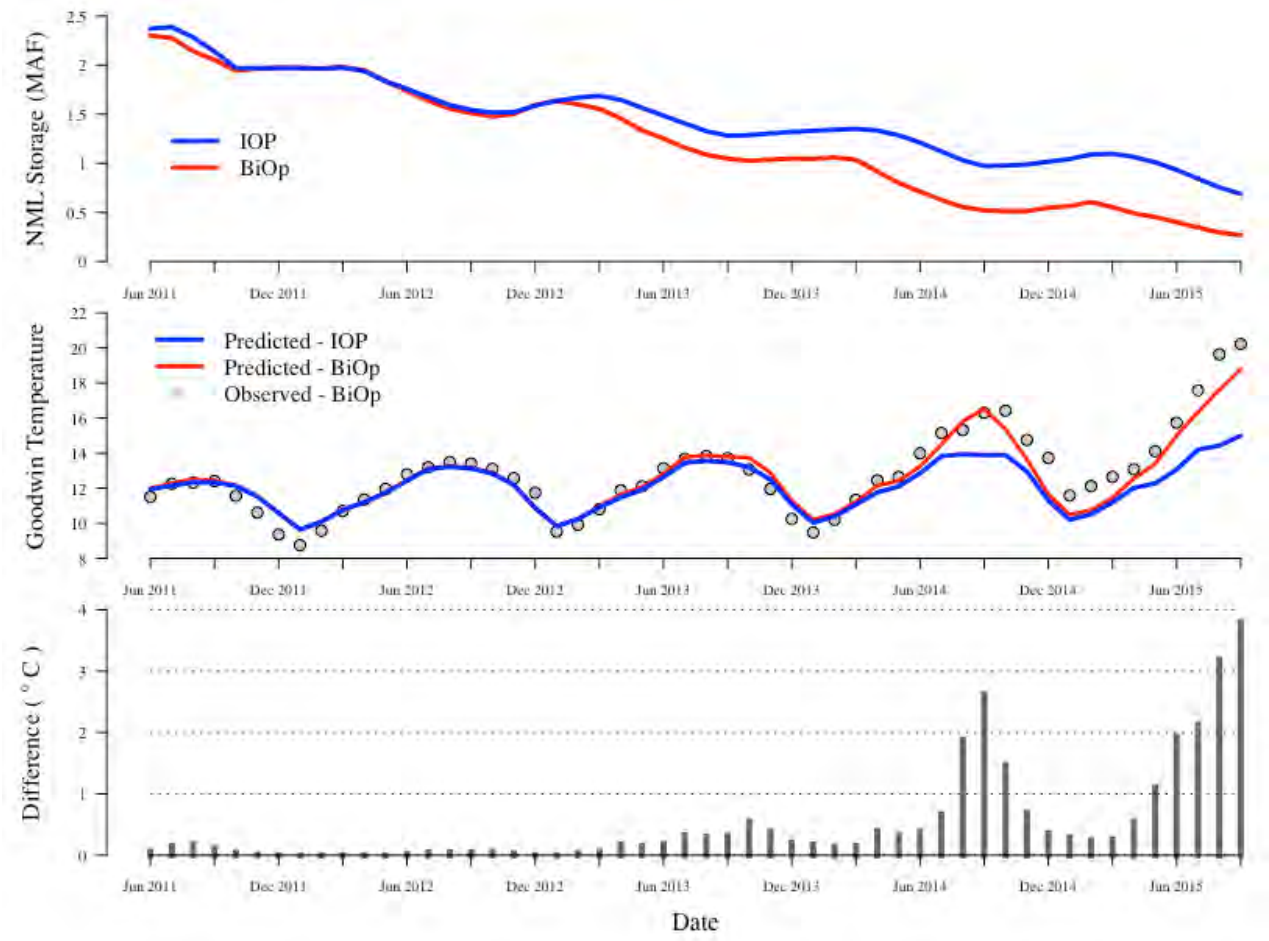


Figure 9. New Melones Reservoir storage (MAF; top panel) and predicted water temperatures (maximum monthly) at Goodwin Dam (middle panel) under the Interim Operations Plan (IOP; blue lines) and under the Biological Opinion (BiOp; red lines). Observed maximum temperatures for each month at Goodwin Dam are denoted with gray points (middle panel). The lower panel shows the predicted difference between water temperatures between the IOP and BiOp.

In addition to the detrimental effects on *O. mykiss*, reduced storage/cold-water pool resulting from adherence to the prescribed compliance schedule and ensuing elevated water temperatures also negatively impacted FRCS in the Stanislaus River. An examination of the spatial and temporal distribution of redd deposition over multiple years revealed that, while the spatial distribution of redd deposition remained stable, spawning occurred slightly later during drought years due to slightly later upstream migration (Figure 10). While spawning later could be advantageous as water temperatures generally decrease through the fall, water temperatures remained high during 2014 and 2015. The majority of redds were constructed in these years at water temperatures exceeding the optimal temperature range (Figure 11), leading to high incubation mortality. As a result, estimate juvenile production per spawner in 2014 and 2015 were the lowest since data collection began in 1998 (Figure 12). These results suggest that elevated temperatures are likely to adversely impact Chinook salmon populations through high incubation mortalities, despite not exceeding adult migratory thresholds. This highlights the importance of maintaining adequate cold-water storage in upstream reservoirs on managed rivers.

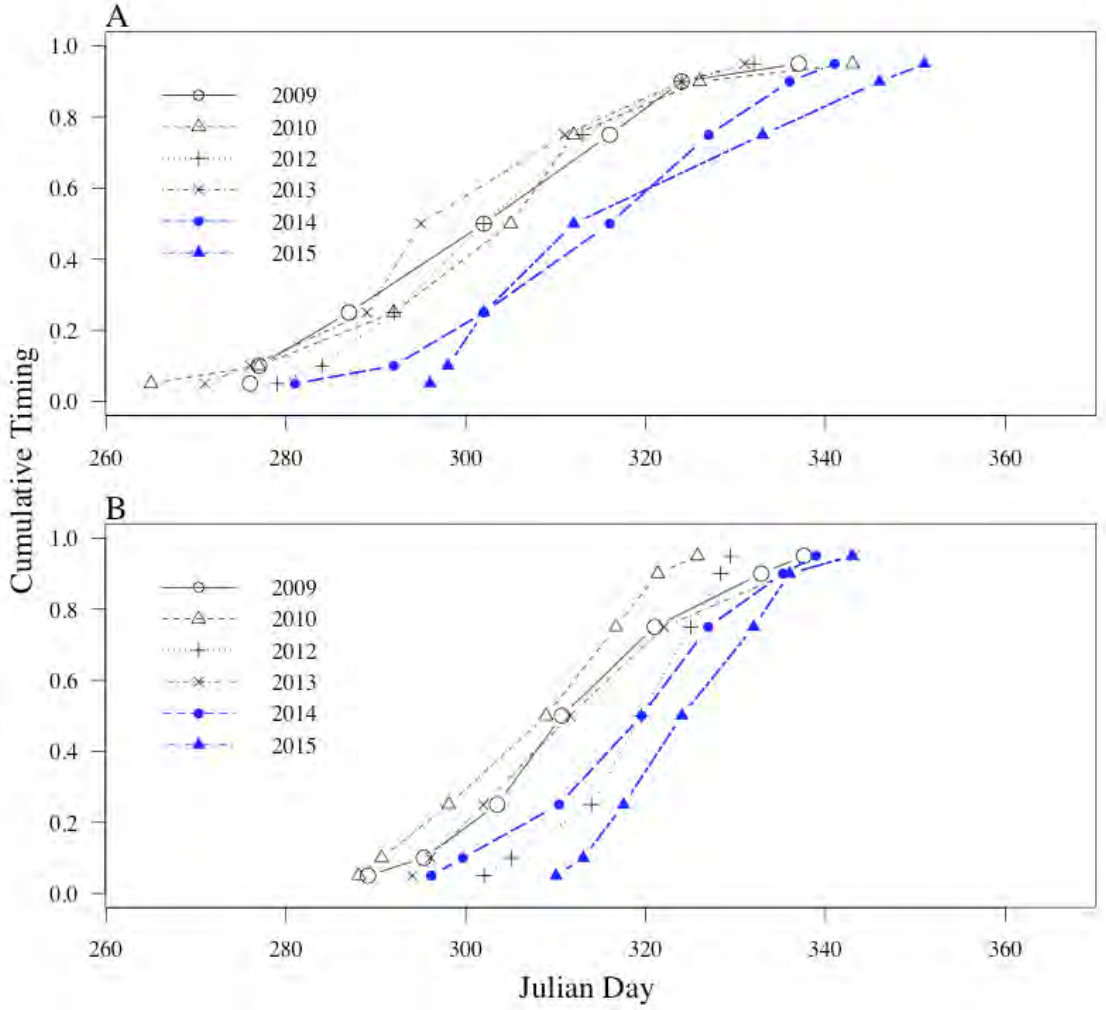


Figure 10. Cumulative run timing of adult Chinook salmon at the Stanislaus River Weir during 2009, 2010, 2012 – 2015 (panel A) and simulated spawning timing (panel B). Run timing and simulated spawning timing in 2014 and 2015 are in blue.

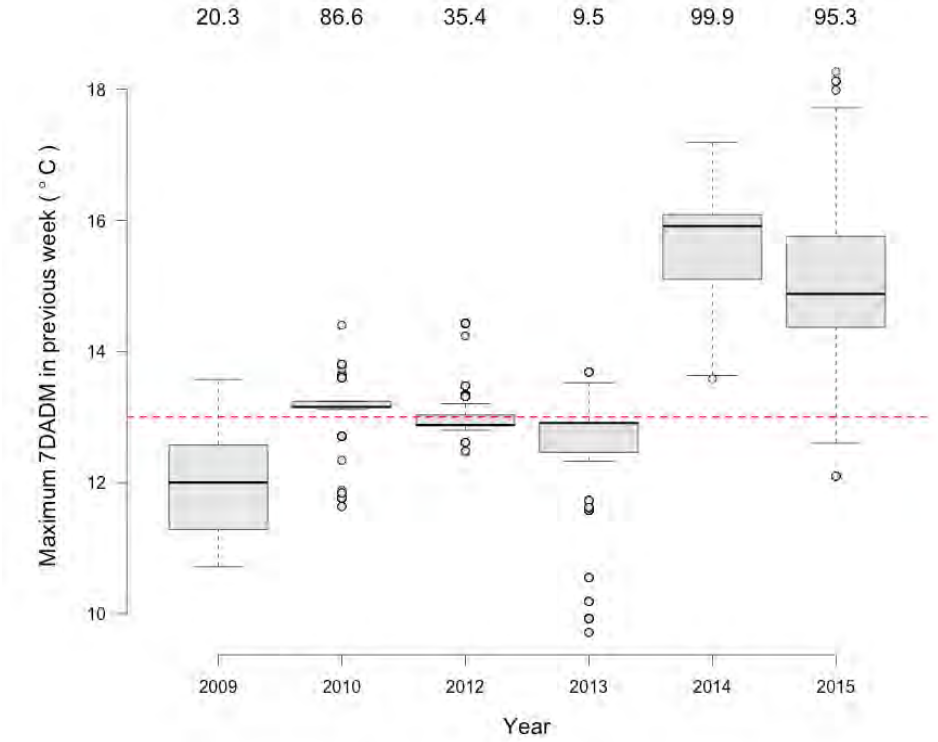


Figure 11. Distribution of Chinook salmon spawning activity (redd construction) in relation to water temperatures (7DADM; measured at Goodwin Dam) in the Stanislaus River. Horizontal red line represents 13ºC, the recommended temperature guidance for spawning for trout and salmon (EPA 2003). Numbers across top are the estimated percentage of redds that were constructed at water temperatures greater than 13ºC.

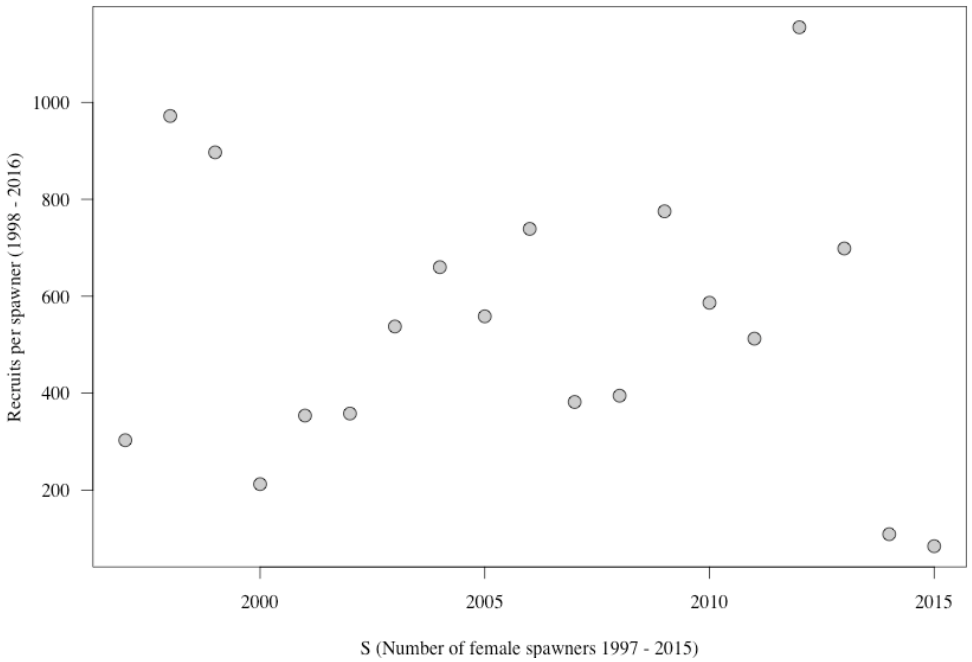


Figure 12. Recruits (number of juvenile FRCS at Oakdale) per spawner on Stanislaus River from 1998 to 2016.

Proposed modification to existing RPA: The existing water temperature compliance schedule should be revised to reflect the available information on *O. mykiss* distribution and the limitations of influencing temperature downstream of Goodwin Dam by modifying the discharged volume.

2.4. RPA Action III.1.3. Operate the East Side Division Dams to Meet the Minimum Flows, as Measured at Goodwin Dam, Characterized in Figure 11-1, and as Specified in Appendix 2-E.

This RPA action requires BOR to provide minimum flows as prescribed in Appendix 2-E to optimize CV steelhead habitat for all life history stages, to provide habitat maintaining geomorphic flows, and to provide migratory cues to smolts and facilitate out-migrant smolt movement on the declining limb of pulse flows.

Multiple studies have been conducted to determine discharge values that optimize habitat for salmonids., Each study employed a different approach, and each had different findings, but collectively the studies indicated no clear relationship between the quantity of preferred or suitable habitat and flow. As summarized below, one study indicated that habitat increases with increased discharge while three studies indicated that habitat decreases with increased discharge:

- The US Fish and Wildlife Service (USFWS) conducted an Instream Flow Incremental Methodology (IFIM) study between Goodwin Dam and Riverbank to study the relationship between flow and habitat for salmonids at flows ranging from 25 cfs to 1,300 cfs. For FRCS, this study found maximum spawning habitat at 300 cfs, maximum egg incubation habitat at 150 cfs, and maximum juvenile habitat at 200 cfs. The maximum weighted usable area of habitat for juvenile *O. mykiss* was found at 150 cfs (Aceituno 1993).
- The BOR and USFWS collaboratively conducted a study using two approaches to study the relationship between river discharge and habitat for rearing salmonids: 1) a spatially explicit GIS tool and 2) a two-dimensional model (Bowen et al. 2012). While the GIS tool indicated that habitat for both juvenile *O. mykiss* and juvenile FRCS *decreases* as discharge increases from 250 cfs to 1,500 cfs, the 2D model found the opposite.
- Steep banks of the entrenched channel do not allow for inundation of extensive shallow water rearing habitat at flows up to 3,000 cfs. Shallow, vegetated margins appear to be the most suitable habitat for FRCS fry, yet this habitat type becomes increasingly rare as flows increase from 200 cfs to 3,000 cfs.

Although some sediment mobility is observed at flows between 1,500 cfs and 3,000 cfs in areas characterized by a prevalence of spawning gravel (such as recently restored areas; NewFields 2013), Kondolf et al. (2001) suggest that flows exceeding the operational range of discharge under managed conditions (8,000 cfs) may be needed to mobilize the bed and maintain channel form and gravel quality. As a consequence, storage volume in New Melones Reservoir is depleted through implementation of the prescribed flow schedule without meeting the intended objectives of the RPA. Conversely, this information indicates that beneficial levels of bed mobility may be achieved at managed flows in areas that have been restored or supplemented with gravel.

While no objectives are stated for adult migration, the flow schedule includes a fall pulse flow. A May 2009 memorandum documenting the development of the RPA actions for the Stanislaus River indicates a need for a fall "attraction" pulse flow because upstream migrating *O. mykiss* are observed at the same time as pulse flows provided for FRCS and not before. The memorandum also indicates that fall attraction flows result in upstream migration of FRCS. A recent scientific publication examined the effectiveness of attraction flows to provide migratory cues to adult salmonids on the Stanislaus River (Peterson et al. 2017). This publication calls into question the purported benefit of high-volume attraction flows, and suggests that discharges of smaller magnitude would result in the equivalent migration stimulation. However, due to the existing flow prescriptions, the study could not include a scenario without an attraction flow to establish a baseline migration pattern. Similarly, findings by an independent panel of experts reporting on the efficacy of regulatory actions prescribed by the BiOp found "little direct evidence to support the contention that the pulses, as designed, are actually triggering migrations" (Gore et al. 2018). Increased operational flexibility can provide important information on how to best allocate water resources while ensuring the provision of biologically meaningful behavioral cues to fishes.

It should be noted that the current compliance schedule does not take into account the available information on (low) abundance and timing of outmigrating juvenile steelhead. Few steelhead smolts are produced on the Stanislaus River (see Section 1.3.), and smolt production does not appear to be influenced by water temperature during the outmigration period. Also, the effectiveness of pulse flows to stimulate outmigration by steelhead is questionable. For example, during a weeklong pulse flow in spring of 2014, no *O. mykiss* smolts were captured in the rotary screw traps on the river and no untagged *O. mykiss* smolts were captured in the Mossdale trawl.

Proposed modification to existing RPA: The existing flow schedule should be revised to reflect the available information of *O. mykiss* abundance and migration timing. The revised schedule should provide sufficient operational flexibility to evaluate the effectiveness of pulse flows in triggering migration response, and to document the limitations of influencing temperature downstream of Goodwin Dam. Such flexibility should include the opportunity to provide pulse flows of reduced duration, reduced magnitude, and a no-pulse scenario to evaluate the migratory response of *O. mykiss* and FRCS.

2.5. RPA Action III.2.2. Conduct Floodplain Restoration and Inundation Flows in Winter or Spring to Inundate Steelhead Juvenile Rearing Habitat on One- to Three-Year Schedule.

This RPA action requires BOR to achieve floodplain inundation flows that inundate CV steelhead juvenile rearing habitat on a one- to three-year return schedule.

This action does not take into consideration our current understanding of the ecology and behavior of juvenile steelhead. Unlike juvenile Chinook salmon, juvenile steelhead are not likely to use floodplains or rear in floodplain habitats to any great degree at any time of year (Bustard and Narver 1975, Swales and Levings 1989, Keeley et al. 1996, Feyrer et al. 2006, Moyle et al. 2007), and therefore cannot be expected to benefit from the availability of floodplain habitat. Based on multi-year studies in the Cosumnes River, Moyle et al. (2007) concluded that steelhead were not adapted for floodplain use and the few steelhead observed were inadvertent floodplain users (i.e.,

uncommon and highly erratic in occurrence) that were "presumably...carried on to the floodplain by accident." Therefore, the available data indicate that steelhead are not likely to use floodplains and thus would not benefit from floodplain inundation, regardless of season.

Furthermore, numerous modeling studies and field surveys show that floodplains with characteristics like those shown to provide benefits to Chinook salmon (i.e., large, continuous expanses of shallow-water habitat) cannot be created through managed flows on the Stanislaus River. Areas inundated by increased flows are generally small, patchy, and characterized by moderate to heavy cover (made up of live non-woody and woody cover and dead wood).

Examples of studies that show limited potential to create inundated areas through increased flow and the lack of habitat enhancement include:

- CDFW (formerly DFG) analyzed potential floodplain inundation in the Stanislaus River, and found that the Stanislaus River channel did not appear to have a well-defined floodplain within the 100 to 10,000 cfs flow range examined (DFG 2010).
- A model created by NewFields (2013) found a gain of only 300 acres of inundated area between KNF (RM 56.3) and Jacob Meyer (RM 34.7) as flows increase from 500 to 5,000 cfs. This corresponds approximately to a 50 ft wide band of additional inundated area on each bank, which can hardly be characterized as floodplain.
- A study of the relationship between river discharge and habitat for rearing salmonids (Bowen et al. 2012) indicates that weighted usable area for *O. mykiss* fry and juveniles *decreases* as discharge increases from 250 cfs to 1,500 cfs.
- Three years of off-channel sampling on the Stanislaus River has identified many inundated areas associated with increasing discharge. However, few, if any, act as traditional floodplains (inundated habitat is often characterized by thick vegetation cover, great depths [>4 ft], and large amounts of decaying organic matter). Any salmonids observed during high flows were documented in areas best described as side channels, usually associated with recent restoration sites.
    - In April and May of 2013, Goodwin Dam releases increased to 3,000 cfs. During this time, recently inundated, off-channel habitats were mapped, physical and water quality measurements were collected, and fish surveys were conducted. Floodplain sites were generally small (average < 1 acre). Dissolved oxygen concentrations of inundated areas varied greatly (0.1 mg/L to 10.4 mg/L), depending on the location of measurement and characteristics of the inundated area. Average water temperature on the inundated areas was 0.5-0.9 degrees warmer then the mid-channel (greater temperature differences were observed in backwater areas with low DO levels). Nearly all locations were characterized by moderate to heavy cover (made up of live non-woody and woody cover and dead wood).
    - In April and May of 2014, at flows between 2,400 and 2,700 cfs, inundated off-channel habitat at these flows were documented and sampled. Shallow off-channel habitat was found to be very limited along the Stanislaus River. No salmonids were documented in any of the off-channel. habitats sampled below Oakdale, despite large numbers of juvenile salmon in the system. Poor connectivity, in combination with large amounts of decaying organic matter, resulted in dissolved oxygen depletion in parts of some inundated areas, making them unsuitable for salmonid rearing.

- In May of 2017, at flows in excess of 5,000 cfs, off-channel habitat was delineated and sampled. No juvenile salmonids were observed.

Proposed modification to existing RPA: This RPA action is not supported by the best available science and knowledge regarding steelhead and should be deleted.

2.6. RPA Action III.2.1. Increase and Improve Quality of Spawning Habitat with Addition of 50,000 Cubic Yards of Gravel by 2014 and with a Minimum Addition of 8,000 Cubic Yards per Year for the Duration of the Project Actions.

The addition of 50,000 cubic yards of gravel by 2014 and continuous augmentation of gravel was intended to enhance the availability and quality of suitable substrate.

Gravel mining has created a substantial substrate deficit in the Stanislaus River below Goodwin Dam, and lack of gravel recruitment make ongoing, artificial gravel additions a necessity to provide and increase suitable habitat for reproduction. Studies show that a significant deficit of suitable spawning habitat/gravel still exists in the Stanislaus River (e.g. Kondolf et al. 2001), and the availability of suitable spawning habitat is still limiting for FRCS in the Stanislaus River in most years. Gravel additions and habitat restoration projects have been demonstrated to benefit salmonid populations. Salmonids respond readily to newly created riffles, side channels and similar habitat of high value to various life stages. Ongoing, annual monitoring shows high (Chinook salmon) spawner abundance at recently restored riffles. While the restored habitat is readily used, high levels of redd –superimposition in some areas provide evidence for continuing limitations in available suitable habitat.

Studies show that a significant deficit of suitable spawning habitat/gravel still exists in the Stanislaus River (e.g. Kondolf et al. 2001). Ongoing, annual monitoring shows high (Chinook salmon) spawner abundance at recently restored riffles. While the restored habitat is readily used, high levels of redd–superimposition in some areas provide evidence for continuing limitations in available suitable habitat.

Proposed modification to existing RPA: This RPA addresses known deficits in habitat availability in the Stanislaus River and should be preserved. The quantities of gravel specified in the RPA should be evaluated for adjustment, based on the current understanding of gravel deficit in the Stanislaus River (Kondolf et al. 2001 estimate that about 20,000 cubic yards are naturally supplied by the watershed behind the dams). Also, the gravel supplementation should be tailored, to the extent possible, to enhance conditions for *O. mykiss*/steelhead spawning and rearing (different/smaller gravel sizes), rather than continue to assume that substrate sizes suitable for Chinook salmon will equally benefit *O. mykiss*.

3. Stressors On Native Fish Populations Other Than CVP And SWP Operation And Suggested Beneficial Measures to Alleviate these Stressors

3.1. Predation by Non-Native Species

With low numbers of downstream migrating *O. mykiss* documented at the RSTs, we can be fairly certain that a large proportion of the population is remaining as residents in the Stanislaus River. However, the expression of anadromy persists in the Stanislaus River, however, as evidenced by the reproductive contribution of returning anadromous adults (Zimmermann et al. 2009) and annual observations of emigrating smolts and returning adults (Figures 6, 8), albeit at low rates.

As indicated in Section 1.4, the prevalence of one life history type over another (resident versus anadromous) in a given populations is determined by a complex set of genetic and environmental interactions. Selection against one life history form by reducing reproductive success favors the relative abundance of the other. Clearly, increased mortality at any one point prior to spawning reduces reproductive success, and high mortality rates suffered by outmigrating juvenile steelhead (the anadromous life history form) therefore contribute greatly to the continuously low abundance of steelhead in the Stanislaus River.

On the Stanislaus River, studies in the late 1990s first confirmed that predation was occurring in the river, suspected predation was occurring more frequently in substantially altered habitats, and that non-native predators were present and abundant. Abundant and large non-native predators were further documented by operation of the fish counting weir on the Stanislaus River, which demonstrated that striped bass live in the river year-round and are abundant, especially in dry years.

Predation by non-native species is not limited or unique to the Stanislaus River, however. On the Tuolumne River, mortality of over 90% of juvenile Chinook salmon between two trapping stations is likely attributable to predation. A variety of non-native game fish species, such as striped bass, largemouth bass, smallmouth bass, white catfish, black crappie, and spotted bass, prey on juvenile salmon in the San Francisco Bay-Delta and its watershed (Shapovalov 1936, Stevens 1966, Thomas 1967, Pickard et al. 1982, Merz 2003, Gingras 1997, Tucker et al. 1998, Nobriga and Feyrer 2007). During spring of 2014, a predation study conducted by NMFS found that predators outnumber Chinook salmon by a ratio of roughly 200 predators for every 1 Chinook salmon.

The existing body of science evidence on predation has only recently received increased recognition among fisheries managers as a major source of juvenile salmon mortality, as reflected in the following quote:

"By virtue of their abundance, habits, and size, predation by striped bass has been implicated as a substantial contributor to the poor survival of young salmon used in experiments to estimate reach- and site-specific survival rates through the Delta and in the Sacramento River (Bowen et al. 2009; Gingras 1997; Michel 2010; Newman and Brandes 2010; Perry and Skalski 2008; Perry and Skalski 2009; Tucker et al. 1998; Vogel 2010; Vogel 2011). By plausible extension, listed salmon (and steelhead) also suffer poor survival rates due to predation, including predation by striped bass." (CDFW 2011).

The NMFS Draft Recovery Plan for Chinook salmon and Central Valley steelhead considered "predation on juveniles" one of the most important specific stressors. Further, reducing abundance of striped bass and other non-native predators must be achieved to "prevent extinction or to prevent the species from declining irreversibly" (NMFS 2009).

Suggested beneficial measures: There is substantial evidence that targeted efforts to reduce the abundance of non-native predatory fish can decrease mortality of migrating juveniles at predation hotspots, and that broad-scale suppression of piscivorous species can lead to survival benefits for juvenile salmonids. Efforts are currently underway to implement a Native Fish Plan on the Stanislaus River, which includes measures to reduce predation-induced mortality.

In order to have a measurable and lasting impact, predator removal and suppression efforts must be sustained. Long-term financial support for such efforts should be incorporated in the conditions for future Project operations.

3.2. Habitat Restoration

It has long been recognized that spawning and/or juvenile rearing habitat availability may limit FRCS production in the Stanislaus River (SRFG 2004; also see Section 2.6). In 2000, a reconnaissance level study estimated that 274,400 ft^2 of suitable spawning area was available in the Stanislaus River above Oakdale (Kondolf et al. 2001). Assuming a requirement of about 216 ft^2 to support a mating pair of Chinook salmon (Burner 1951), this quantity of gravel would only support 1,270 spawning pairs. This estimate was further supported by the relatively constant estimates of the number of juveniles produced per spawning female Chinook salmon, which indicated that the Stanislaus River had an estimated carrying capacity between 1,000 and 3,000 Age 3 equivalent spawners, or 1.5 to 2.0 million juveniles, prior to recent habitat restoration efforts (SRFG 2004). Gravel augmentation near Goodwin and habitat restoration projects at Knights Ferry and Lovers Leap (in 2007), and at Honolulu Bar (in 2012) have approximately doubled the area of suitable spawning gravel above Oakdale, providing enough spawning habitat to support an estimated 2,545 spawning pairs. Juvenile rearing habitat area was also increased through restoration of the side-channel and creation of floodplain habitat at Honolulu Bar during 2012, and through construction of a side-channel a couple of miles downstream at Lancaster Road during 2011. While there is no information indicating that spawning habitat for *O. mykiss* is also limiting, the sediment deficit in the Stanislaus River (see Section 2.6) clearly affects all native fish species. *O. mykiss*, whether resident or anadromous, can benefit from the high invertebrate production of riffles typically associated with spawning habitat for FRCS, and are frequently associated with areas of moderate current velocities found in such habitat.

In addition to gravel supplementation, several indications suggest that other habitat restoration activities are also benefitting both, the Stanislaus River *O. mykiss* and FRCS populations. Most importantly, during 2012-13 restoration sites were heavily used by both species for spawning and rearing, and high densities of juvenile *O. mykiss* have been documented at multiple recently restored sites, particularly in contoured side channels.

Suggested beneficial measures: Future efforts to enhance riverine habitat to the benefit of native salmonids should, in addition to continuous gravel supplementation (see Section 2.6), include further in-channel restoration efforts, exemplified by the Honolulu Bar Restoration Project. Additional areas with high restoration potential have already been identified.

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ATTACHMENT E

New Facilities

OID has conducted a preliminary analysis of moving excess water from the Tuolumne River Basin into the Stanislaus River Basin. For purposes of the analysis, excess water was defined as water excess to TID, MID, CCSF, FERC flows on the Tuolumne River and the Delta in excess. The Stanislaus and Tuolumne River Basins were modified. There were periods in the hydrologic record wherein water could be made available into OID and OID's water demand from New Melones could be reduced.

The preliminary analysis was based on a pipeline running from Modesto Lake to OID's main canal. Any water made available to OID's main canal would keep water in storage in New Melones.

This has the benefit of no new storage, capturing water when it is "excess," providing multi-benefits to the region.

This alternative should be addressed in the EIS.

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Santa Clara Valley Water District

February 1, 2018

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SENT VIA EMAIL: kharrison@usbr.gov

Re: Comments on Notice of Intent to Prepare a Draft Environmental Impact Statement on Revisions to the Coordinated Long-Term Operation of the Central Valley Project and State Water Project, and Related Facilities

Dear Ms. Harrison,

The Santa Clara Valley Water District (District) appreciates the opportunity to comment on the Notice of Intent (NOI) to Prepare a Draft Environmental Impact Statement (EIS) on Revisions to the Coordinated Long-Term Operation of the Central Valley Project and State Water Project and Related Facilities (LTO). The District supports the Bureau of Reclamation's (Reclamation) stated purpose to continue operation of the Central Valley Project (CVP) and State Water Project (SWP) in a manner that enables Reclamation and the Department of Water Resources (DWR) to maximize water deliveries consistent with contractual obligations and agreements and applicable laws, and to augment operational flexibility by addressing the status of listed species.

The District understands that Reclamation is pursuing three somewhat parallel tracks with respect to long-term operations of the CVP in coordination with the SWP. Track 1 is intended to address modifications that could be evaluated within a year under the National Environmental Policy Act (NEPA), and which could lead to targeted consultation(s) under the Endangered Species Act (ESA). Track 2, the subject of this NOI, is intended to evaluate a much broader set of actions at a programmatic level, leading potentially to a programmatic review under the ESA. And, Track 3 is intended to address the August 2016 request by Reclamation and DWR for reinitiation of consultation on long-term coordinated operations of the SWP and CVP, potentially leading to a formal, CVP/SWP-wide consultation under ESA.

The District has some concerns over the potential implications of this approach on schedule and feasibility, and requests that Reclamation continue to work with the CVP contractors, including the District, on selecting an approach that will support execution of long-term CVP contract renewals in an efficient and timely manner.

In addition, the District is concerned that Reclamation appears to be proceeding with this effort independent of DWR. We strongly urge Reclamation to work closely with DWR on selection of the approach as well as selection of a revised set of operations.

While the District appreciates Reclamation's apparent desire to complete this planning and review process within a short timeframe, meeting a short schedule should not be at the expense of meaningful stakeholder input including those afforded by the Water Infrastructure Improvement for the Nation Act (WIIN Act). The District is concerned with Reclamation staff's portrayal of CVP and SWP contractor engagement, as defined under the WIIN Act, being satisfied by very large, quarterly public "brainstorming" workshops. Section 4004(a) of the WIIN Act provides a far greater level of engagement by CVP and SWP contractors that so request. The District has so requested and looks forward to continuing to work closely with Reclamation on this effort.

Please do not hesitate to call if you have any questions regarding our comments.

Sincerely,

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February 1, 2018

VIA E-MAIL AND U.S. MAIL

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Re: Notice of Intent to Prepare a Draft Environmental Impact Statement, Revisions to the Coordinated Long-Term Operation of the Central Valley Project and State Water Project, and Related Facilities – Scoping Comments

Dear Ms. Harrison:

The Notice of Intent to Prepare a Draft Environmental Impact Statement, Revisions to the Coordinated Long-Term Operation of the Central Valley Project and State Water Project, and Related Facilities, published in the Federal Register on December 29, 2017 ("NOI"), 82 Fed. Reg. 61789 (Dec. 29, 2017), presents an important opportunity for the United States Bureau of Reclamation ("Reclamation") to change how it operates the Central Valley Project ("CVP"). Simply put, the existing efforts to manage the Sacramento-San Joaquin River watershed ("Watershed") and delta estuary ("Delta") are failing; fisheries continue to decline and water supplies that serve millions of Californians and acres of highly productive agricultural lands have become more-and-more unreliable. As such, the San Luis & Delta-Mendota Water Authority ("Water Authority") and Westlands Water District ("Westlands") support Reclamation's effort to maximize water supply and marketable power generation.

Most indicators of Watershed and Delta health reflect a system that is deteriorating. The Delta is highly altered physically, biologically, and chemically. The Delta has lost higher elevation habitat, tidal wetlands, shallow-water channel margin habitat, and connections to floodplains. The Delta has been channelized—natural waterways now have levees and riprap. Harmful algal blooms and ratios of nitrogen to phosphorus persist at levels detrimental to native species, the quantity of submerged plants and predator fish are on the rise, and healthy levels of turbidity and nutritious diatoms and copepods are absent. Indices used to estimate native fish populations suggest fish populations have continued to decline, some to the lowest levels since monitoring commenced. The 2017 Fall Midwater Trawl caught two Delta Smelt, which is the lowest in FMWT

history. In 2017, Sacramento River winter-run Chinook salmon and Central Valley spring-run Chinook salmon adult returns were approximately 1,000 and 1,500, respectively.

Over the last three decades significant, and more restrictive, regulations have been adopted to protect and improve the health of the Watershed and Delta. Primarily through implementation of the federal Endangered Species Act, federal Clean Water Act, California Endangered Species Act, and state Porter-Cologne Water Quality Control Act, millions of dollars have been expended and millions of acre-feet of water have been redirected for the putative protection of the Watershed and Delta with minimal or no measurable benefit. Much of that money and water has come from those who receive CVP and State Water Project ("SWP") water with a substantial amount from the agricultural and urban communities in California. More than any other group, south-of-Delta CVP water service contactors – the Water Authority's member agencies[1] – and the people they serve for municipal, industrial, and irrigation use, have seen the quantity and reliability of their water supplies degraded, some to a point where they can only expect to receive, on average, thirty-five to forty percent of what they are entitled under the contracts they have with the United States.

This disproportionate impact to the Water Authority's member agencies was acknowledged almost twenty years ago through the CALFED Program, a collaborative effort among eighteen state and federal agencies with management or regulatory responsibilities for the Delta, which recognized that at that time "south-of-Delta CVP agricultural water service contractors . . . have been disproportionately affected by regulatory actions." California's Water Future: A Framework for Action, p. 10.[2] More recently, in the NOI, Reclamation recognized: "State and Federal regulatory actions, federal trust responsibilities, and other agreements, have significantly reduced the water available for delivery south of the Sacramento-San Joaquin River Delta, in order, among other things, to protect water quality within the delta and prevent jeopardy and adverse modification of critical habitat of threatened and endangered species." 82 Fed. Reg. at 61790.

When surface water deliveries to communities south of the Delta are restricted or absent, as has been the case in recent years, the people in these communities suffer. This suffering manifests itself in many ways, including:

1. Reduced employee hours, lost wages and jobs, loss of tax revenue to fund municipal services such as fire and police protection, and the resulting reduction in staffing at the local government level, thereby contributing to family disruption and dislocation;

[1] The contractors are member agencies of the San Luis & Delta-Mendota Water Authority. *See* Attachment A for a description of the Water Authority.
[2] http://calwater.ca.gov/content/Documents/new_final_framework.pdf.

2. Adverse impacts to local schools from the relocation of farming-dependent families, lost school revenues, and additional social costs for schools, food shortages and increased demand for public services such as food banks, and an increased incidence of crime;

3. Loss of crops, including the destruction of permanent crops, which increases the amount of fallowed land that diminishes air quality due to dust and particulate matter;

4. Increased groundwater pumping, resulting in decreased irrigation water quality and impacts to crops from increased soil salinity, groundwater overdraft resulting in land subsidence and associated impacts to infrastructure, increased energy usage and associated environmental impacts related to increased pumping, and depletion of groundwater reserves.

Because the CVP's ability to make water available to these communities has been so dramatically impaired, the United States' financial investment in the CVP is at risk. The United States recovers its investment in the CVP, in large part, through rates charged by Reclamation to the Water Authority's member agencies. Reclamation sets those rates based on past and projected deliveries. When supplies are depressed, the rates per acre foot increase. If deliveries are low for a prolonged period, as they have been for in excess of two decades, the ability of the Water Authority's member agencies to make payments and thus for the United States to recover costs associated with development, operation, and maintenance of the aging CVP infrastructure is jeopardized.

The NOI presents an opportunity for change. Through the development of the proposed programmatic environmental impact statement ("EIS") pursuant to the National Environmental Policy Act ("NEPA"), Reclamation can develop alternatives that will enable Reclamation to operate the CVP in a manner that contributes to the State of California's interim and long-term efforts to protect the Watershed and Delta, while restoring their ability to supply water and generate power. Maximizing CVP water supplies for agricultural, urban, and wetland communities and optimizing the marketability of CVP power are laudable and appropriate objectives.

3. Support for Concepts in the NOI

A. Purpose and Need

The Water Authority and Westlands strongly support the stated purpose and need for the preparation of a programmatic EIS for analyzing potential modifications to the continued long-term operation of the CVP, for its authorized purposes, in a coordinated manner with the SWP, for its authorized purposes. The Water Authority and Westlands support achieving the purpose

stated in the NOI through alternatives that restore the water supplies made available by the CVP, in consideration of all authorized purposes of the CVP. The stated purpose of the action:

> [I]s to continue the operation of the CVP in a coordinated manner with the SWP, for its authorized purposes, in a manner that enables Reclamation and California Department of Water Resources to maximize water deliveries and optimize marketable power generation consistent with applicable laws, contractual obligations, and agreements; and to augment operational flexibility by addressing the status of listed species.

82 Fed. Reg. at 61790. The "need" for the action "is to increase operational flexibility," in order to:

- "Maximize water supply delivery, consistent with applicable law, contracts and agreements, considering new and/or modified storage and export facilities[;]
- Review and consider modifications to regulatory requirements, including existing Reasonable and Prudent Alternative actions identified in the Biological Opinions issued by the USFWS and NMFS in 2008 and 2009, respectively[;]
- Evaluate stressors on fish other than CVP and SWP operations, beneficial non-flow measures to decrease stressors, and habitat restoration and other beneficial measures for improving fish populations[; and]
- Evaluate potential changes in laws, regulations and infrastructure that may benefit power marketability."

82 Fed. Reg. at 61790. This statement of the purpose and need for the action is appropriate given the failure of existing policies and regulations to manage the Watershed and Delta for fishery resources, and to provide sufficient water supply to agricultural, urban, and wetland communities. This statement of purpose and need is important as "[a]ll reasonable alternatives examined in detail must meet the defined purpose and need." Bureau of Reclamation, Reclamation's NEPA Handbook (Feb. 2012), p. 8-5.

B. Project Area (Area of Analysis)

The Water Authority and Westlands strongly support the scope of the project area. The NOI defines the project areas as:

> [T]he existing CVP and SWP Service Areas, proposed CVP Service Areas, and storage and export facilities (including potential modifications), within the Sacramento and San Joaquin watersheds (including external watersheds

> connected through facilities).[3] The project area also includes potential improvements and developments of other water supply or power generation programs.

82 Fed. Reg. at 61790. Encompassing all of the areas served by the CVP and SWP, as well as the other areas described above, is important, regardless of whether those areas were excluded from the project area in prior documents prepared pursuant to NEPA.

The Divisions of the CVP are integrated financially and operationally. This integration is reflected in Reclamation law and policy, including the San Joaquin River Restoration Settlement Act ("Settlement Act") and Reclamation's ratesetting policy for the CVP. The integration of CVP was recognized by the National Marine Fisheries Service ("NMFS") when it issued and Reclamation when it accepted the September 18, 2012 Biological Opinion for the San Joaquin River Restoration Program ("SJRRP"). The SJRRP Biological Opinion limited analysis to the reoperation of Friant Dam and downstream flow control structures necessary to implement the requirements of the Settlement Act, but required all other Friant Dam operations to "be addressed in a future and separate consultation regarding the Central Valley Project (CVP) and State Water Project (SWP) long-term operations." SJRRP Biological Opinion, p. 8.

The NOI also recognizes that "Reclamation operates the CVP in coordination with the SWP, under the Coordinated Operation Agreement between the federal government and the State of California (authorized by Pub. L. 99-546)." 82 Fed. Reg. at 61790. Because the coordination between the CVP and SWP is an important part of the affected environment, it is appropriate to include the areas served water by the SWP in the project areas.

4. The Scope of Alternatives and Issues Related to the Development and Implementation of the Proposed Action

In the NOI, Reclamation invites comments on the scope of alternatives and issues to be addressed in the EIS and on important issues related to the development and implementation of the proposed action. 82 Fed. Reg. at 61791. Below, the Water Authority and Westlands address these issues, in response to the information provided in the NOI.

A. Scope of Alternatives

The alternatives analysis is the "linchpin" of an EIS. *Monroe County Conservation Council, Inc. v. Volpe*, 472 F.2d 693, 697 (2d Cir. 1972). In the alternatives analysis, federal agencies must "study,

[3] The Water Authority and Westlands read the text referencing "external watersheds connected through facilities" as including with the Project Area upstream watersheds connected through CVP or SWP facilities, such as the Trinity River watershed.

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(2)(E), 4332(2)(C)(iii). Reasonable alternatives are those that are "technically and economically practical or feasible and meet the purpose and need of the proposed action." 43 C.F.R. § 46.420. The purpose and need for the proposed action should dictate what alternatives be developed for analysis. *See League of Wilderness Defenders-Blue Mountain Diversity Project v. Bosworth*, 383 F. Supp. 2d 1285, 1295 (D. Or. 2005).

It is critically important that Reclamation develop alternatives that consider CVP and SWP operations or modifications to CVP and SWP operations consistent with the purpose and need identified in the NOI and informed by the objectives listed in Section II of the NOI. Here, as discussed above, the purpose and need involve increasing operational flexibility of the CVP and SWP in order to maximize water deliveries. To this end, Reclamation must develop alternatives that modify the disproportionate regulatory burden currently placed on CVP and SWP operations. Further, Reclamation should also ensure that the alternatives avoid placing the burden of this regulatory responsibility on the Water Authority's member agencies, who have historically borne the disproportional brunt of the law and regulation. Establishing this needed balance can be achieved by considering actions not related to CVP or SWP operations that address the myriad of physical, chemical, and biological changes that are not the caused by CVP or SWP operations. The *Recovery Plan for Sacramento River winter-run Chinook salmon, Central Valley spring-run Chinook salmon, and Central Valley steelhead* identifies more than seventy different stressors (factors that limit abundance) of winter-run Chinook salmon. *See* Attachment A to Threats Assessment, a copy of which is attached hereto. Many of the limiting factors identified are unrelated to the CVP or SWP, in particular the conveyance of CVP water through the Delta for the benefit of the Water Authority's member agencies.

B. Issues Related to Development and Implementation of the Proposed Action

The NOI identifies the proposed action as "potential modifications to the continued long-term operation of the CVP . . . in a coordinated manner with the SWP." 82 Fed. Reg. at 61790. The NOI explains that reasonable alternatives to the proposed action may include a combination of:

- Operations in coordination with new or proposed facilities to increase water supply and marketable power generation
  - Actions that increase storage capacity upstream of the Delta for the CVP
  - Actions that increase storage capacity south of the Delta
  - Actions that increase export capabilities through the Delta
  - Actions to generate additional water or that improve and optimize the utilization of water such as desalinization, water conservation, or water reuse

- Modified operations of the CVP and SWP with and without new or proposed facilities including possible requests to modify environmental and regulatory requirements, and sharing of water and responsibilities in the Delta
- Habitat restoration and ecosystem improvement projects intended to increase fish populations which would be factored into the regulatory process
- Modification to existing state and federal facilities to reduce impacts to listed species

82 Fed. Reg. at 61790. The Water Authority and Westlands agree that the listed factors are relevant to the identification of reasonable alternatives and emphasize that, as part of the factors listed above, Reclamation must consider changes to how the CVP and SWP share responsibilities under the Coordinated Operation Agreement between the federal government and the State of California (authorized by Pub. L. 99-546).

In addition, in order to help ensure consistency with the purpose and need, Reclamation, when analyzing each of the alternatives in the programmatic EIS, should:

- Identify, or, if that is not possible, present a hypothesis, for the causal link between operations of the CVP and SWP and each effect on the human environment;
- Identify, or, if that is not possible, present a hypothesis, for the causal link between non-CVP or SWP factors that limit abundance and the effect of each on the human environment;
- When presenting effects, describe them in terms of magnitude and/or population level; and
- Disclose limitations and uncertainties of the science.

This identification and disclosure of limitations and uncertainties for each causal link and effect is crucial. "When [Reclamation] is evaluating reasonably foreseeable significant adverse effects on the human environment in an [EIS] and there is incomplete or unavailable information," NEPA requires Reclamation to "always make clear that such information is lacking." 40 C.F.R. § 1502.22.

Conclusion

For the reasons explained above, the NOI represents an important step towards restoring Reclamation's ability to operate the CVP in a sustainable manner and for the multiple purposes

authorized by Congress. The Water Authority and Westlands thank Reclamation for issuing the NOI and for its consideration of these comments. The Water Authority and Westlands look forward to working with Reclamation as it develops the programmatic EIS.

Regards,

Jon D. Rubin, Interim Executive Director
and General Counsel
San Luis & Delta-Mendota Water Authority

Thomas W. Birmingham, General Manager
Westlands Water District

cc: Austin Ewell, Deputy Assistant Secretary for Water and Science
Brenda Burman, Commissioner
David Murillo, Mid-Pacific Regional Director
Federico Barajas, Deputy Regional Director, Mid-Pacific Region

Attachment 1

The Water Authority, a joint powers authority established under California's Joint Exercise of Powers Act (Cal. Gov. Code, § 6500 et seq.), is comprised of twenty-eight member agencies, twenty-six of which hold contractual rights to water from the federal Central Valley Project ("CVP"). SLDMWA member agencies hold total contractual entitlements from the CVP for approximately 3.3 million acre-feet of water per year. Approximately 2.8 million acre-feet per year are contracted for delivery to approximately 1.2 million acres of agricultural lands within areas of San Joaquin, Stanislaus, Merced, Fresno, Kings, San Benito, and Santa Clara Counties. Approximately 150,000 to 200,000 acre-feet per year are contracted for municipal and industrial uses by almost 2 million people within the service areas, including the City of Tracy and urban areas within Santa Clear County, such as Silicon Valley. The remaining amount, approximately 250,000 acre-feet per year, is delivered to more than 90,000 acres of managed wetlands and wildlife refuges for habitat enhancement and restoration activities within the largest continuous wetland remaining in the western United States.

The member agencies are: Banta-Carbona Irrigation District, Broadview Water District, Byron Bethany Irrigation District (CVPSA), Central California Irrigation District, City of Tracy, Columbia Canal Company (a Friend), Del Puerto Water District, Eagle Field Water District, Firebaugh Canal Water District, Fresno Slough Water District, Grassland Water District, Henry Miller Reclamation District #2131, James Irrigation District, Laguna Water District, Mercy Springs Water District, Oro Loma Water District, Pacheco Water District, Panoche Water District, Patterson Irrigation District, Pleasant Valley Water District, Reclamation District 1606, San Benito County Water District, San Luis Water District, Santa Clara Valley Water District, Tranquillity Irrigation District, Turner Island Water District, West Side Irrigation District, West Stanislaus Irrigation District, and Westlands Water District.

Winter-run Chinook Salmon Stressor Matrix

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	Number of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Sacramento River	1	Adult Immigration and holding	0.1	Passage Impediments/Barriers	0.425	Keswick/Shasta Dam	0.650	2.763	6	16.58	VH
Sacramento River	1	Spawning	0.325	Barrier	0.350	Keswick/Shasta Dam	1.000	11.375	1	11.38	VH
Sacramento River	1	Embryo Incubation	0.25	Flow Conditions	0.250	Flow Fluctuations in upper Sacramento River	1.000	6.250	1.00	6.25	VH
Sacramento River	1	Juvenile Rearing and Outmigration	0.325	Loss of Natural Morphologic Function	0.150	Loss of Natural Morphologic Function in the Delta	0.300	1.463	4	5.85	VH
Sacramento River	1	Juvenile Rearing and Outmigration	0.325	Loss of Natural Morphologic Function	0.150	Loss of Natural Morphologic Function in the lower Sacramento River	0.300	1.463	4	5.85	VH
Sacramento River	1	Juvenile Rearing and Outmigration	0.325	Loss of Riparian Habitat and Instream Cover	0.125	Loss of Riparian Habitat and Instream Cover in the Delta	0.350	1.422	4	5.69	VH
Sacramento River	1	Juvenile Rearing and Outmigration	0.325	Loss of Riparian Habitat and Instream Cover	0.125	Loss of Riparian Habitat and Instream Cover in the lower Sacramento River	0.350	1.422	4	5.69	VH
Sacramento River	1	Juvenile Rearing and Outmigration	0.325	Predation	0.150	Predation in the Delta	0.225	1.097	5	5.48	VH
Sacramento River	1	Juvenile Rearing and Outmigration	0.325	Predation	0.150	Predation in the lower Sacramento River	0.225	1.097	5	5.48	VH
Sacramento River	1	Juvenile Rearing and Outmigration	0.325	Predation	0.150	Predation in the middle Sacramento River with emphasis on anthropogenically-created predation opportunities at GCID, RBDD and other structures	0.225	1.097	5	5.48	VH
Sacramento River	1	Juvenile Rearing and Outmigration	0.325	Predation	0.150	Predation in the upper Sacramento River with emphasis on anthropogenically-created predation opportunities at ACID and other structures	0.225	1.097	5	5.48	VH
Sacramento River	1	Juvenile Rearing and Outmigration	0.325	Flow Conditions	0.125	Changes in Delta Hydrology	0.250	1.016	5	5.08	VH
Sacramento River	1	Juvenile Rearing and Outmigration	0.325	Flow Conditions	0.125	Diversion into Central Delta	0.250	1.016	5	5.08	VH
Sacramento River	1	Embryo Incubation	0.25	Short-term Inwater Construction	0.200	Sedimentation, turbidity, acoustic effects, hazardous spills, physical disturbance	1.000	5.000	1.00	5.00	VH
Sacramento River	1	Embryo Incubation	0.25	Water Quality	0.200	Water Pollution in upper Sacramento River	1.000	5.000	1.00	5.00	VH
Sacramento River	1	Embryo Incubation	0.25	Water Temperature	0.200	Water Temperature in upper Sacramento River	1.000	5.000	1.00	5.00	VH
Sacramento River	1	Juvenile Rearing and Outmigration	0.325	Loss of Natural Morphologic Function	0.150	Loss of Natural Morphologic Function in the upper Sacramento River	0.250	1.219	4	4.88	VH
Sacramento River	1	Spawning	0.325	Spawning Habitat Availability	0.150	Habitat Suitability in in upper Sacramento River	1.000	4.875	1	4.88	VH
Sacramento River	1	Spawning	0.325	Water Temperature	0.150	Upper Sacramento River	1.000	4.875	1	4.88	VH
Sacramento River	1	Adult Immigration and holding	0.1	Harvest/Angling Impacts	0.100	Ocean	0.700	0.700	6	4.20	VH

Attachment A to Threats Assessment
(http://www.westcoast.fisheries.noaa.gov/publications/recovery_planning/salmon_steelhead/domains/california_central_valley/attachment_a_to_appendix_b_w-r_chinook_stressor_matrix_7-10-2014.pdf)

Winter-run Chinook Salmon Stressor Matrix

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	Number of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Sacramento River	1	Juvenile Rearing and Outmigration	0.325	Flow Conditions	0.125	Flow Dependent Habitat Availability in the lower Sacramento River	0.200	0.813	5	4.06	VH
Sacramento River	1	Juvenile Rearing and Outmigration	0.325	Entrainment	0.075	Individual Diversions in the Delta	0.225	0.548	7	3.84	VH
Sacramento River	1	Juvenile Rearing and Outmigration	0.325	Entrainment	0.075	Jones and Banks Pumping Plants	0.225	0.548	7	3.84	VH
Sacramento River	1	Adult Immigration and holding	0.1	Passage Impediments/Barriers	0.425	Red Bluff Diversion Dam	0.150	0.638	6	3.83	VH
Sacramento River	1	Embryo Incubation	0.25	Harvest/Angling Impacts	0.150	Redd disturbance in upper Sacramento River	1.000	3.750	1.00	3.75	H
Sacramento River	1	Adult Immigration and holding	0.1	Flow Conditions	0.200	Low Flows - attraction, migratory cues AND Flood Flows - non-natal area attraction in Lower Sacramento River	0.600	1.200	3	3.60	H
Sacramento River	1	Juvenile Rearing and Outmigration	0.325	Loss of Floodplain Habitat	0.075	Loss of Floodplain Habitat in the Delta	0.350	0.853	4	3.41	H
Sacramento River	1	Spawning	0.325	Flow Conditions	0.100	Flow Fluctuations in upper Sacramento River	1.000	3.250	1	3.25	H
Sacramento River	1	Juvenile Rearing and Outmigration	0.325	Loss of Riparian Habitat and Instream Cover	0.125	Loss of Riparian Habitat and Instream Cover in the upper Sacramento River	0.200	0.813	4	3.25	H
Sacramento River	1	Spawning	0.325	Physical Habitat Alteration	0.100	Limited Instream Gravel Supply in upper Sacramento River	1.000	3.250	1	3.25	H
Sacramento River	1	Spawning	0.325	Short-term Inwater Construction	0.100	Sedimentation, turbidity, acoustic effects, hazardous spills in upper Sacramento River	1.000	3.250	1	3.25	H
Sacramento River	1	Juvenile Rearing and Outmigration	0.325	Loss of Natural Morphologic Function	0.150	Loss of Natural Morphologic Function in the middle Sacramento River	0.150	0.731	4	2.93	H
Sacramento River	1	Adult Immigration and holding	0.1	Short-term Inwater Construction	0.150	Sedimentation, turbidity, acoustic effects, hazardous spills in the upper Sacramento River	0.350	0.525	5	2.63	H
Sacramento River	1	Juvenile Rearing and Outmigration	0.325	Water Temperature	0.050	Middle Sacramento River	0.400	0.650	4	2.60	H
Sacramento River	1	Juvenile Rearing and Outmigration	0.325	Entrainment	0.075	Individual Diversions in the lower Sacramento River	0.150	0.366	7	2.56	H
Sacramento River	1	Juvenile Rearing and Outmigration	0.325	Entrainment	0.075	Individual Diversions in the middle Sacramento River	0.150	0.366	7	2.56	H
Sacramento River	1	Juvenile Rearing and Outmigration	0.325	Entrainment	0.075	Individual Diversions in the upper Sacramento River	0.150	0.366	7	2.56	H
Sacramento River	1	Juvenile Rearing and Outmigration	0.325	Flow Conditions	0.125	Flow Dependent Habitat Availability in the middle Sacramento River	0.125	0.508	5	2.54	H

Winter-run Chinook Salmon Stressor Matrix

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	Number of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Sacramento River	1	Juvenile Rearing and Outmigration	0.325	Flow Conditions	0.125	Flow Dependent Habitat Availability in the upper Sacramento River	0.125	0.508	5	2.54	H
Sacramento River	1	Juvenile Rearing and Outmigration	0.325	Predation	0.150	Predation in the Bay	0.100	0.488	5	2.44	H
Sacramento River	1	Juvenile Rearing and Outmigration	0.325	Loss of Floodplain Habitat	0.075	Loss of Floodplain Habitat in the middle Sacramento River	0.250	0.609	4	2.44	H
Sacramento River	1	Juvenile Rearing and Outmigration	0.325	Loss of Floodplain Habitat	0.075	Loss of Floodplain Habitat in the upper Sacramento River	0.250	0.609	4	2.44	H
Sacramento River	1	Juvenile Rearing and Outmigration	0.325	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Delta	0.300	0.488	5	2.44	H
Sacramento River	1	Juvenile Rearing and Outmigration	0.325	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the lower Sacramento River	0.300	0.488	5	2.44	H
Sacramento River	1	Juvenile Rearing and Outmigration	0.325	Invasive species/Food Web Disruption	0.050	Asian clam, A. aspera, Microcystis, water hyacinth etc. in the Delta	0.700	1.138	2	2.28	H
Sacramento River	1	Juvenile Rearing and Outmigration	0.325	Loss of Tidal Marsh Habitat	0.050	Loss of Tidal Marsh Habitat in the Delta	0.600	0.975	2	1.95	H
Sacramento River	1	Juvenile Rearing and Outmigration	0.325	Water Temperature	0.050	Lower Sacramento River	0.300	0.488	4	1.95	H
Sacramento River	1	Spawning	0.325	Harvest/Angling Impacts	0.050	Upper Sacramento River	1.000	1.625	1	1.63	H
Sacramento River	1	Juvenile Rearing and Outmigration	0.325	Loss of Riparian Habitat and Instream Cover	0.125	Loss of Riparian Habitat and Instream Cover in the middle Sacramento River	0.100	0.406	4	1.63	H
Sacramento River	1	Juvenile Rearing and Outmigration	0.325	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Bays	0.200	0.325	5	1.63	H
Sacramento River	1	Juvenile Rearing and Outmigration	0.325	Water Quality	0.050	Ag, Urban in the lower Sacramento River	0.200	0.325	5	1.63	H
Sacramento River	1	Juvenile Rearing and Outmigration	0.325	Water Quality	0.050	Ag, Urban in the middle Sacramento River	0.200	0.325	5	1.63	H
Sacramento River	1	Juvenile Rearing and Outmigration	0.325	Water Quality	0.050	Ag, Urban, Heavy Metals in the Bays	0.200	0.325	5	1.63	H
Sacramento River	1	Juvenile Rearing and Outmigration	0.325	Water Quality	0.050	DO, Ag, Urban, Heavy Metals in th Delta	0.200	0.325	5	1.63	H
Sacramento River	1	Juvenile Rearing and Outmigration	0.325	Water Quality	0.050	Urban, Hedvy Metals in the upper Sacramento River	0.200	0.325	5	1.63	H
Sacramento River	1	Adult Immigration and holding	0.1	Water Temperature	0.100	Upper Sacramento River	0.400	0.400	4	1.60	M
Sacramento River	1	Adult Immigration and holding	0.1	Short-term Inwater Construction	0.150	Sedimentation, turbidity, acoustic effects, hazardous spills in the Delta	0.200	0.300	5	1.50	M
Sacramento River	1	Adult Immigration and holding	0.1	Short-term Inwater Construction	0.150	Sedimentation, turbidity, acoustic effects, hazardous spills in the lower Sacramento River	0.200	0.300	5	1.50	M

Winter-run Chinook Salmon Stressor Matrix

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	Number of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Sacramento River	1	Juvenile Rearing and Outmigration	0.325	Loss of Floodplain Habitat	0.075	Loss of Floodplain Habitat in the lower Sacramento River	0.150	0.366	4	1.46	M
Sacramento River	1	Juvenile Rearing and Outmigration	0.325	Hatchery Effects	0.025	Competition, Predation in the upper Sacramento River	0.350	0.284	5	1.42	M
Sacramento River	1	Juvenile Rearing and Outmigration	0.325	Loss of Tidal Marsh Habitat	0.050	Loss of Tidal Marsh Habitat in the Bays	0.400	0.650	2	1.30	M
Sacramento River	1	Juvenile Rearing and Outmigration	0.325	Water Temperature	0.050	Delta	0.200	0.325	4	1.30	M
Sacramento River	1	Adult Immigration and holding	0.1	Passage Impediments/Barriers	0.425	Sacramento Deep Water Ship Channel	0.050	0.213	6	1.28	M
Sacramento River	1	Adult Immigration and holding	0.1	Passage Impediments/Barriers	0.425	Suisun Marsh Salinity Control Structure	0.050	0.213	6	1.28	M
Sacramento River	1	Adult Immigration and holding	0.1	Passage Impediments/Barriers	0.425	Sutter Bypass - Tisdale Weir	0.050	0.213	6	1.28	M
Sacramento River	1	Adult Immigration and holding	0.1	Passage Impediments/Barriers	0.425	Yolo Bypass-Freemont Weir	0.050	0.213	6	1.28	M
Sacramento River	1	Juvenile Rearing and Outmigration	0.325	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the upper Sacramento River	0.150	0.244	5	1.22	M
Sacramento River	1	Juvenile Rearing and Outmigration	0.325	Upstream Passage Impediments/Barriers	0.625	Tributary Barriers	0.500	0.406	3	1.22	M
Sacramento River	1	Adult Immigration and holding	0.1	Flow Conditions	0.200	Low Flows - attraction, migratory cues in Middle Sacramento River	0.200	0.400	3	1.20	M
Sacramento River	1	Adult Immigration and holding	0.1	Flow Conditions	0.200	Low Flows - attraction, migratory cues in Upper Sacramento River	0.200	0.400	3	1.20	M
Sacramento River	1	Adult Immigration and holding	0.1	Harvest/Angling Impacts	0.100	Upper Sacramento River	0.200	0.200	6	1.20	M
Sacramento River	1	Adult Immigration and holding	0.1	Water Temperature	0.100	Middle Sacramento River	0.300	0.300	4	1.20	M
Sacramento River	1	Adult Immigration and holding	0.1	Short-term Inwater Construction	0.150	Sedimentation, turbidity, acoustic effects, hazardous spills in the Bays	0.150	0.225	5	1.13	M
Sacramento River	1	Juvenile Rearing and Outmigration	0.325	Flow Conditions	0.125	Reverse Flow Conditions in the Delta	0.050	0.203	5	1.02	M
Sacramento River	1	Juvenile Rearing and Outmigration	0.325	Hatchery Effects	0.025	Competition, Predation in the middle Sacramento River	0.250	0.203	5	1.02	M
Sacramento River	1	Juvenile Rearing and Outmigration	0.325	Upstream Passage Impediments/Barriers	0.025	Keswick Dam	0.400	0.325	3	0.98	M
Sacramento River	1	Juvenile Rearing and Outmigration	0.325	Invasive species/Food Web Disruption	0.050	Asian clam, A. aspera, Microcystis, water hyacinth etc. in the Bays	0.300	0.488	2	0.98	M
Sacramento River	1	Juvenile Rearing and Outmigration	0.325	Entrainment	0.075	Contra Costa Power Plant	0.050	0.122	7	0.85	M
Sacramento River	1	Juvenile Rearing and Outmigration	0.325	Entrainment	0.075	Pittsburg Power Plant	0.050	0.122	7	0.85	M

Winter-run Chinook Salmon Stressor Matrix

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	Number of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Sacramento River	1	Juvenile Rearing and Outmigration	0.325	Hatchery Effects	0.025	Competition, Predation in the lower Sacramento River	0.200	0.163	5	0.81	M
Sacramento River	1	Adult Immigration and holding	0.1	Water Temperature	0.100	Lower Sacramento River	0.200	0.200	4	0.80	L
Sacramento River	1	Adult Immigration and holding	0.1	Short-term Inwater Construction	0.150	Sedimentation, turbidity, acoustic effects, hazardous spills in the middle Sacramento River	0.100	0.150	5	0.75	L
Sacramento River	1	Juvenile Rearing and Outmigration	0.325	Water Temperature	0.050	Upper Sacramento River	0.100	0.163	4	0.65	L
Sacramento River	1	Juvenile Rearing and Outmigration	0.325	Hatchery Effects	0.025	Competition, Predation in the Delta	0.150	0.122	5	0.61	L
Sacramento River	1	Juvenile Rearing and Outmigration	0.325	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the middle Sacramento River	0.050	0.081	5	0.41	L
Sacramento River	1	Adult Immigration and holding	0.1	Water Quality	0.025	Urban, Heavy Metals in the upper Sacramento River	0.400	0.100	4	0.40	L
Sacramento River	1	Adult Immigration and holding	0.1	Water Temperature	0.100	Delta	0.100	0.100	4	0.40	L
Sacramento River	1	Juvenile Rearing and Outmigration	0.325	Upstream Passage Impediments/Barriers	0.025	ACID Dam	0.100	0.081	3	0.24	L
Sacramento River	1	Juvenile Rearing and Outmigration	0.325	Hatchery Effects	0.025	Competition, Predation in the Bays	0.050	0.041	5	0.20	L
Sacramento River	1	Adult Immigration and holding	0.1	Water Quality	0.025	Ag, Urban in the lower Sacramento River	0.200	0.050	4	0.20	L
Sacramento River	1	Adult Immigration and holding	0.1	Water Quality	0.025	Ag, Urban in the middle Sacramento River	0.200	0.050	4	0.20	L
Sacramento River	1	Adult Immigration and holding	0.1	Water Quality	0.025	DO, Ag, Urban, Heavy Metals in th Delta	0.200	0.050	4	0.20	L
Sacramento River	1	Adult Immigration and holding	0.1	Harvest/Angling Impacts	0.100	Bays	0.025	0.025	6	0.15	L
Sacramento River	1	Adult Immigration and holding	0.1	Harvest/Angling Impacts	0.100	Delta	0.025	0.025	6	0.15	L
Sacramento River	1	Adult Immigration and holding	0.1	Harvest/Angling Impacts	0.100	Lower Sacramento River	0.025	0.025	6	0.15	L
Sacramento River	1	Adult Immigration and holding	0.1	Harvest/Angling Impacts	0.100	Middle Sacramento River	0.025	0.025	6	0.15	L
Sacramento River	1	Adult Immigration and holding	0.1	Passage Impediments/Barriers	0.425	ACID Dam	0.000	0.000	6	0.00	L

February 1, 2018

Delivered via regular U.S. mail and email (kharrison@usbr.gov)

Ms. Katrina Harrison
Project Manager
Bureau of Reclamation
Bay-Delta Office
801 I Street, Suite 140
Sacramento, CA 95814-2536

Subject: Notice of Intent to prepare a Draft Environmental Impact Statement, revisions to the Coordinated Long-Term Operation of the Central Valley Project and State Water Project, and related facilities

Dear Ms. Harrison:

The State Water Contractors (SWC)[1] appreciate this opportunity to provide scoping comments on the December 29, 2017, Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS) on the coordinated Long-Term Operation (LTO) of the Central Valley Project (CVP) and State Water Project (SWP), and related facilities.

The NOI initiated Reclamation's National Environmental Policy Act (NEPA) scoping process. As explained in the NEPA regulations, scoping is a public process that includes the determination of the scope of the project as well as significant issues to be analyzed. (40 CFR §1501.7.) This is the focus of the SWC's comments.

The SWC support an action that is limited to the reinitiation of consultation on continuing SWP-CVP project operations. The LTO process originated with the Bureau of Reclamation (Reclamation) and the Department of Water Resources' (DWR) making requests for the reinitiation of consultation on continuing project operations. However, the LTO described in the NOI is broader than just the consultation on continuing operations, instead being a comprehensive project for new water and energy supplies. While a more comprehensive water and energy supply project is a worthwhile idea, it is something that should be considered independent of the ongoing consultation on project operations.

[1] The State Water Contractors submit this letter on its behalf and on behalf of all of its member agencies, except Santa Clara Valley Water District.

DIRECTORS

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1. The purpose and need statement should be more specific as to the limited scope of the proposed project.

The NOI provides the broadest description of a water and energy supply project. The purpose and need statement as contained in the NOI should be revised to be more specific, as we are concerned that the current version is too broad and does not adequately inform the development of alternatives.

The purpose and need statement defines the project that the agency seeks to approve. (See, *Angoon v. Hodel*, 803 F.2d. 1016, 1021 (9th Cir. 1986) [When the purpose is to accomplish one thing, it makes no sense to consider the alternative ways by which another thing is achieved]; CFR §1502.13.) Federal agencies enjoy "considerable discretion" in defining the purpose and need of a project. (*Friends of Southeast's Future v. Morrison*, 153 F.3d. 1059, 1066 (9th Cir. 1998.) The NEPA regulations specify that the EIS shall document a reasonable number and range of alternatives which would satisfy the purpose and need. (*Laguna Greenbelt v. United States Department of Transportation*, 42 F.3d. 517, 524 (9th Cir. 1994) [The range of alternatives that must be considered need not extend beyond those reasonably related to the purposes of the project.].)

For the continuing operation of the existing SWP-CVP facilities, the SWC propose the following project purpose:

- Operation of the existing SWP-CVP project facilities to optimize flexibility of continuing project operations to maximize water supplies until the California WaterFix becomes operational; and,
- Operation of the existing SWP-CVP project facilities to avoid jeopardy and adverse modification of critical habitat of aquatic of species listed under the state and federal endangered species acts, using the best scientific and commercial information available.

The SWC do not support the inclusion of water right permit conditions and other agreements in the purpose statement, as is currently stated under the NOI's "why we are taking this action" heading. Similarly, the SWC do not support the inclusion of infrastructure changes and power generation projects in the NOI's purpose and need statement for continuing project operations.

2. The list of physical facilities that could be considered in the consultation for continuing project operations should be narrowed.

The SWC request that Reclamation distinguish the consultation process for continuing operations from a larger process for developing water and energy supply projects. There are many projects that could be pursued, but the desire to complete environmental documentation for these projects should be separated from the need to complete a near-term consultation for continuing operations. These water and energy supply projects should be evaluated in a parallel process. These projects could tier from the programmatic document proposed by Reclamation in Track 2; [2] but on a path

[2] Reclamation is proposing a three track LTO process: Track 1 is near-term regulatory change; Track 2 is a programmatic EIS; and Track 3 is a project-level consultation. The NOI states that it relates to the programmatic document, which is Track 2.

separate from the consultation on continuing project operations. The project level consultation on continuing operations could occur solely in Track 3 as a programmatic document is not legally required.[3]

The SWC are concerned that by expanding the consultation on continuing project operations to include numerous yet to be identified physical water and power projects, the water contractors' mitigation exposure could be expanded significantly. This is a particular concern as the NOI does not appear limited to physical improvements of SWP or CVP facilities in the Delta and its watershed. The CVP and SWP water contractors should not be responsible for mitigating projects that are not SWP-CVP facilities; and the consultation on continuing project operations should not be tied to large construction projects, the inclusion of which could complicate the process and increase the mitigation exposure.

Specifically, the SWC request that California WaterFix, which is a proposed SWP facility, not be included in the modeling of ongoing operations. California WaterFix mitigation has been defined by the recently completed California WaterFix environmental impact statement and biological opinions; these future mitigation obligations should not be added to the mitigation for the near-term operation of the SWP-CVP.

For analytical purposes, the California WaterFix should be broken into two components (construction and future operations) and analyzed accordingly. As California WaterFix has been approved by the State of California, and Reclamation is seeking to amend its Delta point of diversion to accommodate joint operations, California WaterFix construction should be included in the baseline as construction is anticipated to occur during the next 10+ years. This analysis of baseline construction would be qualitative; and the impacts are not anticipated to be significant as extensive mitigation has already been incorporated.

The operation of the proposed California WaterFix facilities should <u>not</u> be included in the operational modeling of continuing project operations. The ESA section 7 consultation for California WaterFix is going to be reinitiated in the future prior to operation of the project and after early adaptive management, but before the operation of the new facilities.[4] Therefore, no additional benefits or information can be gained by wrapping future proposed California WaterFix operations into the consultation on continuing operations. Conversely, there are risks if California WaterFix were included in the consultation on continuing operations, as additional mitigation for potential future operational impacts could be imposed in the near-term. Moreover, the mitigation that could be imposed is based on a California WaterFix operation that may or may not occur, which further supports excluding it from the modeling. Since the future operation of California WaterFix is going to be the subject of adaptive management over the next 10+ years, which could result in refinements to the proposed operation, there is no benefit or informational value to reopening the California WaterFix consultation at this time.

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[3] Reclamation should consider whether Tier 2 should be a programmatic environmental impact statement. An alternative Tier 2 process could be a feasibility study of new water and energy projects. The benefit of a feasibility study would be that a much larger range of projects could be considered. Realistically, a programmatic EIS can only fully evaluate a handful of projects.

[4] The decision regarding which future physical facilities are included in the project description and baseline requires consideration of the length of the planning horizon, which is addressed in a later section of this letter.

3. The planning horizon should cover the near-term until California WaterFix becomes operational.

The SWC request that Reclamation seek a biological opinion that covers the time until California WaterFix becomes operational. This timeline supports the exclusion of California WaterFix from the modeling of ongoing operations. It also avoids the concerns identified immediately above regarding redundant, additive, and potentially conflicting consultations on California WaterFix.

4. The scope of the consultation should be narrowed to exclude future regulatory changes beyond review of the RPAs.

The SWC are concerned that a change to a federal regulation could have a redirected impact on the SWP. For example, as was recently observed in the Water Infrastructure Improvement for the Nation Act (WIIN Act), when changes are made to the implementation of the federal ESA; the SWP could be injured. The SWP is regulated under the California ESA; and as a result, a change in the federal regulatory framework could shift the entire regulatory burden to the SWP. Another example of potentially redirected impacts is the suggestion that the LTO would evaluate changes in the sharing of regulatory obligations under the Coordinated Operations Agreement (COA). The NOI includes in its list of potential alternatives, "…Modified operations of the CVP and SWP…to modify environmental and regulatory requirements, and sharing of water and responsibilities in the Delta…].) Since the COA discussions are ongoing, the SWC object to any inclusion of different sharing formulas in the LTO process. The LTO process and the COA process should be kept separate. The SWC request that Reclamation coordinate with the DWR and the SWC in any proposal to change existing regulations or law.

Undoubtedly, there are regulatory changes that both Reclamation and DWR, and their water contractors, could support, for example, changes to the existing reasonable and prudent alternatives (RPAs). Proposed alternative RPAs would be an appropriate topic for the consultation on continuing project operations. Regulatory changes that are outside of the RPAs should be considered as part of a parallel process. Contract extension could also be considered in a related but parallel process, potentially tiering from Reclamation's programmatic document.

5. DWR and CFW need to be included in the consultation process.

The SWC strongly urge Reclamation to closely coordinate with DWR to develop and select a set of operations that are mutually agreeable to both the state and federal government. The manner in which SWP and CVP operations continue to be coordinated has to be a joint decision by both Reclamation and DWR.

In its NOI, Reclamation identified a number of cooperating agencies but it did not specifically identify California Department of Fish and Wildlife (DFW). The SWC recommend that DFW be included as a cooperating agency as DWR will be seeking a consistency determination and/or Fish and Game Code section 2081 permit finding that compliance with the biological opinions for continuing operations also satisfy California Endangered Species Act (CESA) requirements. Historically, DFW has been included in the SWP-CVP consultations and this close coordination with the state should continue.

6. The "project area" should be limited to the Delta and its watershed consistent with the current biological assessment on coordinated SWP-CVP operations.

The SWC request that Reclamation select a project area that is appropriate for an analysis of continuing project operations. The project area as defined in the NOI is inappropriately broad for the purposes of consultation regarding continuing operations, as it includes proposed service areas, areas outside of the Delta watershed, and new projects. The SWC ask that Reclamation adopt a project area consistent with the action area described in the current biological assessment for the Operations Criteria and Plan (OCAP). (See, OCAP Biological Assessment at p. 1-20.)

7. The scope of the proposed action for ongoing operations should be narrowly tailored.

While the SWC appreciate Reclamation's timeline where all three tracks are completed in 2-3 years, we are concerned that Reclamation's plan may be too ambitious. The SWC are very interested in moving the consultation on continuing operations forward; and we are concerned that linking our consultation to a large number of water supply and energy actions throughout California would delay the consultation. By splitting the consultation on continuing operations from the larger assessment of water and energy supply projects, the consultation on continuing project operations could begin immediately and run concurrently with the larger project. The SWC request that Reclamation consider this refinement of its scoping of the three LTO Tracks.

The SWC look forward to participating along with Reclamation and DWR on the LTO and on the consultation on continuing project operations.

Sincerely,

Jennifer Pierre
General Manager

THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

Office of the General Manager

RECEIVED
FEB 7 2018

January 31, 2018

Katrina Harrison, Project Manager
Bureau of Reclamation
Bay-Delta Office
801 I Street, Suite 140
Sacramento, CA 95814-2536

Re: Notice of Intent to prepare a Draft Environmental Impact Statement, revisions to the Coordinated Long-Term Operation of the Central Valley Project and State Water Project, and related facilities

Dear Ms. Harrison:

The Metropolitan Water District of Southern California ("Metropolitan") appreciates this opportunity to provide scoping comments on the December 29, 2017, Notice of Intent ("NOI") to prepare an Environmental Impact Statement ("EIS") on the coordinated Long-Term Operation ("LTO") of the Central Valley Project ("CVP") and State Water Project ("SWP"), and related facilities.

Metropolitan appreciates the time and effort that Reclamation has invested in development of the LTO. At the same time, we want to stress that it is critically important that Reclamation closely coordinate with the Department of Water Resources ("DWR"). As the SWP and CVP are operated in a coordinated manner, it is important that both Reclamation and DWR make decisions regarding how the SWP-CVP will be operated in the future. The coordination between Reclamation and DWR should extend to organizing the consultation process as well as the development of the biological assessment and environmental review documents. As the SWP is also regulated under the California Endangered Species Act ("CESA"), the California Department of Fish and Wildlife ("DFW") must also be part of the consultation process. The SWP is currently covered by a consistency determination issued by the DFW for all dual listed species and a Fish and Game Code section 2081 permit for Longfin Smelt. In order to facilitate permitting by DFW for continuing operations, Metropolitan requests that DFW be included in the LTO process.

The State Water Contractors ("SWC") have also provided scoping comments on the NOI and Metropolitan herein incorporates the SWC's scoping comments by reference. As discussed in detail in the SWC comments, Metropolitan is concerned about the proposed scope of the LTO as described in the NOI because a large number of water and energy projects, as well as regulatory

changes, could be incorporated into the consultation on continuing project operations. If the consultation on continuing operations were to be greatly expanded in this manner, the timeline for environmental review and consultation could easily take many years. While Metropolitan understands that Reclamation has laid out a timeline where the National Environmental Policy Act ("NEPA) process and the Endangered Species Act ("ESA") section 7 processes for all three tracks[1] would be completed in 2-3 years, the feasibility of such a schedule is uncertain. Metropolitan supports a narrowly focused project description, in part, because of concerns regarding the feasibility of completing review of a potentially expansive project such as that outlined in the NOI. Metropolitan is further concerned about Reclamation's apparent openness to including projects that may or may not be part of the SWP-CVP, and projects outside of the Bay-Delta watershed. The potential mitigation obligation resulting from a large scale water and power supply project could be quite large, which is a cause for concern.

Consistent with this position, Metropolitan supports a near-term timeline for the scope of consultation on continuing project operations. Metropolitan supports a biological opinion that covers the time until Cal Water Fix comes online. Since Cal Water Fix has just completed an ESA section 7 consultation; there is no value to including Cal Water Fix in another section 7 consultation at this time. Moreover, since there will be another section 7 consultation before Cal Water Fix comes online, there is no benefit to a biological opinion that goes 20+ years into the future as it will be replaced before that time.

While Metropolitan appreciates Reclamation's interest in investigating a large number of water and power projects, and in reviewing regulations to determine if the current regulatory framework could be improved, we are concerned about linking a potentially expansive range of projects to the consultation on continuing project operations. Therefore, we would support separating the larger investigation of water and power projects (including regulatory change) from the consultation on continuing project operations. Both reviews could occur concurrently so there would be no delay.

Metropolitan looks forward to continuing to participating along with Reclamation and DWR on the LTO and on the consultation for continuing project operations.

Very truly yours,

Jeff Kightlinger
General Manager

[1] Reclamation is proposing a three track LTO process. Track 1 is near-term regulatory change; Track 2 is a programmatic EIS; and Track 3 is a project level consultation. The NOI states that it relates to the programmatic document, which is Track 2.

SMUD®

ET&C 18-016
February 2, 2018

Katrina Harrison, Project Manager
United States Bureau of Reclamation, Mid-Pacific Region
Bay-Delta Office
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Sacramento, CA 95814-2536
Sent via email to: kharrison@usbr.gov

Subject: Comments on Notice of Intent to Prepare a Draft Environmental Impact Statement, Revisions to the Coordinated Long-Term Operation of the Central Valley Project and State Water Project and Related Facilities

Ms. Harrison:

The Sacramento Municipal Utility District (SMUD) appreciates the opportunity to review the Notice of intent to prepare a Draft Environmental Impact Statement, Revisions to the Coordinated Long-Term Operation of the Central Valley Project and State Water Project and Related Facilities.

The CVP is a multi-purpose, multi-reservoir singularly integrated project with water and power customers being the authorized beneficiaries. SMUD has a major financial interest in the prudent management of CVP facilities for the delivery of water and the generation of power. SMUD has significant concerns regarding policies and programs under consideration that will modify the operations, management and physical facilities of the CVP.

Since 1954 SMUD has been the largest Central Valley Project (CVP) Preference Power Customer. SMUD's payments for this resource include not only repayment obligations for CVP plant-in-service and operations and maintenance costs, but also payments into the Central Valley Project Improvement Act (CVPIA) Restoration Fund, which helps pay for dozens of projects intended to reduce and mitigate for environmental impacts from the CVP. Our investment into the CVP as a Preference Power Customer has been substantial, exceeding $318 million just since January 2005. SMUD is also a water service contractor in the American River Division with an annual entitlement of up to 30,000 acre-feet of water for municipal and industrial purposes.

SMUD supports the concept as stated in the Federal Register Notice that the EIS will evaluate the potential changes in laws, regulations and infrastructure that affect marketability of CVP power generation.

Although SMUD is also a water contractor our comments focus on the proposal's potential impacts to CVP power generation.

Issues that affect CVP Power Customers

Historically, CVP power has been a highly valuable resource for municipal customers. And because prices were competitive, the Federal government had the flexibility to impose additional costs on power customers, helping pay for the project as a whole, and for offsetting its impacts. The Reclamation Fund is a good example, with power customers having been required to pay a share in excess of their respective allocations for repayment of the CVP, despite statutory recognition in the CVP itself (Section 3407(d)(2)(A)) that mitigation and restoration payment made by [CVP] water and power users "shall, to the greatest degree practicable, be assessed in the same proportion," as water and power users' respective repayment allocations. Likewise, the CVPIA includes caps on other kinds of contractors' payments, but there are no such caps for power contractors. Now, unless changes in pricing and operations are implemented, the net price for CVP power could soon be above market rates for other kinds of low carbon and carbon free power sources, as it has already been in some recent years.

Over the past ten years, power customers have met repeatedly with Reclamation to address these concerns. In 2010, Reclamation released a draft report explaining Contractor Financial Obligations, Impacts, and Challenges. At that time, the price for CVP power was competitive with market power in California, and thus there was a low risk of power customers exiting power contracts. Today that is no longer the case. To ensure a long-term market for CVP power, it is imperative to establish a long term solution to address the fixed costs of CVP generation, mitigation costs, and reductions in CVP power output. Again, without substantial changes in pricing the power resource may soon be unaffordable for the CVP's historic customers.

CVP Power

The CVP is operated first for flood control, second for water supply and fish & wildlife mitigation, and thirdly, for power and fish & wildlife enhancement, water availability, operational requirements, and environmental needs. All these factors impact the timing and availability of energy production. CVP power generation oftentimes does not align with the customer needs and variable market conditions. We believe there are substantial opportunities to better align water releases with power needs, and those opportunities should be robustly pursued.

Power from the Central Valley Project is Highly Variable and Diminishing Product

Any hydropower generation reduction could have impacts upon the CVP power customers and Western Area Power Administration (WAPA), the federal agency that markets the federal power.

WAPA's customers have met with Reclamation's leadership to discuss the degradation of CVP generation due to administrative and operational decisions. While other Western regions deliver a firm energy amount, from both project resources and long-term purchases, CVP customers receive only the amount that CVP produces. Drought, environmental releases, and other operational requirements have reduced the power deliveries.

WAPA recovers all costs associated with the construction and operation of the CVP power function on a cost–of-service basis. However, that cost-of-service basis is above the hour day-ahead price established by the California Independent System Operator. Should additional regulatory and environmental costs be imposed upon WAPA's operations, the CVP power marketing function may no longer be financially viable.

CVP Generation varies in a Yearly, Seasonally and Hourly pattern

Since 2006, Western's base resource power deliveries ranged from a high of 5,763 gigawatt hours (GWh) in 2006 to a low of 1,731 GWh in 2015, with a 10-year average yielding 2,937 GWh. The period includes some of the driest hydrologic years on record, as well as 2006, one of the top five hydrologic years on record.

In addition to the variability in year-to-year CVP generation, the timing of generation and availability seasonally and day to day are important. Winter and spring generation is less valuable than summer; likewise afternoon generation is more valuable than in the morning and evening.

Nonetheless, proposals under the Delta Reform Act are considering moving generation to the spring and later in the year to meet Endangered Species obligations. Additionally, other proposals such as the Bay Delta Conservation Plan and the Water Fix Project are yet unevaluated but will are expected to modify the CVP power generation pattern and possibly the overall output of CVP generation.

If the market value of CVP power is diminished to achieve other purposes, however noble, the price paid for that power by customers must be reduced commensurately, otherwise it will simply no longer be reasonable to be a CVP power customer.

Drought / Climate Change

Operation of the CVP was impacted greatly during the recent drought. If long-term climate change predictions are accurate, the historical 82-year (1921-2003) CVP generation average of 4,600 GWh is less probable.

Market and Regulatory Factors

The influence of drought and environmental policy has dramatically affected the inability of water contractors to take water delivery and transfer water. When Reclamation's water contractors are faced with limited CVP water deliveries due to drought or other limitations, replacement water costs increase significantly because of low supply and high demand for irrigation, environmental water needs, as well as municipal and industrial requirements. All this has resulted in Reclamation's water, which is a cost-based product, becoming even more valuable in periods of drought.

However, the power market in California has evolved in a very different manner. As noted above, surplus generation, decreased load, low gas prices and negative market pricing have placed downward pressure on the California Independent Service Operator market prices.

The organized power market has created market prices that are often less than the price of CVP power. Today, prices are about $30 / MWh for heavy load.

Mandates for Renewables

In April 2011 Governor Brown required that all California retail sellers of energy including the WAPA customers provide 33 percent of their load with renewable energy by 2020. The Renewables Mandate has since increased to 50 percent by 2030.

Since CVP hydropower greater than 30 MW does not constitute renewable energy under State of California regulations and is not applicable to the power customers' Renewable Portfolio Standard, CVP power customers have had to seek alternative energy sources to meet this mandate.

The growing renewable generation market has created a surplus of energy resources and is a contributing factor to lower market prices.

Replacement Power / Access to Power on the Market

The net cost of CVP power increases when less energy is delivered to WAPA's customers, particularly considering that power customers' Restoration Fund payments increase proportionately to the reductions in water customers' payments that occur when water sales diminish. Power customers must then buy replacement

power to meet their load obligations. Power customers can buy replacement power on the spot market or plan to procure a long-term firming energy to hedge lost resources.

In years when CVP generation has been well-below average, some CVP power customers have developed relationships with other power producers for long-term supply through power purchase agreements. These have included access to less expensive market-priced power alternatives.

In 2015, the CVP power effective cost was $60.58 / MWh, or about $25 over the average market rate.

Risk Management

CVP generation is becoming very hard to predict. This unpredictability places a financial risk on power customers who must not only predict load requirements, but also replace CVP generation with long-term power purchases. The customers need CVP power deliveries to improve, or they must buy on higher priced spot market when additional resources are needed. Candidly, if other assets cost the same or less, but have significantly more certainty in terms of yield, CVP power is no longer a reasonable asset to invest in.

Additional Consequences Increase Costs to Power Customers

Fewer water deliveries in either dry or wet water years to agriculture customers creates less revenue to the CVP. By law, when there is less water sold to agricultural and M&I customers, CVP revenue requirements will shift to power customers. This shift increases power customers' obligations to CVP facilities and the CVPIA Restoration Fund.

Central Valley Project Operations / Consequences Reduce Generation Value

In summary, reoperation of the CVP, including increasing water releases to meet Endangered Species Act obligations and Delta outflow / water quality objectives, have had many impacts, including:

- Reduction in generation in summer and fall months and ability to meet critical peak load,
- Increased generation in spring when energy has less value,
- Lower reservoir levels in summer, creating less generation capacity; and
- Generation by-passes may be required in the summer and fall to meet river temperature requirements

The consequence of less hydropower generation during the summer peak demands period include: 1) loss of financial value, 2) inability to generate clean power during peak demand thus increasing California's reliance on out of state power and possibly less environmentally friendly alternatives, and 3) potential spring oversupply conditions causing negative price and power price volatility.

Future Costs of CVP power are affected by a variety of factors

Central Valley Improvement Act (CVPIA)

The CVPIA requires water and power contractors pay an average of an adjusted $30 million annually into the CVPIA Restoration Fund. The 2017 obligation is $1.128 billion.

Reclamation, in its annual appropriations request, includes the mandate that the full amount of restoration payments be collected. CVPIA specifies that if water deliveries do not generate sufficient revenue, then the balance of CVPIA costs are to be paid by power customers.

The CVPIA requires the Bureau of Reclamation to complete all listed Restoration Fund programs for certain fish, wildlife, and habitat mitigation. Once complete the Secretary of the Interior must reduce the water and power contractors' share to $15 million per year.

Of the 40 listed programs only 14 are shown as complete by the Bureau in their 2013 Annual Report.

Over the past eight years power charges combined with power's CVPIA Restoration Fund assessments, have pushed CVP power costs over market four times including 2015 when prices were nearly double alternatives. Limited 2015 water deliveries caused by critically dry conditions yielded only 13 percent CVPIA water contributions, leaving the remaining 87 percent, or $49.9 million, subject to power repayment.

Aid to Irrigation

By law, irrigators who meet inability to repay criteria may be relieved of their capital construction and restoration fund repayment obligation, then, that obligation is shifted to CVP power users for repayment. To date, CVP power customers have been assigned $54 million irrigation capital construction repayment through 2014. Based on historical assessments, we project that obligation to grow to $90 million by 2030. Lagging water repayment may further expose power to additional aid to irrigation costs.

Recommendations to be addressed in the EIS

Coordination with Other Science, Planning, and Regulatory Efforts

SMUD would like to see that any new operations plan addressed in this EIS will include recommendations that are consistent with requirements included in the 2008 USFWS and 2009 NMFS BiOps on the Long-Term Operational Criteria and Plan) for coordination of the CVP and SWP (USFWS BiOp and NMFS BiOp, respectively) and the 2009 CDFW Incidental Take Permit (ITP) for longfin smelt issued to DWR for the ongoing and long-term operation of the SWP (CDFW ITP).

SMUD would also like to see this EIS address how the Bureau of Reclamation and the Fish and Wildlife Service improve the implementation of the CVPIA.

Other Issues

When analyzing the impacts to the coordination of the Long-Term Operation of the Central Valley Project and State Water Project, the environmental analysis of the Sacramento and San Joaquin Systems needs to be combined with an analysis of the Delta. A consolidated analysis is necessary in order to accurately capture the magnitude of potentially proposed unimpaired flows to the CVP water and power customers.

SMUD hopes that the revisions to the Coordinated Long-Term Operation of the Central Valley Project and State Water Project and Related Facilities will synthesize and summarize the science intended to address the flow needs for fish and aquatic species in the Sacramento River and Bay-Delta. This should include addressing natural timing, distribution and variability of flows and recommending habitat improvements and a need to provide adequate flows for native and non-native fish species in the Sacramento River.

The EIS should analyze the potential effects of implementing the California WaterFix project, a renegotiated Coordinated Operations Agreement and meeting the proposed unimpaired flow criteria developed by the SWRCB for both the Sacramento and San Joaquin Rivers. The EIS should in particular address the impacts of the of the proposed unimpaired flow proposals on both the water availability and CVP power generation.

Another issue that needs to be addressed is what baseline will be used in the modeling effort, as the supply and delivery targets have been constantly in flux. Reclamation should consider using current operations scenarios, including compliance with biological opinions and court orders.

The EIS should consider the impacts on climate change of reduced overall generation and generation shifting to periods of lower power demand. If operations were better aligned with climate change goals, the CVP could help contribute to a solution for a global problem that impacts the very aquatic species CVP reoperations have been designed to benefit, but have not, in fact, contributed significantly to recovery.

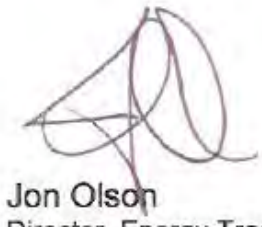
The EIS will require a significant public engagement process and discussion with the water and power contractors. This will provide a background for a dialogue amongst the managers, operators, scientists and stakeholders including the water and power community to understand timelines of actions and expected impacts to operation of the CVP.

The need for constructive, collaborative dialogue is necessary and consistent with the spirit of Reclamation's interaction with stakeholders who may be impacted by Reclamation's actions.

It is our hope that this EIS will assure that requirements and obligations that are related to the USFWS and NMFS BiOps or other regulatory requirements will avoid unnecessary redundancy and inefficiencies without affecting Reclamation's obligations to reasonably protect fish and wildlife.

Thank you for your time and consideration of SMUD's concerns. SMUD looks forward to a continued open, collaborative dialog with the Reclamation in regards to this effort.

Sincerely,



Jon Olson
Director, Energy Trading and Contracts
Sacramento Municipal Utility District

SMUD

Powering forward.
Together.

EAST BAY
MUNICIPAL UTILITY DISTRICT

ALEXANDER R. COATE
GENERAL MANAGER

January 26, 2018

Ms. Katrina Harrison
Project Manager
Bureau of Reclamation, Bay-Delta Office
801 I Street, Suite 140
Sacramento, CA 95814-2536

SUBJECT: Notice of Intent (NOI) to Prepare a Draft Environmental Impact Statement (EIS), Revisions to the Coordinated Long-Term Operation of the Central Valley Project (CVP) and State Water Project (SWP), and Related Facilities

Dear Ms. Harrison:

East Bay Municipal Utility District (EBMUD) appreciates the opportunity to comment on the scope of the subject EIS. Reclamation proposes to evaluate alternatives that maximize water deliveries and optimize marketable power generation of the CVP, in coordinated management with the SWP. EBMUD is concerned that changes in CVP operations may impact water supply reliability for EBMUD and potentially harm Mokelumne River fisheries.

EBMUD relies on CVP deliveries via the Freeport Regional Water Project (FRWP) as a critical component of its dry year water supply. The scope of the analyses for the project should include impacts on diversion reliability, frequency, water quality, and flow direction at the FRWP. Reclamation's objective to maximize water deliveries should not come at the expense of dry year water supply reliability. Having adequate water supply in dry years is more critical to most CVP contractors than "maximizing supplies" in wet and normal years, but leaving less in reserve for a dry year. Therefore, it is important that carryover storage in Shasta and Folsom Reservoirs remains an important consideration.

Long-term and short-term water transfers via the FRWP should be included in the scope of the analyses. Water transfers are an essential component of EBMUD's drought water supply portfolio, including short-term water transfers during multiple-year droughts, and long-term transfers with partners like Placer County Water Agency.

Proposed changes to water operations and to the existing regulatory framework have the potential to impact Mokelumne fisheries. EBMUD has invested heavily in ecosystem restoration projects and fish studies to ensure a healthy Mokelumne fish population. Changes to operations of the Delta Cross Channel (DCC) have the potential to affect pathway selection and straying rates of Mokelumne salmon. In particular, efforts to increase the times when the DCC is open would increase mortality of outmigrating juvenile salmon that would be pulled toward South of Delta pumps. Returning adult salmon will stray to other tributaries when DCC gates are open in the fall. In addition to impacting total returns, changed operations have the potential to impact EBMUD's ability to achieve the CVPIA doubling goal for the Mokelumne. In recent

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years, EBMUD has been working with Reclamation, NOAA fisheries, USFWS, and the California Department of Fish and Wildlife to keep the DCC closed as much as possible. As a result, straying rates were reduced and salmon thrived during the recent drought. Mokelumne salmon made up nearly 20% of the commercial salmon catch for a river that is about 2% of Delta inflow. In 2017, EBMUD measured the highest Mokelumne River salmon return on record dating back to 1940. During this period the DCC gates were closed 5 days per week beginning in mid-September. EBMUD is concerned that any effort to increase the frequency of DCC openings will derail the great progress that has been made with the Mokelumne fishery. The scope of the EIS should address potential impacts to this valuable resource.

Thank you for the opportunity to comment. Please contact Michael Tognolini at 510-287-0125 or michael.tognolini@ebmud.com if you require additional information.

Sincerely,

Alexander R. Coate
General Manager

February 1, 2018

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Project Manager
Bureau of Reclamation
Bay-Delta Office
801 I Street
Sacramento, CA 95814-2536

SUBJECT: Notice of Intent to Prepare Draft Environmental Impact Statement of the Central Valley Project and State Water Project

Dear Ms. Harrison:

The Northern California Power Agency (NCPA) is pleased to provide comments on the Notice of Intent to Prepare a Draft Environmental Impact Statement (EIS), Revisions to the Coordinated Long-Term Operation of the Central Valley Project (CVP) and State Water Project, and Related Facilities referred to as the ROC on LTO EIS or Draft EIS.

NCPA and its sixteen members purchase in total more than 40 percent of the Central Valley Project (CVP) power that is marketed by the Western Area Power Administration (WAPA). In addition, several of our member cities also are CVP water contractors with Reclamation. NCPA and its members actively participate in numerous proceedings that affect the availability, cost, and value of CVP water and power products. We provide major funding support for both Reclamation and WAPA operations and maintenance programs to assist with federal budget constraints. In addition, we provide extensive funding for the Restoration Fund activities, pursuant to the Central Valley Project Improvement Act.

We are pleased to see that Reclamation did include WAPA as a Cooperating Agency for the Draft EIS, as previously suggested, and we encourage Reclamation to incorporate WAPA's recommendations into the Draft EIS.

Please consider our recommendations on the following alternatives as you prepare the Draft EIS:

1. **Alternatives in the Draft EIS must carefully and fully identify all of the future costs and benefits for all measures, facilities, and programs that are proposed to be continued or expanded.**

The Draft EIS must clearly describe the impacts to the future costs and availability of CVP power. CVP power that is marketed by WAPA is already struggling in the California wholesale power markets, both with respect to price and availability. CVP power prices have at times reached $60/MWH when the costs of CVPIA programs along with Reclamation and WAPA costs are all

included. The alternative solar and wind renewable resource power costs are often lower and also qualify for California's renewable resource requirements. Furthermore, during drought periods, the CVP power generation available to be marketed by WAPA is not even adequate to meet the Project Use pumping load requirements. In many ways, CVP power has unfortunately declined in both its availability and its market value to preference customers. The Draft EIS must therefore clearly analyze how the various new future operations or facility additions will either improve or degrade an already challenged CVP power situation facing both Reclamation and WAPA.

2. **Funding Alternatives in the Draft EIS Need to be Fully Identified and Considered and Analyzed**

The CVP operations, maintenance, repayment, and Restoration Fund programs all presently rely heavily on funding that is provided by CVP water and power customers. The Draft EIS must fully identify the present funding impacts and should also consider alternative funding sources, including potential federal appropriation requirements, so that the financial impacts of proposed new facilities or measures are fully identified. For CVP power funding, it will be important to consider the potential impacts of loss of CVP customer revenues if CVP power customers choose to end their purchases from WAPA at future off-ramp dates (2024 and beyond). If CVP power were to be sold primarily in the California ISO market, the Draft EIS needs to identify and forecast the greatly reduced funding that would be available to support existing programs. In addition, if new facilities or operational requirements are proposed, the funding requirements and additional future appropriation requirements must be clearly identified.

3. **Potential Legislative and Regulatory Changes Must be Analyzed in the Alternatives**

The CVPIA legislation established various environmental and fisheries performance goals for which nearly $2 billion has been expended. Unfortunately, none of these performance goals have been met nor has doubling of fisheries occurred as had been envisioned in 1992. The Draft EIS must include alternatives that analyze CVP and SWP water and power delivery outcomes if revisions are made to existing legislation or regulations that have been followed for more than 25 years. The Draft EIS must consider, even though difficult, whether the current package of regulatory and legislative requirements can be achieved by the CVP and State Water Project, in light of changes in population, global warming, and other environmental factors that bear upon these projects. For example, salinity levels in the Sacramento River system were already higher at times prior to the construction of both the CVP and State Water Project. Are the current requirements that impact the operations of the Jones and Banks pumping facilities appropriate to be continued? Are there better alternatives in light of the scientific work that has been conducted in these ecosystems? The Draft EIS must also include analyses of the likely alternatives that may be proposed by the State Water Resources Control Board, including revisions to unimpaired flow and temperature requirements that may affect the projects.

4. Enhanced CVP and State Water Project Power Alternatives Need to be Included in the Draft EIS.

The CVP and State Water Project water operations are presently coordinated via the Coordinated Operations Agreement. However, power operations of the two systems are not coordinated, and there could be opportunities for enhanced future benefits. The Draft EIS should, therefore, include alternatives that would consider a direct transmission interconnection at the Banks pumping facilities to the CVP transmission system, along with other similar opportunities that would reduce costs or increase benefits for the two systems. Historically, the state generating facilities at Oroville were interconnected briefly with the CVP 230kv transmission system. Are there opportunities for improved power coordination? We recommend that the Draft EIS identify these possibilities and estimate the future benefits and costs for each such measure or facility. Can the pumping operations of the two projects be better modernized and costs reduced in light of California's rapidly changing power market and increased renewable resource generation?

5. Trinity River and Klamath River System Alternatives Must Be Included and Analyzed

CVP water and power operations are substantially impacted by Trinity River water releases made in an attempt to assist with Klamath River system environmental and fishery problems. The Draft EIS should consider alternatives that would restore Trinity water and power benefits to the CVP system while exploring other measures that could more effectively address the Klamath system issues. Would other Klamath Basin measures be more effective in achieving the desired outcomes than continuing to avoid water transfers to the Sacramento River system? Why are the Klamath system results continuing to fail to meet the fishery objectives despite massive water releases on the Trinity? What are the costs and benefits of these measures and how will they impact CVP water and power costs and availability?

We very much appreciate this opportunity to comment on the ROC on LTO EIS and look forward to working with Reclamation on this important project.

Sincerely,

JANE CIRRINCIONE
Assistant General Manager
Legislative & Regulatory Affairs

Harrison, Katrina <kharrison@usbr.gov>

CVP LTO revisions

Seemann, Hank <HSeemann@co.humboldt.ca.us> Tue. Jan 2, 2018 at 9:46 AM
To: “kharrison@usbr.gov” <kharrison@usbr.gov>

Katrina-

The purpose of this e-mail is to request that Humboldt County be invited to participate as a cooperating agency for the NEPA process on the revisions to the coordinated long-term operation of the CVP and SWP. Humboldt County is a water contract holder for the Trinity River division of the CVP. The County’s contract is described in the attached December 2014 memo from the solicitor.

The invitation can be sent to:

Ryan Sundberg, Chair
Humboldt County Board of Supervisors
825 Fifth Street
Eureka, CA 95501

Please copy me as the staff point of contact:

Hank Seemann, Deputy-Director (Environmental Services)
Humboldt County Public Works Department
1106 Second Street
Eureka, CA 95501

Please add me to the distribution list for this matter. E-mail transmittal is preferred (hseemann@co.humboldt.ca.us). Thank you.

Hank

Hank Seemann
Deputy Director – Environmental Services

Humboldt County Public Works Department
1106 Second Street
Eureka, CA 95501
707-268-2680

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United States Department of the Interior

OFFICE OF THE SOLICITOR

December 23, 2014

M-37030

Memorandum

To: Secretary

From: Solicitor

Subject: Trinity River Division Authorization's 50,000 Acre-Foot Proviso and the 1959 Contract between the Bureau of Reclamation and Humboldt County

Introduction

This memorandum responds to the Bureau of Reclamation's request for a legal interpretation of section 2 of the 1955 Act[1] that established the Trinity River Division (TRD) and the corresponding 1959 contract between the Bureau of Reclamation (Reclamation) and Humboldt County (1959 Contract). The request stems in part from a September 2010 letter from the Chairman of the Humboldt County Board of Supervisors seeking to "reaffirm the County's contractual right to not less than 50,000 acre-feet annually from the Trinity Reservoir" based on section 2 of the 1955 Act.[2]

Concerns regarding fishery needs in the lower Klamath River, below the confluence with the Trinity River to the Pacific Ocean, and actions that Reclamation took in the late summer the past three years have further heightened interest in this matter.[3] Over the past twelve years, the Department--particularly Reclamation--has faced increasing pressure to address conditions in the lower Klamath River in order to prevent a fish die-off, such as the one that occurred in September 2002. In five of the past twelve years, Reclamation has responded by releasing additional water from the TRD--first through purchase from willing sellers in 2003 and 2004, and then in 2012 and 2013 under the authority of the 1955 Act to protect the fishery. This year, Reclamation also released flows on an emergency basis, again citing the 1955 Act, to address rapidly deteriorating conditions related to the severe drought. The more recent releases spurred Central Valley Project (CVP) water users to file a lawsuit challenging Reclamation's actions.[4]

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[1] Act of August 12, 1955, 69 Stat. 719.

[2] September 7, 2010 Letter from Humboldt County Chairman Clendenen to Commissioner Connor re: Humboldt County Central Valley Project Contract. *See also infra* note 11.

[3] *See, e.g.,* July 19, 2013 Letter from Congressmen Huffman, Thompson, and Miller to Secretary Jewell (discussing efforts to protect the fishery in 2012 and 2013 and previous requests by Humboldt County and others to utilize section 2 of the 1955 Act); October 2, 2014 Letter from Congressman Huffman to Acting Commissioner Pimley (discussing the desire for Reclamation to address the obligation to make water available under section 2 of the 1955 Act).

[4] Reclamation cited Proviso 1 of the 1955 Act for the TRD supplemental flows (*i.e.* in addition to the volumes established in the 2000 ROD) released in 2012, 2013, and 2014 to protect Klamath and Trinity fish stocks against

During the period since 2002, as well as previously, Humboldt County officials and other interested parties also urged Reclamation to release additional TRD water to support instream flows for salmon.[5]

In response to these concerns, Reclamation is developing a long-term management strategy regarding instream flows in the lower Klamath River. This memorandum provides legal analysis of one of the authorities that Reclamation is considering in developing a long-term augmentation plan.

As discussed in more detail below, I conclude that the two provisos in section 2 of the 1955 Act--one regarding the maintenance of Trinity River flows and other appropriate measures to ensure the preservation and propagation of fish and wildlife (Proviso 1), and the other requiring that not less than 50,000 acre-feet be released annually and made available for Humboldt County and downstream water users (Proviso 2)--represent separate and independent limitations on the TRD's integration with, and thus diversion of water to, the CVP. Accordingly, I conclude that the water envisioned in Proviso 2 does not necessarily fall within the volumes released pursuant to Proviso 1. Additional releases to the Trinity River may also be required pursuant to Proviso 2 in response to proper requests and applicable law.

The legal analysis in this memorandum includes a review of Reclamation's past interpretation of the 1955 Act as well as prior memoranda from the Regional Solicitor's office. The prior interpretations generally deemed water to satisfy Humboldt County and downstream water users under Proviso 2 as being subsumed within the fishery releases of Proviso 1. It is my conclusion that these interpretations may not be consistent with the distinct purposes of the two provisos. I conclude instead that the better reading of the statute is that the two provisos authorize and may require separate releases of water as requested by Humboldt County and potentially other downstream users pursuant to Proviso 2 and a 1959 Contract between Reclamation and Humboldt County.

Relevant Statutory Provisions

Section 2 of the 1955 Act reads:

> Subject to the provisions of this Act, 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 manner as will effectuate the fullest, most beneficial, and most economic utilization of the water resources hereby made available: *Provided*, That the Secretary is authorized and directed to adopt appropriate measures to insure the

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potential disease outbreaks, such as occurred in 2002 in the lower Klamath River. Central Valley water users sought to enjoin this action in 2013. Although the court did not prevent Reclamation from making such augmentation flows in 2013 or 2014, the court's recent ruling questioned Reclamation's ability to rely upon Proviso 1 as authority for the 2013 releases. *San Luis & Delta Mendota Water Authority, et al. v. Jewell, et al.*, Case No.: 1:13-CV-01232-LJO-GSA (E.D. Cal., Oct. 1, 2014). The Department of Justice will be filing a protective notice of appeal on behalf of the Department.

[5] *See, e.g., supra* notes 2 and 3; *infra* note 11 and accompanying text.

preservation and propagation of fish and wildlife, including, but not limited to, the maintenance of the flow of the Trinity River below the diversion point at not less than one hundred and fifty cubic feet per second for the months July through November and the flow of Clear Creek below the diversion point at not less than fifteen cubic feet per second unless the Secretary and the California Fish and Game Commission determine and agree that lesser flows would be adequate for maintenance of fish life and propagation thereof; the Secretary shall also allocate to the preservation and propagation of fish and wildlife, as provided in the Act of August 14, 1946 (60 Stat. 1080), an appropriate share of the costs of constructing the Trinity River development and of operating and maintaining the same, such costs to be non-reimbursable **[Proviso 1]**: *Provided further*, That not less than 50,000 acre-feet shall be released annually from the Trinity Reservoir and made available to Humboldt County and downstream water users **[Proviso 2]**.

Setting and Background

TRD Authorization and Contract with Humboldt County

The Trinity River originates in the Salmon-Trinity Mountains (also known as the Trinity Alps) of northwest California. *See* Attachment 1 (Map). The Trinity River drains approximately 2,965 square miles and flows generally southward until Lewiston, where it then flows northwesterly, joining the Klamath River in Humboldt County near the boundary of the Hoopa Valley Indian Reservation. From this point, the lower Klamath River continues in a northwesterly direction, flowing through Humboldt County and the Yurok Indian Reservation before reaching the Pacific Ocean just south of the California-Oregon border. Reclamation's TRD facilities include Trinity Dam and Reservoir and Lewiston Dam and Reservoir on the Trinity River in Trinity County, and while the facilities allow a portion of the water from the Trinity River to flow to its confluence with the Klamath River, since the completion of the TRD, the facilities have diverted a significant volume of the Trinity River outside of the Trinity River basin and into the Sacramento River Basin to the east, making it available for delivery to Reclamation's CVP contractors.

Plans to divert Trinity River water to the Central Valley began in the 1930s under California's Water Plan.[6] The Department subsequently provided Congress with reports and findings on a plan of development in the early 1950s. Based on the reports, Congress concluded that water "surplus" to the present and future needs of the Trinity and Klamath Basins--estimated at approximately 700,000 acre-feet per year and considered "wasting to the Pacific Ocean"--could be diverted to the Central Valley "without detrimental effect to the fishery resources."[7] Congress authorized the TRD on August 12, 1955 (1955 Act).[8] Attachment 2.

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[6] The *California Water Plan* (Plan), a State document, provides a framework for water managers, legislators, and the public to consider options and make recommendations regarding California's water future. The Plan, which is updated every five years, presents basic data and information on California's water resources--including water supply evaluations and assessments of agricultural, urban, and environmental water uses--to quantify the gap between water supplies and uses. The first Plan was the State Water Plan of 1930, transmitted on January 1, 1931.

[7] H. Rep. No. 84-602, at 4-5 (1955); S. Rep. No. 84-1154, at 5 (1955).

[8] Pub. L. No. 84-386, 69 Stat. 719-21.

Congress authorized the TRD as an integrated component of the CVP in order to increase water supplies for irrigation and other beneficial uses in the Central Valley. Section 2 of the 1955 Act, however, included two provisos that limit this integration. Proviso 1 directed the Secretary to ensure the preservation and propagation of fish and wildlife through the adoption of appropriate measures, including certain minimum flows then deemed necessary in the Trinity River for the fishery. Proviso 2 specified that "not less than 50,000 acre-feet shall be released annually from the Trinity Reservoir and made available to Humboldt County and downstream water users."

In recognition of Proviso 2, a 1959 water delivery contract between Reclamation and Humboldt County states as follows:

> The United States agrees to release sufficient water from Trinity and/or Lewiston Reservoirs into the Trinity River so that not less than an annual quantity of 50,000 acre-feet will be available for the beneficial use of Humboldt County and other downstream users.[9]

Attachment 3. In addition, Reclamation's water permits from the State of California similarly include a distinct condition related to Humboldt County and downstream users.[10]

As discussed more fully below, the Department and Reclamation have previously asserted a view that these two provisos be read as addressing the same block of water notwithstanding the separate statutory provisos, the contract language (which mirrors Proviso 2), and the state water permit terms. Humboldt County has asked Reclamation to provide water pursuant to its contract to protect Klamath and Trinity River fish stocks in 2012, 2013, and 2014 as well as in previous years.[11] The Hoopa Valley Tribe joined in these requests. Reclamation has also received letters from water users supporting Reclamation's prior interpretation of these provisos.[12]

Initial TRD Operations and Subsequent Efforts to Restore and Protect Fish and Wildlife

Following the completion of the TRD in the early 1960s, Reclamation released into the Trinity River 120,500 acre-feet per year, which included the minimum fishery releases set by Proviso 1

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[9] 1959 Contract Article 8.

[10] *See infra* at 50-52.

[11] *See, e.g.,* March 13, 2013 Letter from Humboldt County Board of Supervisors Chairperson Bass and Hoopa Valley Tribe Chairman Masten to Secretary of the Interior Salazar and California Governor Brown re Prompt Action Requested to Protect Klamath River from Catastrophic Fish Kill; August 14, 2013 Letter from Humboldt County Board of Supervisors Chairman Sundberg and Hoopa Valley Tribe Chairman Masten to Secretary of the Interior Jewell re *San Luis & Delta Mendota Water Authority v. Jewell*, Case No. 1:13-CV-01232-LJO-GSA – Urgent Request for Telephone Conference. April 16, 2014 Letter from Hoopa Valley Tribe Chairwoman Vigil-Masten to Secretary of the Interior Jewell re Central Valley Project operations in violation of Law of the Trinity River; July 22, 2014 Letter from Humboldt County Board of Supervisors Chairman Bohn to Secretary of the Interior Jewell re Request for augmentation flows in lower Klamath River; August 14, 2014 Letter from Hoopa Valley Tribe Chairwoman Vigil-Masten to Secretary of the Interior Jewell re Salmon Fishery and Water Crisis. *See also, e.g., supra* note 3.

[12] *See, e.g.,* January 18, 2011 Letter from San Luis & Delta Mendota Water Authority Executive Director Nelson to Commissioner Connor re 1959 contract between Humboldt County and Reclamation for 50,000 acre-feet of Trinity River Division water.

and as further established by the TRD permits issued by the State Water Board.[13] For the first ten years of full operations, TRD diversions to the Central Valley averaged nearly 90 percent of the upper Trinity Basin inflow--exporting to the Central Valley on average 1,234,000 acre-feet annually from the 1,396,000 acre-feet total average inflow into Trinity Lake.[14] Construction of Trinity and Lewiston Dams also resulted in the loss of upstream spawning and rearing habitat and the degradation of fish habitats below the dams. The river's salmon and steelhead populations declined significantly as a result of these combined effects.[15]

A 1980 Environmental Impact Statement (EIS) estimated fish population reductions of 60 to 80 percent and habitat loss to be 80 to 90 percent since completion of the TRD. The EIS attributed the depletion of fish populations to three causative factors--inadequately regulated harvest, excessive streambed sedimentation, and insufficient streamflows--but concluded that insufficient streamflows represented the most critical limiting factor to fishery restoration. Based on the 1980 EIS, the 1955 Act, and trust obligations to the Hoopa Valley and Yurok Tribes, Secretary Andrus directed the U.S. Fish and Wildlife Service to complete a 12-year study to assess the effectiveness of flow and habitat restoration efforts and make recommendations on measures necessary to address the fishery impacts attributable to the TRD consistent with the Department's obligations.[16] Secretary Andrus increased fishery releases--ranging from 140,000 acre-feet in critically dry years to 340,000 acre-feet in normal years--and directed that these releases not be "permanently allocated" to any other purpose until the Secretary could act on the completed report and determine the needs of the Trinity River fishery.[17]

Congress enacted subsequent legislation aimed at addressing the growing problems facing the Trinity River. In 1980, Congress enacted the Trinity River Stream Rectification Act,[18] aimed at controlling sand deposition problems resulting from the degraded Grass Valley Creek watershed. In 1984, Congress passed the Trinity River Basin Fish and Wildlife Management Act,[19] which made findings similar to those in the 1980 EIS and directed the Secretary to develop a program to restore fish and wildlife populations to levels approximating those that existed immediately before TRD construction began.[20] In 1992, Congress enacted the Central Valley Project

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[13] Testimony before the State Water Rights Board on the permits for the TRD established that the water Congress directed to be released in Proviso 1 (150 cfs for July through November and 15 cfs at Clear Creek) would result in 46,000 acre-feet of releases. *In re Applications 5627, 5628, 15374, 15375,15376, 16767, 16768, 17374, United States of America, Bureau of Reclamation*, Before the Water Rights Board, State of California, Dec. 29, 1958 at 31 (1958 Testimony). Condition 8 of the TRD permit then sets out the balance of releases that add up to 120,500 acre-feet per year. *See infra* note 50; *see also* 1958 Testimony at 24.

[14] 2000 ROD at 5. Trinity Lake was formerly known as Trinity Reservoir or Clair Engle Reservoir.

[15] *Id.*

[16] Secretarial Issue Document, Trinity River Fishery Mitigation (January 1981).

[17] *Id.*

[18] Pub. L. No. 96-335.

[19] Pub. L. No. 98-541.

[20] Amendments to the 1984 Act redefined its restoration goals so that the fishery restoration would be measured not only by returning anadromous fish spawners, but also by the ability of dependent tribal and non-tribal fishers to participate fully in the benefits of restoration through meaningful in-river and ocean harvest opportunities, and also expanded the scope of the habitat restoration efforts beyond Weitchpec and the immediate Trinity River Basin to include the lower Klamath River downstream of its confluence with the Trinity River. Trinity River Fish and Wildlife Management Reauthorization Act of 1995, Pub. L. No. 104-143 (May 15, 1996).

Improvement Act (CVPIA), including section 3406(b)(23), which (1) set the minimum flow volume in the Trinity River at not less than 340,000 acre-feet based on the supplemental Secretarial Decision signed by Secretary Lujan in 1991;[21] (2) directed the completion of the 12-year study initiated by Secretary Andrus "in a manner which insures the development of recommendations, based on the best available scientific data, regarding permanent instream fishery flow requirements and [TRD] operating criteria and procedures for the restoration and maintenance of the Trinity River fishery"; and (3) mandated the Secretary to implement the recommendations from the study upon concurrence by the Secretary and the Hoopa Valley Tribe.

In 2000, Secretary Babbitt, with the concurrence of the Hoopa Valley Tribe, issued the 2000 ROD, which relied upon the multi-year Trinity River Flow Evaluation Study (TRFES) completed in 1999 and its associated EIS.[22] In addition to stream modifications, infrastructure improvements, sediment management, and other recommendations, the 2000 ROD adopted a variable annual instream flow regime for the mainstem Trinity River below the TRD, based on the annual forecasted hydrology for the basin, ranging from 369,000 acre-feet in critically dry years to 815,000 acre-feet in extremely wet years.[23] The regime mimics the natural spring snowmelt hydrograph for the basin, with higher flows focused in the spring and early summer months and relatively low base flows from July through March. The flows established in the 2000 ROD also address various habitat requirements of the Trinity River fishery, including spawning and rearing needs, migration cues, temperature conditions, and associated river-maintenance considerations. The 2000 ROD focused on the flow and habitat requirements of the Trinity River mainstem and did not consider the lower Klamath River below its confluence with the Trinity River.

Thus, although efforts were previously made to determine necessary TRD fishery releases, not until completion of the TRFES Final Report and EIS did the Secretary have a fully informed understanding of the biological and physical needs of the fishery based on the best available science, including TRD releases that must be dedicated to ensure the restoration and maintenance of the Trinity River fishery within the mainstem Trinity River.[24] Since 2001 and implementation of the 2000 ROD, flows in the Trinity River have averaged just over 630,000 acre-feet annually

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[21] Secretary Lujan set the minimum release to be "at least" 340,000 acre-feet per year for the remainder of the flow study process to ensure the integrity of the study because five of the first six years had been dry water years.

[22] The TRFES and EIS, and thus the 2000 ROD, focused on measures necessary to restore habitat conditions within the 40 miles of Trinity River mainstem immediately below Lewiston Dam, concluding that the detrimental effects of TRD construction and operation were particularly severe within this area. EIS § 1.3; *see also id.* § 1.2 (discussing purpose and goal of the TRFES as focused on restoration and maintenance of the mainstem Trinity River and its fishery); TRFES fig. 5.1 (showing study area extending from Lewiston Dam to the Hoopa Valley); 2000 ROD at 8.

[23] Central Valley water and power users challenged implementation of the 2000 ROD. The Ninth Circuit affirmed the 2000 ROD, noting that restoration of the Trinity River was "unlawfully long overdue." *Westlands Water District v. Dep't of the Interior*, 376 F.3d 853, 878 (9th Cir 2004). Moreover, the Ninth Circuit specifically rejected Plaintiffs' complaint that the Department impermissibly constrained the action's geographic scope to the Trinity River mainstem, recognizing that "the federal agencies were within their discretion in focusing the EIS on mainstem rehabilitation as a part of promoting fishery basin-wide." *Id.* at 866-67.

[24] As discussed in the final TRFES report, the science supporting the fishery flow volumes and regimes established both as part of the 1955 Act and the 1981 Secretarial Decision focused primarily on single-species management (Chinook salmon) and, initially, only on one life stage of that species (spawning). Trinity River Flow Evaluation Final Report at 1-2, 8 (June 1999).

and diversions to the CVP have averaged nearly 690,000 acre-feet annually.[25]

50,000 acre-foot Proviso and Previous Interpretations

Prior to passage of the 1955 Act, in-basin users became concerned that the TRD authorization would deprive them of water essential for their needs. Various statements in committee reports supporting the 1955 Act emphasized that only water deemed "surplus" to the needs of the Trinity Basin could be exported to the Central Valley. Statements in the Congressional Record also note that the inclusion of Proviso 2 as an amendment during debate on the House floor, after the committee reported the bill out containing only Proviso 1, was "to assure to Humboldt County, Calif., an *additional* 50,000 acre-feet of water from the rivers concerned[.]"[26]

Since the TRD's authorization, offices and bureaus within the Department have asserted a view that Proviso 2 should be read in conjunction with Proviso 1 and not as a separate release requirement. In 1958, Reclamation argued to the State Water Rights Board (State Water Board or Board)[27] that the 1955 Act's section 2 provisos required only a single permit condition. Although the State Water Board included two separate conditions in the TRD permits (*see* Attachment 4) and Reclamation entered into a contract with Humboldt County in 1959 that references Proviso 2, Reclamation sent a letter to the State Water Board on the same day as the contract's execution, noting that it entered the contract "on the basis of our firm position that the 50,000 acre-feet made available thereby is not additive to the 120,000 acre-feet annually released from Lewiston Dam."[28]

Later, in 1974 and 1977, the Regional Solicitor's Office examined the two provisos in the 1955 Act in two separate memoranda. The 1974 memorandum from the Assistant Regional Solicitor to Reclamation's Regional Director, although focused primarily on the issue of whether the 1955 Act authorized "flood control or other purposes generally beneficial to downstream interests" (concluding in the negative), also addressed the issue of an "interpretation of the last proviso of section 2 of the Act as it relates to releases authorized for fish preservation." Attachment 5.[29] With respect to Proviso 2, the 1974 memorandum briefly concluded, without any in-depth analysis:

> The water released for fishery purposes is not consumed, but remains available later for use by other downstream users. In addition, the term "downstream water user" is not specific, but appears to refer to all downstream users generally, including the fishery.

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[25] Trinity River releases during this period have included not only fishery releases pursuant to the 2000 ROD, but also occasional safety-of-dam releases (including more than 400,000 acre-feet in 2006), biennial tribal ceremonial releases, and additional late-summer fishery releases (*see supra* note 4 and *infra* note 35 and accompanying text).

[26] 101 Cong. Rec. H7962 (1955) (emphasis added).

[27] The State Water Rights Board was the predecessor to the State Water Resources Control Board, the entity presently charged with issuing and administering water rights in the State of California.

[28] June 19, 1959 Letter from Regional Director Bellport to California State Water Rights Board.

[29] July 1, 1974 Memorandum from Assistant Regional Solicitor to Reclamation Regional Director re Request for opinion re authority of the Secretary of the Interior to alter present functions and accomplishments of Trinity River Division, Central Valley Project, at 1-3.

> Therefore it is my opinion that since the purpose of the [TRD] is to provide as much water as possible to the Central Valley . . . the 50,000 acre-feet referred to in the last proviso of Section 2 should be construed to include the water necessary to maintain minimum specified instream flows for fish preservation and propagation rather than being considered to be in addition to such flows.[30]

Thus, the 1974 memorandum interpreted the section 2 provisos together rather than as authorizing separate or additional releases to meet the purposes of each proviso.

In 1977, in response to a request from the Field Supervisor for the U.S. Fish and Wildlife Service, the Regional Solicitor "reconsidered" the interpretation of section 2 as set out in the 1974 memorandum. Attachment 6.[31] The 1977 memorandum agreed with the prior interpretation that the section 2 provisos were "not necessarily conflicting purposes," and disagreed with the Service's view that the 1955 Act provided or intended "separate and distinct 'blocks of water' for fish preservation and propagation purposes[.]" The 1977 memorandum also recognized, however, that "diversions made by downstream users" could "caus[e] harm to fish resources" and that the 1955 Act "grant[ed] the Secretary of the Interior broad authority to increase the size of the releases . . . should such additional releases be deemed necessary" to meet the purposes of Proviso 1. Accordingly, the Regional Solicitor "amended" the 1974 memorandum's concluding paragraph (quoted above) by adding the following text:

> [H]owever, it should be noted that the proviso quoted above [Proviso 2] does not limit downstream use to 50,000 acre-feet annually. Rather . . . the Secretary has discretionary authority to release additional water for the purpose of preserving or propagating fish resources.[32]

Humboldt County, Trinity County, the Hoopa Valley Tribe, and other downstream interests have raised this issue periodically over the past few decades. In response to Trinity County's scoping comments on the Sacramento River Water Contracting EIS, Reclamation replied in 1988 that "the 50,000 acre-feet requirement can be made available from the river flow established for fisheries and accretions to the river."[33] In response to Trinity County's request to Secretary Babbitt to use the water for recreation and community development, Reclamation replied in 1995 that Proviso 2:

> was intended for consumptive uses that may develop and require additional releases. As such, the contract with Humboldt County was executed . . . on the basis that the 50,000 acre-feet is included within the total quantity of water provided for in the fishery releases

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[30] *Id.* at 5 (internal citations omitted).

[31] January 21, 1977 Memorandum from Regional Solicitor to Field Supervisor, USFWS, re Trinity River Division, CVP – Reconsideration of July 1, 1974 Memorandum to Regional Director, Bureau of Reclamation, Concerning Section 2 of the Trinity River Division Act.

[32] *Id.* at 2.

[33] January 29, 1988 Letter from Reclamation Regional Director Houston to Chairman Patricia Garrett, Trinity County Board of Supervisors.

and is not additive to that quantity *as long as* reservoir releases, accretions, and tributary flows are sufficient to supply the 50,000 acre-feet required for downstream uses.[34]

Over the past decade, Humboldt County and the Hoopa Valley Tribe made several requests to the Department to make releases pursuant to Proviso 2, primarily to avoid fish die-offs like the one that occurred in the lower Klamath River below its confluence with the Trinity in 2002. Instead, Reclamation has either acquired water from CVP contractors to provide late-season releases into the Trinity River in addition to those included in the 2000 ROD or made releases pursuant to Proviso 1.[35]

Analysis

After a thorough review of the record available to us, I believe the two provisos in section 2 of the 1955 Act address separate and distinct conditions on the TRD's integration with the CVP. Under the 1955 Act and related permits issued by the State Water Board, Proviso 2 establishes a separate obligation for Reclamation to release water from the TRD to provide for beneficial use by Humboldt County and other downstream users. This obligation is not subsumed within the obligation to release water pursuant to Proviso 1. Accordingly, additional releases from the TRD under Proviso 2 may be required in response to proper requests from Humboldt County or other downstream users.

In reaching this conclusion, I recognize there could be implications for Reclamation when altering its past practice to conform with this opinion. I believe, however, that if additional review and evaluation leads us to the conclusion that the past interpretation is erroneous, whether based on further legal review or changed circumstances, then the Department has an obligation to change its interpretation.[36] My reasoning follows.

1955 Act

Prior analyses of the 1955 Act emphasized the intent to develop facilities in the Trinity River Basin to provide additional water supplies to the Central Valley. As noted in the 1974 memorandum, section 1 of the 1955 Act authorized the TRD for the "principal purpose of increasing the supply of water available for irrigation and other beneficial uses in the Central Valley[.]" Likewise, section 2 provided that the TRD "shall be integrated and coordinated" with the CVP "in such a manner as will effectuate the fullest, most beneficial, and most economic utilization of the water resources hereby made available[.]"

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[34] January 30, 1995 Letter from Reclamation Regional Director Patterson to Chairman S.V. Plowman, Trinity County Board of Supervisors, re Federal Reserved Water Right to 50,000 Acre-Feet From the Trinity Division of the Central Valley Project (re: Your Letter Dated November 16, 1994) (emphasis added).

[35] These releases occurred during the pendency of, and immediately following the conclusion of, the CVP water and power users' lawsuit challenging the 2000 ROD. *See supra* note 23. In an April 2003 order, Judge Wanger specifically authorized the 2003 supplemental releases, up to 50,000 acre-feet, during the litigation and pending appeal in order to minimize the potential die-off of salmon as occurred in the lower Klamath River in 2002.

[36] *See Chisholm v. FCC*, 538 F.2d 349, 364 (D.C. Cir. 1976) ("We note initially that an administrative agency is permitted to change its interpretation of a statute, especially where the prior interpretation is based on error, no matter how longstanding.").

Section 2, however, expressly restricted this integration. The opening clause specifically states that the TRD's integration and coordination with the CVP shall be "[s]ubject to the provisions of this Act[.]" Section 2 then included two provisos:

> *Provided*, That the Secretary is authorized and directed to adopt appropriate measures to insure the preservation and propagation of fish and wildlife [including, but not limited to, the maintenance of flows at certain specified minimum levels]; *Provided further*, That not less than 50,000 acre-feet shall be released annually from the Trinity Reservoir and made available to Humboldt County and downstream water users.

These provisos set forth two separate and distinct limitations on the integration of the TRD with the CVP.

Proviso 1 refers generally to the preservation of fish and wildlife, whereas Proviso 2 refers to releases of water made available for downstream entities. Proviso 1 thus requires releases for distinct purposes, whereas Proviso 2 has no restriction on uses for the released water, instead specifying the entities that will be using the water. Proviso 1 requires a release for instream purposes, while Proviso 2 appears to allow any beneficial use contemplated by "Humboldt County and downstream water users," including diversions for consumptive use, most likely the use envisioned at the time the language was developed.[37] Thus, a conclusion that water uses under Proviso 2 are always incorporated into and subsumed within the releases in Proviso 1 is at odds with the separate purpose and stand-alone nature of each proviso of the 1955 Act.

An interpretation that Proviso 2 is always subsumed within Proviso 1 strains the practical operation of Proviso 2 because Humboldt County and other downstream users would, under such an interpretation, have to rely on instream flows provided for the fishery, by design water released at specific times and specific volumes to *remain* instream and not be used for consumptive purposes. The instream fishery flows may not necessarily meet the needs or uses of those downstream users or be "available" to those users at the time it is needed as envisioned by Proviso 2.[38] In other words, a reading that establishes that the releases for use by Humboldt County are necessarily part of the fish releases would mean that the fishery would be shorted any time Humboldt County or other downstream water users diverted 50,000 acre-feet or used it in some other way that did not support the fishery. Such an outcome is inconsistent with the language and structure of the 1955 Act, and I conclude that the better reading is that the two provisos address separate releases of water. Indeed, the language in Proviso 2 states that 50,000 AFY "shall be released annually . . . and made available. . ." to Humboldt County and other downstream users. This wording on its face ensures that on an annual basis a certain amount of water be made available to local and downstream communities, particularly in those

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[37] In fact, the Humboldt County Board of Supervisors adopted Resolution No. 827 in April 1955, in which the Board agreed not to oppose the bill that became the 1955 Act if it guaranteed that the County could "divert up to 100,000 acre feet of water yearly for its use in irrigation, commercial, residential and industrial purposes" and also ensured minimum Trinity River flows. As later agreed and then enacted, Proviso 2 specifies instead "not less than 50,000 acre-feet" annually for the County and downstream users and does not articulate any particular use.

[38] As a corollary concern, if downstream users were to divert water released for preservation of fish and wildlife, then the intent of Proviso 1 may not be met.

circumstances when releases under Proviso 1 or other appropriate authorities are not a viable means for delivering such water.

Thus, Provisos 1 and 2 are stand-alone provisos that restrict the operative effect of the 1955 Act's principal purpose, *i.e.*, the integration of the TRD with the CVP. *See Cox v. Hart*, 260 U.S. 427, 435 (1922) (the purpose of a proviso "is to except something from the operative effect, or to qualify or restrain the generality, of the substantive enactment to which it is attached"); *Wayman v. Southard*, 23 U.S. 1, 30 (1825) (provisos are "generally intended to restrain the enacting clause, and to except something which would otherwise have been within it, or, in some measure, to modify the enacting clause"). The conclusion of these cases is consistent with *Sutherland's Statutory Construction*, which describes the purpose of statutory provisos as "restricting the operative effect of statutory language to less than what its scope of operation would be otherwise."[39] In other words, the 1974 memorandum reached its conclusion that *the* "purpose" of the TRD was "to provide as much water as possible to the Central Valley" without a careful examination of this settled principle regarding provisos, the 1955 Act, its legislative history, or contemporaneous events such as the state permit issuance and proceedings and Reclamation's contract with Humboldt County.

In 1979, Solicitor Krulitz, in construing whether general categories of priorities under CVP authorizations should be accorded equal priority in critically dry years, contrasted the general nature of the CVP with the specific provisions of the TRD's authorization. In doing so, Solicitor Krulitz noted that both provisos provide a limitation on the integration of the TRD with the CVP:

> On occasion the Congress has specifically limited the Secretary's discretion in meeting the general CVP priorities. For example, in authorizing the Trinity River Division of the CVP in 1955, Congress specifically provided that in-basin flows (in excess of a statutory prescribed minimum) determined by the Secretary to be necessary to meet in-basin needs take precedence over needs to be served by out of basin diversion. *See* Pub. L. No. 84-386, § 2. In that case, Congress' usual direction that the Trinity River Division be integrated in the overall CVP, set forth at the beginning of section 2, is expressly modified by and made subject to the *provisos* that follow giving direction to the Secretary regarding in-basin needs.[40]

Attachment 7. My position herein, that both provisos authorize separate and distinct limitations on the ability of Reclamation to import water into the Central Valley, is consistent with and builds on Solicitor Krulitz's opinion that the requirements of section 2 must be met before water may be exported from the Trinity River Basin.

Legislative History

Further support for my interpretation can be found in the legislative history of the 1955 Act. In addition to generally supportive statements in committee reports, statements regarding both

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[39] Sutherland § 47:08.

[40] Memorandum from the Solicitor to the Assistant Secretary – Land and Water Resources, *Proposed Contract with Grasslands Water District* at 3-4 (December 7, 1979) (emphasis (italics) was underlined in original) (1979 Grassland Memorandum).

Proviso 2 and the general intent of the legislation can be found in the Congressional Record and other contemporary sources.

As an initial matter, the bill that led to the 1955 Act, H.R. 4663, originally only included the fishery proviso in section 2. Inclusion of Proviso 2 occurred in order to secure congressional support for the legislation in the face of downstream opposition, including opposition from representatives of Humboldt County who were concerned that sufficient study had not been done regarding their water needs and that the TRD would not provide for the future needs of the basin.[41]

The bill, as reported by the House committee, emphasized:

> that there is available for importation from the Trinity River, water that is surplus to the present and future water requirements of the Trinity and Klamath River basins, and that surplus water, in the amount proposed in the Trinity division plan, can be diverted without detrimental effect to the fishery resources.[42]

The House subsequently took up H. Res. 263, the Rules Committee's terms for consideration of H.R. 4663.[43] The rules specifically allowed floor amendments to the bill. During an exchange regarding the resolution, Congressman Ellsworth specifically noted the intent to offer an amendment to address downstream concerns:

> [I]t is also my understanding informally that another amendment will be offered by the committee which will probably satisfy the opposition to the bill by another representative

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[41] *See* Hearing on H.R. 4663, *H. Subcomm. on Irrigation and Reclamation of the Comm. on Interior and Insular Affairs*, 84th Cong. 104-06 (Statements of Cong. Scudder), 169-70 (Statements of Richard Denbo, Humboldt County Chamber of Commerce) (April 13, 1955) [hereinafter *April 13, 1955 Hearing*]. After the hearing, the Humboldt County Board of Supervisors adopted Resolution No. 827, which the Board submitted to Congress and the Executive Branch and which promised no opposition to the TRD's authorization if (1) H.R. 4663 were amended to include specific quantities to Humboldt County for irrigation, commercial, and other purposes and (2) river flows were maintained below the TRD at certain specified levels. *See supra* note 37.

[42] H. Rept. No. 84-602, at 4 (1955).

The legislative history of the 1955 Act supports a more expansive view of Proviso 2. In addition to the language quoted above that emphasizes how only water "surplus to the present and future water requirements of the Trinity *and Klamath River basins*" would be available for export, other portions of the legislative history provide further support. For example, in advocating for the TRD, the Administration emphasized how TRD diversions from the "coastal basins" (the Trinity River itself does not touch the coast) to the Central Valley "would not affect future development of either the Trinity River Basin or the Klamath River Basin[.]" *April 13, 1955 Hearing* at 4, 10. Moreover, downstream opposition to the bill came specifically from representatives from the "Klamath River" or "Klamath Basin," including specific reference to Humboldt County as part of that group, and not just Trinity Basin interests. *See, e.g., id.* at 26 (exchange between Cong. Dawson and witness Murray); *id.* at 104-06 (referencing concerns of both Humboldt and Del Norte counties re effects to north coast communities); April 16, 1955 Redding Hearing at 71-72 (quoting concerns raised by Yurok Princess Brantner, from the lower Klamath River strip of the Reservation (which ran along the lower 20 miles of the Klamath River before it enters the Pacific Ocean), regarding fish spawning, logging, and other resource issues on the lower Klamath River affected by the bill); *see* Hearing on H.R. 4663, *S. Subcomm on Irrigation and Reclamation of the Comm. on Interior and Insular Affairs*, 84th Cong. at 18 [hereinafter *July 14, 1955 Senate Hearing*] (letter from Cong. Scudder noting objections of Humboldt and Del Norte county residents and how the Proviso 2 language will satisfy the concerns of downstream users).

[43] 101 Cong. Rec. 7,961 (1955).

> from California [Congressman Scudder]. As I understand it, this amendment will be offered to assure Humboldt County, Calif., an *additional* 50,000 acre-feet of water from the rivers concerned, which should properly take care of the neighboring area.[44]

Two weeks later, a colloquy between Congressmen Scudder and Engle, the bill's sponsor, secured the inclusion of the new Proviso 2 in order to ensure "water for people downstream[.]"[45] The Senate took up the amended bill and noted the inclusion of Proviso 2 as necessary to avoid downstream opposition.[46]

Thus, the legislative history, explaining the amendment that added Proviso 2, supports my interpretation that Proviso 2 should be interpreted as not being subsumed within Proviso 1. Rather, Proviso 2 was included to meet separate and distinct concerns from the in-basin communities and set aside an "additional" volume of water to address these concerns. This interpretation would also be consistent with the rule of statutory construction to give meaning to all legislative language within an enactment and to avoid "surplusage."[47]

State Water Board, TRD Permits, Reclamation's Contract with Humboldt County, and Federal and State Law Considerations

Between 1957 and 1959, the State Water Board held hearings on Reclamation's permit application for the TRD. Reclamation argued for one permit condition to capture both provisos found in section 2 of the 1955 Act.[48] Conversely, Humboldt County and California's Department of Fish and Game (CDFG) argued that the Board should adopt separate permit conditions to address each proviso because they contained distinct and potentially exclusive purposes for the water release and were included for distinct purposes.[49] The Board rejected Reclamation's interpretation and adopted a condition for each proviso, Condition 8[50] for Proviso

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[44] *Id.* at 7,962 (emphasis added).

[45] 101 Cong. Rec. 8,888 (1955).

[46] *July 14, 1955 Senate Hearing* at 11 (Statement of Sen. Kuchel), 18 (Letter from Cong. Scudder).

[47] *See, e.g., United States v. Menasche*, 348 U.S. 528, 538-39 (1955).

[48] *See, e.g., In the Matter of Applications 5627, 5628, 15374, 15375, 15376, 16767, 16768 and 17374, United States of America, Bureau of Reclamation, Applicant, California Department of Fish and Game (CDFG), Protestant, Trinity River, Trinity County, Before the Water Rights Board, State of California, Sacramento, California*, at 10-11 (written testimony that the 120,500 acre-feet released as specified in Proviso 1 would "satisfy the requirements for fish culture and the quantity set forth in Section 2 . . . that not less than 50,000 acre-feet be released annually . . . and made available to Humboldt County and downstream water users"), 23 (objecting to separate condition that would make second proviso "additive" to the water released under first proviso) (December 29, 1958).

[49] *Id.* at 18-19 (noting CDFG's concerns that use by downstream users not "cut into" water releases for fish), 28-30 (detailing County's position that Proviso 2 requires a separate release from TRD to be made available for downstream users and that the legislation clearly distinguishes this release from those for the fishery), 97-98 (reiterating County's position and requesting inclusion of separate condition in Reclamation's TRD permits).

[50] Condition 8 states:

> Permittee shall at all times bypass or release over, around or through Lewiston Dam the following quantities of water down the natural channel of Trinity River for the protection, preservation and enhancement of fish and wildlife from said dam to the mouth of said stream;
>
> | | |
> |---|---|
> | October 1 through October 31 | 200 cfs |
> | November 1 through November 30 | 250 cfs |

1 and Condition 9[51] for Proviso 2, in the permits issued to Reclamation.[52] Those 1959 permits are still in effect today. The Board's inclusion of two separate conditions reflects adoption of CDFG's interpretation at the time. Although not wholly dispositive of the issue, this contemporaneous construction of the State's position is consistent with the statutory and legislative history analysis above.

The language of the 1959 Contract with Humboldt County, which is still valid and in effect today, does not alter this analysis. The 1959 Contract cites the 1955 Act and essentially restates Proviso 2. The Contract states in Article 8:

> The United States agrees to release sufficient water from Trinity and/or Lewiston Reservoirs into the Trinity River so that not less than an annual quantity of 50,000 acre-feet will be available for the beneficial use of Humboldt County and other downstream users.

On the same day that this 1959 Contract was signed, Reclamation sent a letter to the Board stating:

> This contract has been executed on the basis of our firm position that the 50,000 acre-feet made available thereby *is not additive* to the 120,500 acre-feet annually to be released from Lewiston Dam as provided in an agreement between the United States and the State Department of Fish and Game dated March 27, 1959, copies of which have been furnished to you.[53]

Although the contemporaneous statement made in the cover letter reflects the Regional Director's interpretation at the time, a rationale for the statement was not included.

Lastly, while I believe that federal law sets forth the legal framework for the analysis of whether the two provisos are independent and separate conditions on the TRD's integration with the CVP, I also believe the interpretation set forth in this memorandum is consistent with state water law principles. The 1902 Reclamation Act, incorporated in both the 1955 Act and the 1959 Contract, directs the Secretary to defer to state law regarding the "control, appropriation, use, or distribution of water used in irrigation, or any vested right acquired thereunder" to the extent not inconsistent with federal law.[54] Here, Congress specifically limited the integration of the TRD with the rest of the CVP in the 1955 Act by recognizing that in-basin needs for Humboldt

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December 1 through December 31	200 cfs
January 1 through September 30	150 cfs

Any water released through said Lewiston Dam for use in the fish hatchery now under construction adjacent thereto shall be considered as partial fulfillment of the above schedule.

[51] Condition 9 states:

Permittee shall release sufficient water from Trinity and/or Lewiston Reservoirs into the Trinity River so that not less than an annual quantity of 50,000 acre-feet will be available for the beneficial use of Humboldt County and other downstream users.

[52] State Water Permits under Application Nos. 5627, 15374, 15376, 16767 and 16768 (September 16, 1959).

[53] June 19, 1959 Letter from Regional Director Bellport to California State Water Rights Board. (Emphasis added).

[54] Act of June 17, 1902, 32 Stat. 388; *see, e.g., California v. United States*, 438 U.S. 645 (1978).

County and downstream users, as well as the responsibilities to preserve fish and wildlife, take precedence over the needs to be served by out-of-basin diversions.[55] As discussed above, the State Water Board then included a separate permit condition, contrary to Reclamation's position at the time, which reflected the language of Proviso 2 and required releases for beneficial use by Humboldt County and other downstream users.[56] Interpreting the two provisos of the 1955 Act's section 2 as independent obligations is consistent with state water law principles and is consistent with the TRD permit conditions.

Implementation

Based upon this legal analysis, it is recommended that Reclamation conduct an appropriate level of analysis in response to a request for a release of water under Proviso 2 to determine the potential uses to which this water might be put, any other applicable legal requirements that must be addressed prior to releasing said water, whether existing operations or other authorities can fulfill the pending request, and then determine what additional actions may be appropriate under the circumstances. For example, Humboldt County may anticipate future consumptive uses that would be incompatible with instream fishery purposes; releases for such beneficial uses likely should not be made under Proviso 1 but as additional releases under Proviso 2. Conversely, the County or other downstream users could request releases that would be consistent with or duplicative of releases already being made pursuant to Proviso 1; under those circumstances, releases as requested under Proviso 2 may not be required. To the extent Proviso 1 water is not available, the Proviso 2 water, which may be put to any beneficial use, should be available to satisfy the articulated use. In addition, as stated at the outset of this opinion, a release made under Proviso 2 may also be part of the long-term management strategy regarding instream flows in the lower Klamath River.

Conclusion

Based on the analysis above, I conclude that the legislation authorizing the TRD contains separate and independent limitations on the TRD's integration with, and thus diversion of water to, the CVP. To the extent prior memoranda of the Solicitor's Office could be interpreted to reach contrary conclusions in this regard, those memoranda are hereby superseded.

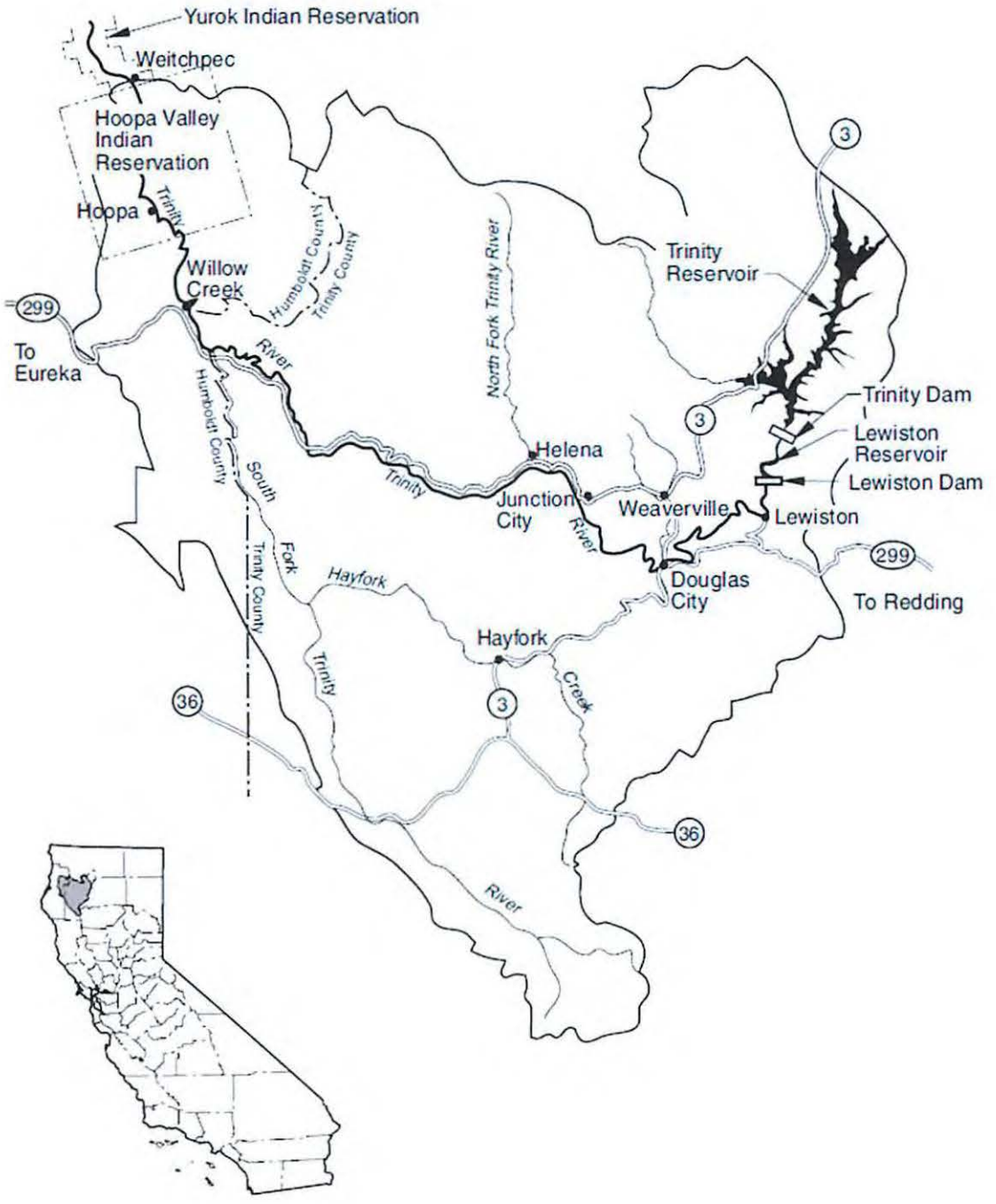
Attachments

Hilary C. Tompkins

[55] 1979 Grasslands Memorandum, *supra* at 3-4; 2000 ROD at 6, 25.

[56] The State Water Board also included a separate condition for Trinity County (Condition 10) in the TRD permits to allow for use in the County as provided in California Water Code Section 10505.

ATTACHMENT 1


Yurok Indian Reservation
Weitchpec
Hoopa Valley Indian Reservation
Hoopa
Trinity
Willow Creek
Humboldt County
Trinity County
299
To Eureka
River
Humboldt County
South Fork
Trinity County
Hayfork
Trinity
36
River
North Fork Trinity River
Trinity Reservoir
3
Trinity Dam
Lewiston Reservoir
Lewiston Dam
Helena
Junction City
Trinity
River
Weaverville
Lewiston
299
To Redding
Douglas City
Hayfork
Creek
3
36

ATTACHMENT 2

Public Law 386 CHAPTER 872

AN ACT

August 12, 1955
[H. R. 4663]

To authorize the Secretary of the Interior to construct, operate, and maintain the Trinity River division, Central Valley project, California, under Federal reclamation laws.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That, for the principal purpose of increasing the supply of water available for irrigation and other beneficial uses in the Central Valley of California, the Secretary of the Interior, acting pursuant to the Federal reclamation laws (Act of June 17, 1902, 32 Stat. 388, and Acts amendatory thereof or supplementary thereto), is authorized to construct, operate, and maintain, as an addition to and an integral part of the Central Valley project, California, the Trinity River division consisting of a major storage reservoir on the Trinity River with a capacity of two million five hundred thousand acre-feet, a conveyance system consisting of tunnels, dams, and appurtenant works to transport Trinity River water to the Sacramento River and provide, by means of storage as necessary, such control and conservation of Clear Creek flows as the Secretary determines proper to carry out the purposes of this Act, hydroelectric powerplants with a total generating capacity of approximately two hundred thirty-three thousand kilowatts, and such electric transmission facilities as may be required to deliver the output of said powerplants to other facilities of the Central Valley project and to furnish energy in Trinity County: *Provided*, That the Secretary is authorized and directed to continue to a conclusion the engineering studies and negotiations with any non-Federal agency with respect to proposals to purchase falling water and, not later than eighteen months from the date of enactment of this Act, report the results of such negotiations, including the terms of a proposed agreement, if any, that may be reached, together with his recommendations thereon, which agreement, if any, shall not become effective until approved by Congress. The works authorized to be constructed shall also include a conduit or canal extending from the most practicable point on the Sacramento River near Redding in an easterly direction to intersect with Cow Creek, with such pumping plants, regulatory reservoirs, and other appurtenant works as may be necessary to bring about maximum beneficial use of project water supplies in the area.

Central Valley project, Calif. Trinity River division.

43 USC 371 note.

SEC. 2. Subject to the provisions of this Act, 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 manner as will effectuate the fullest, most beneficial, and most economic utilization of the water resources hereby made available: *Provided*, That the Secretary is authorized and directed to adopt appropriate measures to insure the preservation and propagation of fish and wildlife, including, but not limited to, the maintenance of the flow of the Trinity River below the diversion point at not less than one hundred and fifty cubic feet per second for the months July through November and the flow of Clear Creek below the diversion point at not less than fifteen cubic feet per second unless the Secretary and the California Fish and Game Commission determine and agree that lesser flows would be adequate for maintenance of fish life and propagation thereof; the Secretary shall also allocate to the preservation and propagation of fish and wildlife, as provided in the Act of August 14, 1946 (60 Stat. 1080), an appropriate share of the

16 USC 661-666c.

costs of constructing the Trinity River development and of operating and maintaining the same, such costs to be non-reimbursable: *Provided further*, That not less than 50,000 acre-feet shall be released annually from the Trinity Reservoir and made available to Humboldt County and downstream water users.

SEC. 3. The Secretary is authorized to investigate, plan, construct, operate, and maintain minimum basic facilities for access to, and for the maintenance of public health and safety and the protection of public property on, lands withdrawn or acquired for the development of the Trinity River division, to conserve the scenery and the natural, historic, and archeologic objects, and to provide for public use and enjoyment of the same and of the water areas created by these developments by such means as are consistent with their primary purposes. The Secretary is authorized to withdraw from entry or other disposition under the public land laws such public lands as are necessary for the construction, operation, and maintenance of said minimum basic facilities and for the other purposes specified in this section and to dispose of such lands to Federal, State, and local governmental agencies by lease, transfer, exchange, or conveyance upon such terms and conditions as will best promote their development and operation in the public interest. The Secretary is further authorized to investigate the need for acquiring other lands for said purposes and to report thereon to the Committees on Interior and Insular Affairs of the Senate and House of Representatives, but no lands shall be acquired solely for any of these purposes other than access to project lands and the maintenance of public health and safety and the protection of public property thereon without further authorization by the Congress. All costs incurred pursuant to this section shall be nonreimbursable and nonreturnable.

Report to Congress.

SEC. 4. Contracts for the sale and delivery of the additional electric energy available from the Central Valley project power system as a result of the construction of the plants herein authorized and their integration with that system shall be made in accordance with preferences expressed in the Federal reclamation laws: *Provided*, That a first preference, to the extent of 25 per centum of such additional energy, shall be given, under reclamation law, to preference customers in Trinity County, California, for use in that county, who are ready, able and willing, within twelve months after notice of availability by the Secretary, to enter into contracts for the energy: *Provided further*, That Trinity County preference customers may exercise their option on the same date in each successive fifth year providing written notice of their intention to use the energy is given to the Secretary not less than eighteen months prior to said date.

Payments to Trinity County, Calif.

SEC. 5. The Secretary is authorized to make payments, from construction appropriations, to Trinity County, California, of such additional costs of repairing, maintaining, and constructing county roads as are incurred by it during the period of actual construction of the Trinity River division and as are found by the Secretary to be properly attributable to and occasioned by said construction. The Secretary is further authorized and directed to pay to Trinity County annually an in-lieu tax payment out of the appropriations during construction and from the gross revenues of the project during operation an amount equal to the annual tax rate of the county applied to the value of the real property and improvements taken for project purposes in Trinity County, said value being determined as of the date such property and improvements are taken off the tax rolls.

Payments to public-school districts.

Payments to the public-school districts in the project area affected by construction activities shall be made pursuant to existing law.

SEC. 6. There are hereby authorized to be appropriated for construction of the Trinity River division $225,000,000, plus or minus such amounts, if any, as may be justified by reason of ordinary fluctuations in construction costs as indicated by engineering cost indexes applicable to the type of construction involved herein, and, in addition thereto, such sums as may be required to carry out the provisions of section 5 of this Act and to operate and maintain the said development. Appropriation.

Approved August 12, 1955.

Public Law 387 — CHAPTER 873

AN ACT

To reemphasize trade development as the primary purpose of title I of the Agricultural Trade Development and Assistance Act of 1954.

August 12, 1955
[S. 2253]

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled. That section 103 (b) of the Agricultural Trade Development and Assistance Act of 1954 is amended by striking out "$700,000,000" and inserting in lieu thereof "$1,500,000,000. This limitation shall not be apportioned by year or by country, but shall be considered as an objective as well as a limitation, to be reached as rapidly as possible so long as the purposes of this Act can be achieved within the safeguards established." Agricultural trade development. 68 Stat. 456. 7 USC 1703 (b).

SEC. 2. Section 106 of such Act is amended by adding the following: "The Secretary of Agriculture is also authorized to determine the nations with whom agreements shall be negotiated, and to determine the commodities and quantities thereof which may be included in the negotiations with each country after advising with other agencies of Government affected and within broad policies laid down by the President for implementing this Act." 68 Stat. 457. 7 USC 1706.

Approved August 12, 1955.

Public Law 388 — CHAPTER 874

AN ACT

To amend the Federal Property and Administrative Services Act of 1949 to make temporary provision for making payments in lieu of taxes with respect to certain real property transferred by the Reconstruction Finance Corporation and its subsidiaries to other Government departments.

August 12, 1955
[H. R. 6182]

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the table of contents contained in the first section of the Federal Property and Administrative Services Act of 1949 is hereby amended by inserting immediately below "Sec. 605. Effective date." the following: Federal property transferred from RFC. 63 Stat. 377; 64 Stat. 583. 40 USC 471 note.

"TITLE VII—PROPERTY TRANSFERRED FROM THE RECONSTRUCTION FINANCE CORPORATION

"Sec. 701. Declaration of Policy.
"Sec. 702. Definitions.
"Sec. 703. Property transferred by the Reconstruction Finance Corporation.
"Sec. 704. Limitations.
"Sec. 705. Effective date."

ATTACHMENT 3

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

Central Valley Project, California

CONTRACT BETWEEN THE UNITED STATES AND
HUMBOLDT COUNTY

1. THIS CONTRACT, made this 19th day of June 1959, in pursuance generally of the act of Congress approved June 17, 1902 (32 Stat. 388), and all acts of Congress amendatory thereof or supplementary thereto, including the act of Congress approved August 12, 1955 (69 Stat. 719), all of which are commonly known and referred to as the Federal reclamation laws, between THE UNITED STATES OF AMERICA, hereinafter referred to as the "United States," represented by the officer executing this contract, and HUMBOLDT COUNTY, a political subdivision of the State of California, duly organized and existing pursuant to the laws thereof, with its principal place of business in the town of Eureka, State of California, hereinafter referred to as the "County";

WITNESSETH, THAT:

EXPLANATORY RECITALS

2. WHEREAS, the Bureau of Reclamation, of the United States Department of the Interior, has been duly authorized to construct and operate the Trinity River Division of the Central

Valley Project, which Division will include Trinity and Lewiston Dams and appurtenant works, for the purpose of the conservation of water resources, which dams are to be located respectively in the County of Trinity, State of California, on the Trinity River, at or about N. 34° 42' E., 2,308 feet from the Southwest corner of Section 15, T. 33 N., R. 8 W., M.D.B.&M., and at or about N. 73° 56' E., 3,777 feet from the Southwest corner of Section 8, T. 33 N., R. 8 W., M.D.B.&M., and which dams will affect flows of the Trinity River; and

3. WHEREAS, the County has appeared as an interested party at the hearing on the 29th day of December 1958, before the State Water Rights Board of the State of California with reference to the issuance of permits on Applications No. 5627, 5628, 15374, 15375, 15376, 16767, 16768, and 17374 for the appropriation of unappropriated water of the Trinity River, which have been filed by the United States; and

4. WHEREAS, Section 8 of the said Reclamation Act of June 17, 1902, provides as follows:

> "That nothing in this act shall be construed as affecting or intended to affect or to in any way interfere with the laws of any State or Territory relating to the control, appropriation, use, or distribution of water used in irrigation, or any vested right acquired thereunder and the Secretary of the Interior, in carrying out the provisions of this act, shall proceed in conformity with such laws, and nothing herein shall in any way affect any right of any State or of the Federal Government or of

any landowner, appropriator, or user of water in, to, or from any interstate stream or the waters thereof: Provided, That the right to the use of water acquired under the provisions of this act shall be appurtenant to the land irrigated and beneficial use shall be the basis, the measure, and the limit of the right."

and

5. WHEREAS, the said act of August 12, 1955, provides in Section 2 thereof in part as follows:

". . . That not less than 50,000 acre-feet shall be released annually from the Trinity Reservoir and made available to Humboldt County and downstream water users."

and

6. WHEREAS, it is desired to establish by terms of this contract operating criteria the observance of which will not impair rights to the reasonable and beneficial use of water originating above Trinity Dam;

NOW, THEREFORE, in consideration of the provisions hereinabove set out and in compliance with the hereinabove quoted provisions of the said acts, it is hereby agreed by and between the parties hereto as follows:

7. The United States shall have the right to divert and store the waters of the Trinity River and its tributaries, and the right to use the water so stored for beneficial use for irrigation and other purposes and for the generation of electric energy in connection with the Central Valley Project.

8. The United States agrees to release sufficient water from Trinity and/or Lewiston Reservoirs into the Trinity River so that not less than an annual quantity of 50,000 acre-feet will be available for the beneficial use of Humboldt County and other downstream users.

9. Authorized representatives of the County shall have access at all reasonable times during office hours to records and computations pertaining to releases from said reservoirs and, upon reasonable request, shall be furnished copies of such records and computations.

EFFECT OF WAIVER OF BREACH

10. The waiver of a breach of any of the provisions of this contract shall not be deemed to be a waiver of any other provisions hereof or of a subsequent breach of such provisions.

RESPONSIBILITY FOR INTERRUPTION

11. In the event the performance, in whole or in part, of the obligations of the respective parties under this contract is hindered, interrupted, or prevented by war, strikes, lockouts, fires, acts of God, or by other similar or different acts of civil or military authorities, or by any cause beyond the control of the respective parties hereto, whether similar to the causes herein specified or not, such obligations of the respective parties under this contract shall be suspended to the extent and for the time that performance thereof is prevented or affected by such hindrance,

interruption, or prevention, but due diligence shall be observed by the respective parties hereto, so far as lies in their power, in performing their respective obligations under this contract.

OFFICIALS NOT TO BENEFIT

12. No Member of or Delegate to Congress or Resident Commissioner shall be admitted to any share or part of this contract or to any benefit that may arise herefrom, but this restriction shall not be construed to extend to this contract if made with a corporation or company for its general benefit.

SUCCESSORS AND ASSIGNS BOUND

13. This contract shall be binding upon and inure to the benefit of the successors and assigns of the respective parties hereto.

IN WITNESS WHEREOF, the parties hereto, by their respective officers thereunto duly authorized, have duly executed these presents on the day and year first hereinabove written.

THE UNITED STATE OF AMERICA

By _____
Regional Director, Region 2
Bureau of Reclamation

ATTEST:

_____
County Clerk of the County of Humboldt

HUMBOLDT COUNTY

By _____
Chairman of the Board of Supervisors

BOARD OF SUPERVISORS, COUNTY OF HUMBOLDT, STATE OF CALIFORNIA

Certified copy of portion of proceedings, Meetings of May 1, 1959

IN THE MATTER OF EXECUTING CONTRACT BETWEEN DEPARTMENT OF THE INTERIOR, BUREAU OF RECLATION, AND THE COUNTY OF HUMBOLDT:

Upon the motion of Supervisor Pettersen, seconded by Supervisor Robertson, Sam B. Merryman, Jr., Chairman of this Board of Supervisors, is hereby authorized and directed to sign a contract between the United States Department of the Interior, Bureau of Reclamat on, and the County of Humboldt regarding the Trinity River Division of the Central Valley Project.

AYES: Supervisors— Lindley, Robertson, Pettersen, Merryman
NOES: Supervisors— None
ABSENT: Supervisors— Bareilles

STATE OF CALIFORNIA, }
County of Humboldt } ss.

I, FRED J. MOORE, JR., County Clerk of the County of Humboldt, State of California, and ex-officio Clerk of the Board of Supervisors of the County of Humboldt, do hereby certify the foregoing to be full, true and correct copies of the original orders made in the above entitled matters by said Board of Supervisors, at a meeting held in Eureka, California, on May 1, 1959 and as the same now appears of record in my office.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the Seal of said Board of Supervisors this 4th day of May, 1959.

County Clerk and ex-officio Clerk of the Board of Supervisors of the

ATTACHMENT 4

Permit No. 11973

1. The amount of water appropriated shall be limited to the amount which can be beneficially used and shall not exceed 1500 cubic feet per second by direct diversion from January 1 to December 31 of each year; all as more explicitly set forth under Paragraph 2 of the supplement to this approved application. The amount of water directly diverted under this permit and permits issued pursuant to Applications 5628, 15374 and 15375 shall not exceed a total of 3200 cubic feet per second.

2. The maximum amount herein stated may be reduced in the license if investigation so warrants.

3. Construction work shall be completed on or before December 1, 1964.

4. Complete application of the water to the proposed use shall be made on or before December 1, 1990.

5. Progress reports shall be filed promptly by permittee on forms which will be provided annually by the State Water Rights Board until license is issued.

6. All rights and privileges under this permit including method of diversion, method of use and quantity of water diverted are subject to the continuing authority of the State Water Rights Board in accordance with law and in the interest of the public welfare to prevent waste, unreasonable use, unreasonable method of use or unreasonable method of diversion of said water.

7. Permittee shall maintain a daily record of inflow into and outflow from Trinity Reservoir, volumes in storage and water surface elevations. Permittee shall maintain like records with respect to Lewiston Reservoir. Permittee shall provide and maintain such measuring facilities as may be necessary for the formulation of said records. Permittee shall make said records of inflow, outflow, volumes in storage and water surface elevations available to the State Water Rights Board and shall allow authorized representatives of said Board access to its project works and properties for the purpose of securing supplemental information.

8. Permittee shall at all times bypass or release over, around or through Lewiston Dam the following quantities of water down the natural channel of Trinity River for the protection, preservation and enhancement of fish and wildlife from said dam to the mouth of said stream:

L. K. Hill
L. K. Hill
Executive Officer

October 1 through October 31 - 200 cfs

November 1 through November 30 - 250 cfs

December 1 through December 31 - 200 cfs

January 1 through September 30 - 150 cfs

Any water released through said Lewiston Dam for use in the fish hatchery now under construction adjacent thereto shall be considered as partial fulfillment of the above schedule.

9. Permittee shall release sufficient water from Trinity and/or Lewiston Reservoirs into the Trinity River so that not less than an annual quantity of 50,000 acre-feet will be available for the beneficial use of Humboldt County and other downstream users.

10. This permit shall be subject to the prior rights of the county in which the water sought to be appropriated originates to use such water as may be necessary for the development of the county, as provided in Section 10505 of the Water Code of California.

11. The Board retains continuing jurisdiction for the purpose of coordinating terms and conditions with other applications of the United States in furtherance of the Central Valley Project including but not limited to Applications 5625, 5626, 9363, 9364, 9365, 9366, 9367, 9368 and 10588, when acted upon, and for a period of two years thereafter, which period may be extended upon hearing and further order of the Board.

12. Subject to the existence of long-term water delivery contracts between the United States and public agencies and subject to the compliance with the provisions of said contracts by said public agencies, this permit is further conditioned as follows:

(a) The right to the beneficial use of water for irrigation purposes, except where water is distributed to the general public by a private agency in charge of a public use, shall be appurtenant to the land on which said water shall be applied,

L. K. Hill
L. K. Hill
Executive Officer

subject to continued beneficial use and the right to change the point of diversion, place of use, and purpose of use as provided in Chapter 10 of Part 2 of Division 2 of the Water Code of the State of California and further subject to the right to dispose of a temporary surplus.

(b) The right to the beneficial use of water for irrigation purposes shall, consistent with other terms of this permit, continue in perpetuity.

L. K. Hill

L. K. Hill
Executive Officer

ATTACHMENT 5

United States Department of the Interior
OFFICE OF THE SOLICITOR
SACRAMENTO REGION
2800 COTTAGE WAY
ROOM E-2753
SACRAMENTO, CALIFORNIA 95825

Cat.

July 1, 1974

Memorandum

To: Regional Director, Bureau of Reclamation, Sacramento

From: Assistant Regional Solicitor

Subject: Request for opinion re authority of the Secretary of the Interior to alter present functions and accomplishments of Trinity River Division, Central Valley Project

I.

The question has been raised by your office as to whether operations of the Trinity River Division might legally be altered to provide flood control benefits downstream from Trinity and Lewiston Dams.

Any authority of the Secretary of the Interior to release water from Trinity or Lewiston Dams for the purpose of flood control downstream must be found in the statutory grant of power to the Secretary to operate the Trinity River Division. Federal Trade Comm. v. Raladam, 283 U.S. 643. It is my opinion that such authority cannot be found in the purpose of the Trinity River Division Act, nor in its integration into the Central Valley Project either directly through the operational provisions of Section 2 of the Trinity River Division Act, or indirectly through incorporation of the stated purposes of the Central Valley Project Act, and that no such releases of water can lawfully be made.

Section 1 of the Trinity River Division Act, 69 Stat. 719 (P.L. 386, 84th Cong., 1st Sess.), gives the purpose of the Division as ". . . increasing the supply of water available for irrigation and other beneficial uses in the Central Valley of California . . . ." (emphasis supplied). All other provisions of the Act are wholly consistent with this purpose. The Division is authorized "as an addition to and an integral part of the Central Valley Project." (Section 1, 69 Stat. 719) whose purpose is to provide benefits specifically to the Central Valley of California, and the integration is directed to be made in the "fullest, most beneficial, and most economic" (Section 2, 69 Stat. 719) manner possible. Utilizations

of water benefitting the Trinity Basin, on the other hand, are set forth as exceptions to full integration. The release of water into the Trinity River Basin does not further the stated purpose of use in the Central Valley and is, therefore, not authorized by the purpose clause of the Division Act.

Moreover, the specifically authorized downstream releases provided for in Section 2 of the Act do not give any authorization for other generally beneficial releases. The maxim of statutory construction is that express mention of one thing excludes all unmentioned things from the scope of the legislation. The enumeration of exclusions from the operation of a statute indicates that it should apply to all cases not specifically excluded. Herzberg v. Finch, 321 F.Supp. 1367 (S.D.N.Y., 1971).

The lack of Congressional intent to authorize general beneficial releases downstream, especially for flood control, is accurately reflected in the legislative history of the Trinity River Division Act. No significant flood control benefit had been foreseen at any time since the Project was originally conceived. State Water Plan of 1931, Bulletin No. 25 (Engle, Central Valley Project Documents, Vol. I, pp. 282-284, 295-297) (Trinity Dam Project excluded from flood control element of State Water Plan); Finding of Feasibility, House Document No. 53, 83d Cong., 1st Sess. (Engle, Central Valley Project Documents, Vol. I, p. 853) (no allocation of cost to flood control benefit due to the Project); Hearings before the Subcommittee of the Committee on Interior and Insular Affairs, House of Representatives, 84th Cong., 1st Sess., on ... H.R. 4663, pp. 51-52 (Testimony that any flood control benefits would be so minor that they could be ignored); Report of House Committee on Interior and Insular Affairs, House Report No. 602, 84th Cong., 1st Sess., p. 5 (no recognition of flood control benefits, though other nonreimbursable costs are cited); Report of Senate Committee on Interior and Insular Affairs, Senate Report No. 1154, 84th Cong., 1st Sess., p. 6 (no recognition of flood control benefits, though other nonreimbursable costs are cited). In the committee reports and in debate the only concern expressed for downstream interests was that they receive a minimum adequate supply of water for their needs, not that they be protected from any overabundance. Report of House Committee on Interior and Insular Affairs, House Report No. 602, 84th Cong., 1st Sess., pp. 5, 9; Report of Senate Committee on Interior and Insular Affairs, Senate Report No. 1154, 84th Cong., 1st Sess., p. 8; 101 Cong. Rec. 8880-8881, remarks of Representative Scudder (Humboldt-Del Norte); 101 Cong. Rec. 12315, remarks of Senator Kuchel (California). Therefore, any omission of mention of flood control releases or other releases beneficial to downstream interests from the downstream releases authorized by the Act would appear to be entirely conscious and intentional.

Section 2 of the Act provides for the manner in which the operation of the Trinity River Division is integrated into the Central Valley Project. It directs that "the operation of the Trinity River Division shall be integrated and coordinated . . . with the other features of the Central Valley Project . . . in such manner as will effectuate the fullest, most beneficial, and most economic utilization of the water resources hereby made available." Section 2, 69 Stat. 719 (P.L. 386, 84th Cong., 1st Sess.) The words "fullest, most beneficial, and most economic utilization" describe the manner of integration with the Central Valley Project, not the general utilization of the impounded water. The directive does not authorize any use or any manner of use of water which is not or cannot be integrated into the Central Valley Project, hence no authorization for flood control in the Trinity Valley.

Even if the purposes of the Central Valley Project as a whole are incorporated into the Trinity River Division authorization by the language of integration, the flood control purposes set forth in the Central Valley Project Act, 50 Stat. 844 (P.L. 392, 75th Cong., 1st Sess.) still would not authorize flood control in the Trinity River Basin. The legislative history of the Central Valley Project indicates clearly that the flood conditions meant to be corrected by the Project were those occurring in the Sacramento and San Joaquin River Basins, not flood conditions existing generally in the State. This intention is reflected in the total lack of discussion of flood problems in other basins, the detailed discussion of the causes and possible solutions to the problem of floods in the Central Valley, and the fact that the Trinity Dam Project was never seen to contribute any flood control benefit at all to the Project. State Water Plan of 1931, Bulletin No. 25 (Engle, Central Valley Project Documents, Vol. I, pp. 281-284, 294-297); Finding of Feasibility, House Doc. No. 53, 83d Cong., 1st Sess. (Engle, Central Valley Project Documents, Vol. I, p. 853).

Therefore, since no statutory source of power can be found for the Secretary to alter operation of the Division for flood control or other purposes generally beneficial to downstream interests, it is my conclusion that the Secretary has no authority to make such releases of water.

II.

Your office has also requested interpretation of the last proviso of Section 2 of the Act as it relates to releases authorized for

fish preservation. The proviso reads:

> ". . . That not less than 50,000 acre-feet shall be released annually from the Trinity Reservoir and made available to Humboldt County and downstream water users." Section 2, 69 Stat. (P.L. 386, 84th Cong., 1st Sess.)

The water released for fishery purposes is not consumed, but remains available later for use by other downstream users. In addition, the term "downstream water user" is not specific, but appears to refer to all downstream users generally, including the fishery.

Therefore, it is my opinion that since the purpose of the Division is to provide as much water as possible to the Central Valley, Section 1, 69 Stat. 719 (P.L. 386, 84th Cong., 1st Sess.) the 50,000 acre-feet referred to in the last proviso of Section 2 should be construed to include the water necessary to maintain minimum specified flows for fish preservation and propagation rather than being considered to be in addition to such flows.

Rita Singer

Rita Singer
Assistant Regional Solicitor
Sacramento Region

JGoldsmith:RSinger:br

ATTACHMENT 6

SACRAMENTO REGION
2800 COTTAGE WAY
ROOM E-2753
SACRAMENTO, CALIFORNIA 95825

WPRS INTERPRETATION OF PL 84-386 REF 50,000 AF SET ASIDE FOR DOWN STREAM USERS.

JAN 21 1977

Memorandum

To: Field Supervisor, Division of Ecological Services
USFWS Sacto.

From: Regional Solicitor

Subject: Trinity River Division, CVP - Reconsideration of July 1, 1974 Memorandum to Regional Director, Bureau of Reclamation, Concerning Section 2 of the Trinity River Division Act

Pursuant to your December 13, 1976 request, I have reconsidered this office's previous interpretation of Section 2 of the Trinity River Division Act (69 Stat. 719; P.L. 84-386) as set forth in the memorandum identified above (copy attached). That Act clearly states that the Trinity River Division was intended to serve multiple purposes including (1) enhancement of fish and wildlife resources by maintaining the flow of the Trinity River below the applicable point of diversion (i.e. Clear Creek Tunnel) at a minimum of 150 c.f.s. and by maintaining the flow of Clear Creek below the applicable point of diversion (i.e. Spring Creek Tunnel) at a minimum of 15 c.f.s.; and (2) providing a water supply to Trinity River users downstream from Trinity Reservoir by making a minimum annual release from that Reservoir of 50,000 acre-feet. As stated in our July 1, 1974 memorandum to the Regional Director, these are not necessarily conflicting purposes. Rather, releases from Trinity Reservoir for downstream use coincides with the requirement to maintain flows downstream from the diversion points set forth above. It is possible, however, that the flow of the Trinity River will drop below the 150 c.f.s. minimum at points downstream from diversions made by downstream users, thereby causing harm to fish resources. However, should that reduction in the flow of the Trinity River occur, the Act grants the Secretary of the Interior broad authority to increase the size of the releases

from the Trinity facilities should such additional releases be deemed necessary in order to serve fish and wildlife enhancement purposes. (See our December 6, 1973 memorandum to the Regional Director concerning this issue, a copy of which is attached.)

In summary, we cannot find specific terminology in the Act itself or any reference in the legislative history relating to the Trinity River Division Act which supports the premise stated in your memorandum of December 13, 1976 that the Act does or was intended to provide separate and distinct "blocks of water" for fish preservation and propagation purposes and we cannot, therefore, support your interpretation. We do, however, find the authority mentioned hereinabove whereby the Secretary may make such additional releases for this purpose as he deems necessary

In order to clarify treatment of this issue in our July 1, 1974 memorandum to the Regional Director, it is hereby amended by addition of the following at the end of the last paragraph on page 4 of that memorandum:

> ; however, it should be noted that the proviso quoted above does not limit downstream use to 50,000 acre-feet annually. Rather, as pointed out in our memorandum of December 6, 1973, the Secretary has discretionary authority to release additional water for the purpose of preserving or propagating fish resources.

Charles R. Renda
Regional Solicitor
Sacramento Region

Enclosures - 2

cc: Regional Director, Bureau of Reclamation (w/o encl.)

JETurner/cb

ATTACHMENT 7

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF THE SOLICITOR
WASHINGTON, D.C. 20240

DEC 7 1979

Memorandum

To: Assistant Secretary, Land and Water Resources

From: Solicitor

Subject: Proposed Contract with Grasslands Water District

A question has been raised whether the Department may amend its contract with the Grasslands Water District in the Central Valley Project (CVP) to provide that, in critically dry years, the District be accorded equal priority with agricultural contractors. The District is usually delivered 50,000 acre-feet of water primarily for waterfowl management, under the terms of the Act of August 27, 1954, Pub. L. No. 83-674, 68 Stat. 879, 16 U.S.C. § 695d, et seq., which was recently amended by the Fish and Wildlife Improvement Act of 1978, Pub. L. No. 95-616, 92 Stat. 3115.

The question is whether equal priority is consistent with the applicable CVP authorizations which establish general categories of priorities for CVP operations, as follows: (1) river regulation, improvement of navigation, and flood control; (2) irrigation and "domestic uses;" (3) power; and (4) fish and wildlife and "other beneficial uses."1/

The 1954 Act provides that the "entire Central Valley Project" theretofore authorized and reauthorized, "is hereby reauthorized and declared to be for the purposes set forth in said acts, and also for the use of the waters thereof for fish and wildlife purposes, subject to such priorities as are applicable [under previous authorizations]." One of my predecessors held that the express reference to the use of waters for fish and wildlife in the 1954 Act is "simply a more definitive specification" of "other beneficial uses" which were an authorized project purpose (and lowest priority) ever since the 1937 reauthorization of the project. See 50 Stat. 844, 850; Opinion by Acting Solicitor Armstrong, "Allocations for fish and wildlife conservation on Central Valley Project," Nov. 15, 1954, p. 3. The Solicitor went on to point out: "The condition in [section 1 of] Public Law 674 that the use

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1/ See Pub. L. No. 75-392, 50 Stat. 844 (Aug. 26, 1937).

of such waters for wildlife conservation purposes shall be subject to such priorities as are applicable under prior authorizations also is simply a specific recognition by the Congress of the existence of the priorities originally specified."

I agree with and reaffirm this opinion. It does not, however, directly address the question here presented. For the same reason, the provisions of section 6 of the 1954 Act, which authorized contracts to supply CVP water to certain wildlife areas on an "if and when available" basis, begs the question presented here of how much water can be made "available" by the Secretary under general CVP priorities. As noted above, the 1954 Act was amended in 1978, but in a way not relevant here.

A narrow, technical reading of the CVP statutory priorities might suggest that in every situation throughout the CVP deficiencies shared equally by irrigation and fish and wildlife are unlawful; in other words, to require that a higher priority must be totally satisfied before a lower one can be met. I am unaware of any legislative history of CVP statutory authorities which supports such a theory.

The Secretary has never applied the priorities or operated the project that way. Rather, the allocation of relative shortages or benefits among priorities in any specific situation has been regarded as a discretionary matter within the Secretary's judgment.

For example, this kind of narrow interpretation — placing total emphasis on flood control (the highest priority) — would reduce water storage in reservoirs for irrigation. Maximizing flood protection would dictate that reservoirs be kept nearly empty certain times of the year in the event massive precipitation and runoff occurred. Operation that way would limit storage of water for irrigation and other uses later in the year. But reservoirs are not operated to wring every conceivable bit of flood storage capability out of the storage space; instead, they are operated according to Corps of Engineers criteria which strike a reasonable balance between the need for stored water and the remote possibility of huge storms.

To give a specific example, the Folsom Reservoir on the American River above Sacramento is not sufficient, in the judgment of the Corps of Engineers and the Bureau, to protect Sacramento from the worst conceivable flood (the so-called "standard project flood"). Additional flood control is one justification for the proposed Auburn dam, authorized to be built upstream from Folsom. Yet Folsom reservoir is not, in advance of completion of the Auburn dam, kept at its lowest possible storage level in the spring even though additional protection from

an unexpected, and highly improbable, standard project flood (estimated to occur once every thousand years) might be obtained if it were.2/

To take another example, many CVP contracts provide that municipal and industrial uses are cut in critically dry years after irrigation is cut, even though irrigation and "domestic uses" are of equal statutory priority. To take a third, more immediate example, in the 1976-77 drought Grasslands was delivered water on an equal priority with municipal and industrial users, and ahead of irrigators, because of very serious threat to migratory waterfowl.

Operating a huge, multi-purpose project like the CVP is a complicated undertaking, which precludes applying the order of priorities in any individual situation in an absolute, inflexible way. Rather, the Bureau has strived to coordinate disparate functions in a way which serves them all in the project as a whole, while maintaining a balance which fairly reflects the authorized priorities of purpose. The fact that Congress has typically provided, in adding new features to the project, that the new features shall be integrated into the overall project reinforces this view that it is the project as a whole which supplies the context for applying the statutory priorities.3/

On occasion the Congress has specifically limited the Secretary's discretion in meeting the general CVP priorities. For example, in authorizing the Trinity River Division of the CVP in 1955, Congress specifically provided that in-basin flows (in excess of a statutorily prescribed minimum) determined by the Secretary to be necessary to meet in-basin needs take precedence over needs to be served by out-of-basin diversion. See Pub. L. No. 84-386, §2. In that case, Congress'

2/ While Congress specifically provided that the Auburn Project be operated for flood control in accordance with Corps of Engineers criteria, 43 U.S.C. § 616bbb, Congress made no such direction in the Folsom authorization. See 58 Stat. 900.

3/ See, e.g., Pub. L. No. 84-386, 69 Stat. 719 (Aug. 12, 1955) (Trinity River Division authorization), § 2, 43 U.S.C. § 616bbb; Pub. L. No. 89-161, 79 Stat. 615 (Sept. 2, 1965) (Auburn-Folsom South Unit authorization), § 2. The Auburn-Folsom South provision is typical, providing in pertinent part that the unit be "integrated and coordinated, from both a financial and an operational standpoint, with the operation of other features of the Central Valley project . . . in such manner as will effectuate the fullest, most beneficial, and most economic utilization of the water resources hereby made available." 43 U.S.C. § 616bbb.

usual direction that the Trinity River Division be integrated into the overall CVP, set forth at the beginning of section 2, is expressly modified by and made subject to the provisos that follow giving specific direction to the Secretary regarding in-basin needs.

Applying the general statutory priorities in the context of the project as a whole accords both with past practice and Congress' intent. The priorities have meaning in the sense that it would be improper for the Secretary to devote most CVP-stored water primarily to power production or fish and wildlife protection while shorting other purposes of a higher priority. The record shows that the vast bulk of the CVP yield of nearly 8 million acre-feet is devoted to irrigation and other uses of a higher statutory plane than fish and wildlife protection. Thus the statutory priorities are fairly being met, even if they have not slavishly dictated every individual decision in the thousands of operating judgments that must be made in a project this large and complex.

In short, the congressional priorities must not be applied in the context of a single contract or a single small facet of an enormous project, but from the perspective of project operation as a whole. For this reason, it is plain that the Grasslands contract is consistent with the statutory priorities.

(sgd) Leo Krulitz

SOLICITOR

CITY OF STOCKTON
OFFICE OF THE CITY ATTORNEY
CITY HALL
425 NORTH EL DORADO STREET
STOCKTON, CA 95202-1997
TELEPHONE (209) 937-8333
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January 30, 2018

Katrina Harrison, Project Manager
Bureau of Reclamation, Bay-Delta Office
801 I Street, Suite 140
Sacramento, CA 95814-2536

Via E-Mail Transmission
kharrison@usbr.gov

Re: City of Stockton Comments on the Bureau of Reclamation's Notice of Intent to Prepare an Environmental Impact Statement, "Revisions to the Coordinated Long-term Operation of the Central Valley Project and State Water Project, and Related Facilities."

The City of Stockton ("Stockton" or "City") understands the Bureau of Reclamation ("Bureau" or "Reclamation") intends to prepare a programmatic environmental impact statement (EIS) for analyzing potential modifications to the continued long-term operation of the Central Valley Project (CVP) in a coordinated manner with the State Water Project (SWP). Reclamation seeks suggestions and information on the alternatives and topics to be addressed and any other important issues related to the proposed action. The following comments are submitted on behalf of the City of Stockton:

I. Stockton's Participation as an In-Delta Municipal Water User

With a population of approximately 315,000, Stockton is the largest municipality within the Sacramento-San Joaquin River Delta (Delta). The City is an In-Delta Municipal water user where drinking water is diverted from the San Joaquin river at Empire Tract for municipal and industrial purposes pursuant to a State water right. The well-being of the City, its residents, and its economy is inextricably linked to the Delta, the quantity and quality of Delta water supplies and the Delta ecosystem. Consequently, the City requests that Reclamation invite Stockton to participate during this process as provided under NEPA Regulation 40 C.F.R. § 1501.7(a)(1).

II. Adhere to Local Water Rights, Water Flow and Water Quality Standards Intended to Protect Delta Water Supplies

As outlined by the Notice of Intent, Reclamation's EIS will investigate ways to increase water supply deliveries and quality for South of Delta exporters. The State Department of Water Resources' (DWR) WaterFix as a probable alternative has proposed to establish new diversions upstream of significant existing drinking water intakes in the Delta, including the City of Stockton intake on Empire Tract, the Contra Costa Water District intake, and the Barker

Slough intake to the North Bay Aqueduct that serves Solano and Napa counties. There is a significant potential that with Reclamation's intent to increase deliveries through the CVP whether through the Waterfix as the preferred alternative or not, Delta water quality will be degraded at these municipal intakes resulting in increased salinity and greater proliferation of biological contaminants such as harmful bacteria.

By substantially degrading Delta water quality and making Stockton's water supply less reliable, any proposed change in operations or project alternative must be consistent with the Watershed Protection Act and Delta Protection Act as well as the Delta Reform Act of 2009 "to protect and enhance the quality of water supply from the Delta" (Wat. Code, § 85001). Additionally, the Delta Reform Act has as its goals to:

> Achieve the two coequal 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.

And to:

> Protect, maintain, and, where possible, enhance and restore the overall quality of the Delta environment, including, but not limited to, agriculture, wildlife habitat, and recreational activities. (Wat. Code, § 85054.)

Any change in project operations or new project alternatives must also be consistent with these goals, and with the stated objectives of the Delta Stewardship Council for the CSO Amendments, which provide that new or improved Delta conveyance infrastructure should:

> 1. Enhance the Delta ecosystem, including restoring more natural flows. 2. Protect or enhance water quality.... 3. Increase the reliability of water available for export supplies. 4. Increase resiliency of the state's water supply systems in the face of future threats related to climate change and levee failures due to sea-level rise, more frequent flood events, and earthquakes. 5. Contribute to achieving improved water quality both in the Delta and for water quality delivered to the end users of the conveyance system. (Draft PEIR, p. 3-3).

III. Impacts to Stockton's Water Supply due to degraded Delta Water Quality should be thoroughly Investigated and Mitigated

With the potential to substantially degrade the quality of water available to Stockton, and rendering the City's primary water supply unusable for many days of the year, the EIS must perform a detailed evaluation of the impacts of any change in project operations or the adoption of any project alternatives. Stockton first identified this concern over eight (8) years ago, at the

start of the Project and under its current title, "Waterfix" environmental review process, where it urged that Reclamation and the State analyze their Project's impact on the City's Delta water supply and has repeated these concerns in comments on each version of the EIR/EIS. This continues to be the case where the comments submitted have been largely ignored or dismissed as of minor impact without appropriate review, analysis and proposed mitigation.

The enclosed testimony and reports were submitted as part of the City's testimony in the WaterFix water rights hearing before the State Water Board. They show the importance of the City's Delta water source, including how the development of that supply has helped the over-drafted Eastern San Joaquin groundwater basin recovery effort. It further shows how the WaterFix would substantially degrade the quality of water at Stockton's intake, resulting in new and substantially more severe impacts to the City's drinking water supply than disclosed in the WaterFix EIR/EIS (see enclosed Exhibits A-E).

As demonstrated in the enclosed technical report by a recognized expert in Delta water quality and hydrodynamic modeling, Dr. Susan Paulsen (Exhibits D & E, collectively, "Exponent Reports"), the information that was provided in the WaterFix EIR/EIS, and its determination regarding the significance of impacts to the City's water supply was inadequate because it:

(1) evaluated WaterFix-related water quality impacts at the wrong location–a location that is not representative of existing conditions at the City's intake or those that would occur as a result of the project;

(2) does not adequately address potential for increases in microcystis blooms, which are a risk to humans and wildlife. The Exponent Reports demonstrate that the WaterFix will substantially degrade the quality of Stockton's water supply, increasing the time that it is unusable by up to 150 percent (150%);

(3) failed to evaluate the range of impacts that would occur under the WaterFix as it would operate, or against the appropriate baseline, thus dramatically understating the frequency and magnitude of significant impacts; and

(4) used an inappropriate methodology for calculating and presenting impacts that effectively hid significant day-to-day changes in water quality by burying changes within long-term monthly average data, among other flaws.

Exponent used DWR model input files and the DSM2 water quality model to obtain results to describe WaterFix water quality impacts at Stockton's drinking water intake location. The analysis concludes that the WaterFix will result in substantial changes in the source and quality of water present at the City's drinking water intake on Empire Tract. Under most

operational scenarios, a greater fraction of the water at the City's drinking water intake will come from the San Joaquin River rather than the Sacramento River enabling higher salinity and other water quality changes as a result. Specifically, the WaterFix EIR/EIS used a whole-Delta analysis approach that does not consider area-specific changes as they relate to diversion and beneficial use. Reclamation's EIS must contain sufficient analysis and mitigation of potential impacts to Stockton's water supply prior to any decisions to change long-term operations or support for a project including the Waterfix or other project alternatives.

IV. No Redirection of Impacts to other In-Delta Municipal water users from Modified Operations with and without New or Proposed Facilities

Any modified operations or proposed new facilities that would increase water deliveries could result in substantial reductions in Delta outflow/variability, impact X2 management and increase the risk that delta smelt may become extinct and seriously impact other covered species. Analysis of the impacts of these possible changes should be completed to fully characterize and resolve the problem. As developed under this EIS, the impacts of the proposed actions must not be redirected to or become the mitigative responsibility of other In-Delta Municipal water users as a methodology of "sharing of water and responsibilities in the Delta" as noted in the Notice of Intent.

V. Conclusion

As Reclamation reviews the public scoping comments received and develops a path forward, the City reasserts several vital points. For this EIS effort to be successful, Reclamation must:

- Be consistent with all relevant federal and state environmental statutes;
- Maintain and restore the health of the Delta estuary and California's fisheries;
- Protect the quality and availability of local water resources in the Delta and north-of-Delta regions;
- Vigorously engage with In-Delta Municipal water users and respond to their concerns in a thoughtful, substantive and responsible manner incorporating assurances as to their concerns over potential impacts wherever appropriate; and
- Achieve the co-equal goals as established by State law and supported by Reclamation, which means addressing not just water supply reliability to south of Delta users but also restoring the Delta ecosystem and enhancing the Delta as a place.

The City acknowledges Reclamation's Notice of Intent and discussion regarding possible stakeholder participation in this EIS scoping/development effort. However, previous pledges of collaboration and transparency in the development of various environmental documents have fallen far short. Stockton, as an In-Delta Municipal water user, reemphasizes the need for sustained, serious and meaningful consultation to address stated concerns with

adequate plans for mitigation of potential harmful impacts caused by changes in any long-term operations.

By:_____
MEL LYTLE, PhD
DEPUTY CITY MANAGER

By:_____
JOHN M. LUEBBERKE
CITY ATTORNEY

JML/TMM/ML:eg
Attachments

A. August 30, 2016 Testimony of Robert Granberg, P.E.
B. June 9, 2017 Sur-Rebuttal Testimony of Robert Granberg, P.E.
C. November 30, 2017 Testimony of Robert Granberg, P.E.
D. Report on the Effects of the California WaterFix Project on the City of Stockton, Exponent, March 22, 2017.
E. Technical Response to Petitioners' Rebuttal Testimony in the WaterFix Proceedings, Exponent, June 9, 2017.

EXHIBIT A

CITY OF STOCKTON
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BEFORE THE
CALIFORNIA STATE WATER RESOURCES CONTROL BOARD

HEARING ON THE MATTER OF CALIFORNIA DEPARTMENT OF WATER RESOURCES AND UNITED STATES BUREAU OF RECLAMATION REQUEST FOR A CHANGE IN POINT OF DIVERSION FOR CALIFORNIA WATER FIX.	**TESTIMONY OF ROBERT GRANBERG**

This testimony is offered on behalf of the City of Stockton ("City" or "Stockton").

I. INTRODUCTION

I currently serve as the Assistant Director of Stockton's Department of Municipal Utilities (MUD) and have done so since 2013. In addition to assisting the Director of MUD in the organizational direction of the department, I provide overall leadership and management for the Engineering Services, Wastewater Treatment Plant Operations, and Maintenance Divisions. Prior to this position, I served as Deputy Director of Water

Resources Planning, in which capacity I managed all aspects of water supply planning, water treatment, and water distribution. I hold a Bachelor of Science degree in Civil Engineering and am a California registered Professional Civil Engineer. Exhibit STKN-011 is a true and correct copy of my resume, which accurately describes my education and work experience.

In my various roles with MUD, I have become familiar with the history of water issues in the Delta region as it relates to Stockton. Stockton derives its primary water supply from the Delta. As a result, there have been a variety of important water issues that I have handled on behalf of MUD. For example, from 2004 to 2012, I served as Project Manager delivering the City of Stockton Delta Water Supply Project, the largest capital improvement project in Stockton's history and the first drinking water intake in the Sacramento-San Joaquin Delta in decades.

The City supplies potable water and also owns, operates, and maintains wastewater collection and treatment facilities which serve the entire Stockton Metropolitan Area population under a National Pollutant Discharge Elimination System (NPDES) permit issued by the Central Valley Regional Water Quality Control Board. Wastewater treatment and discharge to the San Joaquin River and with the provision of water for municipal and industrial (M&I) purposes are, and will continue to be, essential services that the City provides to its residents.

In response to the submission of Petitioners' case in chief and in support of the City's Protest to the change petition submitted on January 5, 2016, the following testimony will describe the history and operation of the City's water use, the City's rights as a legal user of water within the Delta, and the effects and potential unknown injury or harm from the proposed action as it relates to the City's current and future water use, water supply, and water quality.

II. STOCKTON GENERAL DESCRIPTION

Founded in 1849 and incorporated in 1850, Stockton is one of the oldest incorporated cities in California. In 1922, Stockton city voters approved a City Charter

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(municipal constitution) with a City Council-Manager form of government. City services are provided by sixteen (16) departments including the City Manager, City Attorney, City Clerk, and City Auditor positions appointed by the City Council. Of the remaining twelve (12) departments that serve under the City Manager, MUD provides wastewater collection and treatment, water supply and distribution, and stormwater collection and disposal through eleven divisions totaling 218 employees.

III. CITY OF STOCKTON'S WATER SERVICES

MUD provides potable water treatment and distribution for M&I purposes to approximately 58 percent (58%) of the Stockton Metropolitan Area. The Stockton Water Service Area consists of more than 48,000 metered connections with a service population of 182,000. This accounts for approximately 55 percent (55%) of the M&I demand of the Stockton Metropolitan Area. The remaining portion of the Stockton Metropolitan Area is served by the California Water Service Company (CalWater), an investor-owned utility, and the County of San Joaquin (County) under various maintenance district agreements.

IV. CITY OF STOCKTON WATER SUPPLY

Current water supplies to the Stockton Metropolitan Area provided by the City include surface water diverted at the City's Delta Water Supply Project Water Treatment Plant (DWSPWTP) and surface water provided by contracts with the Stockton East Water District (Stockton East), a wholesaler of treated water, the Woodbridge Irrigation District (WID), and groundwater supplied by the City, CalWater and the County.

A. Water Supply Background

Prior to 1977, the sole drinking water source for the Stockton Metropolitan Area was groundwater. In average years, almost 870,000 acre-feet of groundwater is pumped per year from the Eastern San Joaquin Basin serving the Eastern San Joaquin County for agricultural and M&I beneficial uses. In Bulletin 118-80, the State Department of Water Resources designated the Eastern San Joaquin Basin as "critically overdrafted."

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In the late-1970's, Stockton East constructed a surface water treatment plant to treat raw water supply from the New Hogan Reservoir under a wholesale water supply contract with the City, CalWater, and two County maintenance districts. In 1983, Stockton East attempted to supplement that supply by entering into a Central Valley Project (CVP) contract with the Bureau of Reclamation for raw water supply from the New Melones Reservoir. The CVP contract did not materialize due to the implementation of the Central Valley Project Improvement Act. In order to mitigate for the lack of New Melones supply through Stockton East's CVP contract, the City, CalWater, and County entered into a ten (10) year water transfer agreement with the Oakdale Irrigation and South San Joaquin Irrigation Districts in 1999. That contract for 30,000 acre-feet, coupled with the New Hogan supply, enabled Stockton East to deliver nearly two-thirds of the entire Stockton Metropolitan Area M&I demand from 1999 to 2010.

Groundwater gradients in the vicinity of Stockton are about 0.15 percent (0.15%) eastward towards the central cone of depression. Degradation of water quality due to saline migration threatens the long-term sustainability of the underlying basin. Salt laden groundwater is unusable for either urban drinking water needs or for irrigating crops. The saline migration problem is not well understood. Studies and monitoring, such as those documented in the 2014 Eastern San Joaquin Integrated Regional Water Management Plan, have produced hypotheses as to the sources and extent of the saline front. Groundwater modeling, performed prior to significant pumping reductions enabled by Stockton's use of the Delta Water Supply Project, estimates that inflow from the west is estimated at 42,000 acre-feet per year (AFY) and is considered an undesirable source of lateral inflow due to elevated chloride levels.

Recognizing the need to solve its long-term water supply problem, the City applied to the State Water Resources Control Board (State Water Board) for a surface water right. Application 30531, filed on April 18, 1996, requested 125,900 AFY of supply from the San Joaquin River under Water Code sections 1210, 7075, 1215 et seq.,

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11460 et seq., 1485, and 7075. That application, for M&I supply, identified a diversion on the San Joaquin River and a Place of Use coincident with the Stockton Metropolitan Area. Exhibit STKN-012 is a true and correct copy of the City's Application No. 30531. The State Water Board subsequently bifurcated Application 30531, resulting in Application 30531A and 30531B (both with a priority date of April 18, 1996). Exhibit STKN-013 is a true and correct copy of the State Water Board's June 29, 2005 letter bifurcating Application 30531. On March 8, 2006, the State Water Board issued Permit 21176 on Application 30531A. Exhibit STKN-014 is a true and correct copy of Permit 21176. Application 30531B, for the balance of 92,300 AFY applied for under Application 30531, remains pending and the City pays an annual fee to maintain this application.

B. Surface Water Supplies

1. The City DWSPWTP

One of the sources of water for treatment and delivery to City customers is the City's DWSPWTP. The DWSPWTP is located in North Stockton and was completed in May 2012. The $223 million project to construct Phase 1 of the DWSPWTP consists of an intake on the San Joaquin River at the southwest tip of Empire Tract, eighteen (18) miles of raw water pipeline, a 30 million gallons per day (mgd) water treatment plant, and six (6) miles of treated water pipeline. Exhibit STKN-001 is a map that accurately shows the location of the DWSPWTP.

The water treatment plant consists of pre-ozonation, flocculation/sedimentation, microfiltration membrane filtration, chlorine disinfection, treated water storage, and chloramine residual disinfection for distribution. Solids handling is achieved by the use of three large basins to consolidate solids for mechanical removal and disposal as landfill cover.

The City diverts water to the DWSPWTP consistent with Permit 21176. Permit 21176 provides for the diversion of up to 33,600 AFY at a rate of up to 317 cubic feet per second (cfs) for M&I purposes. Permit 21176 also contains Condition 15,

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relating to compliance with Water Code section 1485, which specifically limits the amount of water that Stockton may divert under the Permit 21176 to the amount of wastewater discharged from the City's Regional Wastewater Control Facility (RWCF). Condition 15 specifies, "The 15-day running average of diversions from the Delta under this permit shall be less than or equal to the 15-day running average of discharges of properly treated effluent discharged from the [RWCF] into the San Joaquin River. The term 'properly treated effluent' means effluent that meets the requirements of the Central Valley Regional Water Quality Control Board (Regional Water Board)."

The City also has other current and future interests in the right of use of water, including uses under Application 30531B, for up to 92,300 AFY year with the point of diversion at the DWSPWTP. Application 30531B is based in part on Water Code sections 1215-1222 and 11460-11465, which require protection of water availability and use for areas or watersheds of origin and areas immediately adjacent thereto.

The City has been the subject of considerable scrutiny in its water rights pursuits and NPDES permitting, both of which required extensive and significant investments in water quality modeling and mitigation, the cost of which is borne entirely by the businesses and residents of the City. In addition to the conditions contained in Permit 21176, Stockton's ability to divert from the San Joaquin River at the DWSPWTP is subject to the following permits and biological opinions:

- Exhibit STKN-015 is a true and correct copy of the National Marine Fisheries Service Biological Opinion for the DWSPWTP.
- Exhibit STKN-016 is a true and correct copy of the United States Fish and Wildlife Service Biological Opinion for the DWSPWTP.
- Exhibit STKN-017 is a true and correct copy of the U.S. Army Corps of Engineers 404 Permit for the DWSPWTP.
- Exhibit STKN-018 is a true and correct copy of the California Department of Fish and Game Incidental Take Permit for the DWSPWTP.

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Pursuant to the above permits and biological opinions, the City's ability to divert from the San Joaquin River is restricted in the months of February to June in order to protect Delta smelt and Longfin smelt, because these fish species, in the larval stage, are not able to be screened with the latest fish screen technology. Diversion restrictions contained in the City's permits limit the time and amount the City is able to divert from the river. Condition 6.2 of California Fish and Game Incidental Take Permit No. 2081-2009-005-03 is the most restrictive condition regarding intake operations for the protection of Delta and Longfin smelt larvae. From February 15th to March 15th and May 21st to June 15th, the City is limited to 50 percent (50%) of permitted diversion capacity, or 24 cfs. From March 15th to May 20th, the City must cease diversions entirely. To ensure water treatment plant operations for the entire year, as discussed below, the City entered into a 40-year agreement to purchase surface water from WID.

Water has been diverted and beneficially used under Permit 21176 in each month allowed since May 2012. To date, the maximum monthly diversion has been approximately 1,684 AF, and the highest diversion in a calendar year has been approximately 9,268 AF. The City's Delta water diversions are documented and submitted to the State Water Board annually through the progress reports. Since the initial startup of the DWSPWTP, four (4) years of progress reports (2012-2015) have been submitted. Exhibit STKN-019 is true and correct copy of each of the City's progress reports from 2012-2015.

2. Contract Supplies

In addition to diversion at the DWSPWTP under Permit 21176, the City derives a very important portion of its supply through a treated water purchase contract with Stockton East. In 2015, the City produced or purchased through Stockton East approximately 8.5 billion gallons of potable water. Recent surface water curtailments through Stockton East have placed additional reliance on the DWSPWTP to meet urban demand and further protection of groundwater resources. To ensure water treatment plant operations for the entire year, the City entered into a 40-year agreement to

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purchase surface water from WID. The City's contract with WID is for diversion of up to 6,500 AFY. WID diverts from the Mokelumne River under pre-1914 water rights (Statement SO15557). WID water is then conveyed to the head of the DWSPWTP for treatment and delivery.

3. City's Combined Surface Water Use

The total amounts of surface water treated by month at the DWSPWTP based on diversion under Permit 21176 and the WID contract, and amounts diverted under Permit 21176, are accurately shown on Exhibit STKN-014.

C. Groundwater Supplies

Groundwater has and will continue to be an important water supply resource for the Stockton Metropolitan Area. The City's approach to groundwater use is to reduce reliance on groundwater to meet water demand by implementing a conjunctive use program to identify and develop in-lieu surface water sources. Since the late-1970's, Stockton has spent hundreds of millions of dollars developing new sources of supply that have resulted in an overall improvement in groundwater levels beneath the Stockton Metropolitan Area footprint. In 2008, the Stockton City Council, as part of the 2035 General Plan Update, adopted a groundwater maximum withdrawal target of 0.6 AFY, which is approximately two-thirds (2/3) of the sustainable groundwater withdrawal rate. As demonstrated in the San Joaquin County Groundwater Basin Authority Integrated Regional Water Management Plan, there has been significant groundwater level recovery in the central and western areas of the basin as a result of the City's development of surface water supply sources. Crucial to the continued groundwater management approach is the security of the developed surface water supplies that have allowed the continuing groundwater recovery program. Any loss of surface water supplies brought about by the potential negative impacts of the WaterFix Project is of great concern to the health and viability of the groundwater basin.

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V. STOCKTON REGIONAL WASTEWATER CONTROL FACILITY

The City's RWCF, located in southwest Stockton, is a wastewater treatment plant providing primary, secondary, and tertiary levels of treatment and consists of headworks, primary sedimentation, trickling filters (biotowers), secondary clarifiers, facultative ponds, treatment wetlands, nitrifying biotowers, dissolved air flotation, filtration, chlorine disinfection, and dechlorination prior to discharge to the San Joaquin River. The location of the RWCF is shown on Exhibit STKN-001. Solids handling consists of anaerobic digestion producing methane gas for cogeneration, solids dewatering, and disposal as soil amendment for non-food producing agricultural uses. Permitted discharge is 55 million gallons per day (MGD). Average dry weather discharge for July through September 2015 was 20.6 MGD.

The RWCF operates under a Central Valley Regional Water Board NPDES Permit (No. CA0079138) and consequently is subject to the strict water quality standards that are expected to be maintained in the Delta. Exhibit STKN-020 is a true and correct copy of NPDES No. CA0079138, exclusive of its attachments. The City has made considerable investments in its wastewater treatment processes to achieve the water quality standards set forth in its NPDES permits. In 2008, the City invested tens of millions of dollars in ammonia treatment and, with the 2014 NPDES permit renewal, is facing another major requirement to reduce total nitrogen in its discharge to the San Joaquin River.

VI. INJURY TO CITY AS A LEGAL USER OF WATER

The potential effects of the proposed action on surface water in the Delta is of great significance to the City as a municipal water supplier because alterations to the flows of the Sacramento and San Joaquin Rivers may negatively impact the quality of water the City diverts from the San Joaquin River. As communicated repeatedly to Petitioners, the City is concerned with decreased water quality at its drinking water intake that would impair that surface water source, and any degradation in San Joaquin River water quality at its point of treated wastewater discharge that would further burden

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the City through more rigorous wastewater treatment standards applied through the NPDES permit process.

Since 2008, the City has consistently made its concerns about the impact of the Bay Delta Conservation Plan (BDCP)/WaterFix Project known to Petitioners. The City submitted comments identifying its concerns about water quality at its drinking water intake, none of which I find to have been addressed or answered in Petitioners' case in chief or elsewhere. Exhibit STKN-002 is a true and correct copy of the City's May 30, 2008 Comments on the Notice of Preparation of an EIR/S for the BDCP; Exhibit STKN-003 is a true and correct copy of the City's July 29, 2014 comments on the BDCP DEIR/DEIS; Exhibit STKN-004 is a true and correct copy of the City's October 29, 2015 comments on the BDCP/California WaterFix RDEIR/SDEIS.

Of great concern is that the proposed change would, or threatens to, degrade water quality by various means. Water quality at the DWSPWTP intake will be affected by changes in San Joaquin River flows and Sacramento River flows resulting from the added points of diversion, associated operational changes, or both, and the adverse changes in water quality could result in substantial injury to the City as a lawful user of water. Any increase in contaminants is of concern to the City's water supply and can lead to, at a minimum, drinking water quality permit violations, increased operational costs, threats to public health, and other adverse effects on end users.

Specific water quality constituents (described in the City's comments on the BDCP/WaterFix environmental documents) with the potential to result in injury to the City's water supply include the following:

- Electrical Conductivity
- Cyanobacteria (e.g., Microcystis)
- Bromide
- Chloride
- Organic Carbon
- Nitrate/ Nitrite

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- Pesticides
- Other toxins
- Water Temperature

Notable among the constituents that threaten M&I water supply is bromide. Bromide, when in contact with ozone, forms bromate which is a disinfection byproduct regulated by the federal Environmental Protection Agency. The limit for bromate is 10 parts per billion as an annual average.

Chloride is also a constituent that is regulated as a secondary contaminant by State and Federal drinking water regulations. Title 22 of the California Code of Regulations, section 64449, Secondary Maximum Contaminant Levels and Compliance Table B ("Consumer Acceptance Contaminant Level Ranges"), considers three level ranges for chloride, in milligrams per liter (mg/l), at a maximum recommended level of 250 mg/l, an upper level at 500 mg/l, and a short term level of 600 mg/l.

Petitioners have also identified that the proposed action will result in increased residence time for water in the Delta. Based on my knowledge and experience, any increase in residence time will likely increase the undesirable production of cyanotoxins (e.g., Microcystis), which has a direct adverse effect on municipal water treatment and supply.

Based on my knowledge of drinking water treatment plant and wastewater treatment plant operations, it is my opinion that even seemingly small increases (e.g., less than 5 percent (5%)) in the mass or concentration of various undesirable water quality constituents, such as bromide, chloride, electrical conductivity, or Microcystis, can have adverse impacts on facility operations that could result in a reduction in the amount or quality of water capable of being delivered to customers or otherwise injure the City as a user of water by forcing additional treatment. Drinking water and wastewater treatment plant operators must respond promptly to changing conditions, and substantial changes from day to day in the quality of diverted water or influent can have adverse consequences on the use and discharge of this water.

Alteration of Delta flow that results in water quality degradation at the City's drinking water intake or point of treated wastewater discharge thus has the unfortunate potential to negatively impact the City's drinking water system and supply, and also the City's ability to comply with its NPDES permit.

For constituents such as bromide and cyanotoxins such as Microcystis, a 5 percent (5%) increase in raw water bromide, or increase in algal blooms driving an increase in Microcystis production will negatively impact water treatment operations and thus affect the reliability of the City's drinking water supply. Increases in these constituents would require more chemical treatment, more frequent cleaning of filter membranes resulting in decreased membrane life, higher electrical demand and reduced treated water production. To the extent diversions from the North Delta reduce cold water flow into the Delta, and increase river temperatures, the Project also could increase algal production. Algal production cycles will affect river pH and Total Organic Carbon (TOC) levels, which translate to continual changes in water treatment processes (with accompanying additional costs) to control disinfection by-product production.

Saltwater intrusion into the interior Delta as a result of north Delta water diversions authorized by the proposed action could increase levels of chloride and EC at the City's drinking water intake. Beginning in 2012, when Stockton began diverting Sacramento-San Joaquin River flows under its permitted water right, chloride levels have ranged from 0.8 mg/l to 110 mg/l and EC ranged from 57 to 702 micromhos per centimeter (µmhos/cm). Any increase in chloride levels or EC at the City's drinking water intake would adversely affect the quality of the City's drinking water supply. Increased chloride levels in drinking water at or near regulatory limits also has the potential to render that source unusable and only mitigatable through a replacement source, or a higher level of treatment such as reverse osmosis.

Increased salinity in Stockton's drinking water system has a direct correlation to salinity in Stockton's wastewater discharge. The City's NPDES permit limits treated wastewater discharge EC calendar year average to 1,300 µmhos/cm. As reported in the

in San Joaquin River EC at the City's drinking water intake and treated wastewater discharge EC. Exhibit STKN-021 is a true and correct copy of the City's most recent progress report on the annual salinity pollution prevention plan. Any increase in EC at the City's drinking water intake due to the Project will have a detrimental effect on the City's ability to comply with its NPDES permit, which in turn could limit Stockton's ability to divert under its water right Permit 21176, results in a change in drinking water sources or in the additional costly treatment measures, and also contribute to the economic impacts of turning away industrial development that may need capacity for discharge to the City's sewer system.

Any reduction in water quality at the DWSPWTP also implicates groundwater and groundwater management. Groundwater remains a crucial part of the City's overall water portfolio. However, a major purpose of the DWSPWTP was to protect regional groundwater from increasing overdraft. Groundwater is also high in total dissolved solids (TDS). Groundwater levels improved over the past few decades in the Stockton vicinity, but if groundwater must be relied upon more extensively as a result of the proposed change petition, groundwater levels will be expected to decline and TDS levels in potable supplies and wastewater discharges will increase. Any degradation of the quality of the City's water supply, including, but not limited to, increases in EC, bromide, TDS, or chloride from increased mass or concentration in the City's San Joaquin River supply, or groundwater, will injure the City in its use of water if it leads to the need for additional treatment, including prohibitively expensive upgrades to the City's wastewater treatment system such as reverse osmosis treatment.

Water supplies through the City's contract with Stockton East have been highly variable since the late-1970's, primarily due to the Bureau of Reclamation's inability to allocate CVP contract supply to Stockton East from the New Melones Reservoir. In the past two years, Stockton East received zero (0) allocation from that contract. Even in years that are not declared to be a drought year, the current conditions in the Delta still result in water shortages. Because the City has its permitted Delta water supply and

groundwater, it has been able to reduce its reliance on Stockton East supply. However, continued CVP supply restrictions to the Stockton East imparts an even greater reliance and pressure on the City's Delta water and groundwater supplies. This will likely continue to be the case even in wet years.

Any adverse impacts to Delta water quality caused by the proposed action that results in reduced Delta water supply would certainly need to be made up by groundwater supplies, which have restrictions on overuse and could not be relied upon for long periods of time. Moreover, any change in the quality of the City's surface water supply that requires increased pumping of groundwater and forces a return to reliance on an overdrafted groundwater basin would represent an unacceptable step backwards in the region's efforts to reduce reliance on groundwater and restore groundwater supplies, and would be inconsistent with the groundwater sustainability principles in the Sustainable Groundwater Management Act.

Adverse changes to San Joaquin River flows or quality due to the proposed action thus would cause a significant impact on the City's ability to meet its urban water demand.

VII. CONCLUSION

The City does not wish to delay the administrative hearing regarding the proposed action. However, the availability of good drinking water supply in the Delta is imperative to a municipal water supplier. It is the City's position that these major concerns of the City and the region as a whole, must be addressed before the change petition can be considered. The City requests that the Petitioners' requested change be denied until more information relevant to the City's concerns is provided for review and the appropriate assurances are provided (in the form of permit terms and conditions) that would avoid any harm to the quality or availability of the City's water supply. However, should the State Water Board approve the change petition, I recommend that the following considerations relative to the City be included:

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- Require Petitioners to communicate with the City and address the City's concerns as a protestant. For example, would the Petitioners be willing to curtail North Delta diversions for the WaterFix project or provide compensation if relevant drinking water quality constituents in the City's source water exceed current or specified conditions, such as Petitioners have done in the past for other Delta diverters like the City of Antioch, or recently, for the Contra Costa Water District?
- Ensure that the environmental analysis satisfies the protestants and ensure measures are included to protect human uses of water and the environment, such as limiting diversion during certain periods of the year.
- Ensure that the City is aware of the time and details of construction of the WaterFix project and is provided with relevant progress reports as construction on the project progresses.
- Ensure the quality of the City's water source is and will continue to be of sufficient quality and quantity to satisfy our rights as a legal user of water.

Finally, any and all considerations or accommodations offered to the City should be incorporated into the Petitioners' permit as a permit term or condition.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed on this 30th day of August 2016 in Stockton, California.

Robert Granberg

EXHIBIT B

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BEFORE THE

CALIFORNIA STATE WATER RESOURCES CONTROL BOARD

HEARING ON THE MATTER OF CALIFORNIA DEPARTMENT OF WATER RESOURCES AND UNITED STATES BUREAU OF RECLAMATION REQUEST FOR A CHANGE IN POINT OF DIVERSION FOR CALIFORNIA WATER FIX.	**SUR-REBUTTAL TESTIMONY OF ROBERT GRANBERG**

This testimony is offered on behalf of the City of Stockton ("City" or "Stockton").

I. INTRODUCTION

My testimony will rebut the testimony and report of Dr. Michael Bryan (DWR-81 and DWR-652) and show that Department of Water Resources (DWR) and U.S. Bureau

of Reclamation (collectively referred to as "Petitioners") have not proven that the California WaterFix Project ("WaterFix" or "Project") will not injure Stockton as a legal user of water. Dr. Bryan's testimony and report fail to address water quality changes that affect the City's ability to divert water under its Water Right Permit No. 21176, and the City's ability to treat the water to meet all applicable regulatory standards with current technology, as is the current practice and has been since 2012. Thus, the Project will at times render the water unusable for its purpose of use as municipal and industrial supply. Specifically, Dr. Bryan's testimony and report fail to address Project-related changes in water quality on the time scale relevant to the City's use of water; his presentation of data in the form of long-term monthly averages masks substantial increases in various constituents that will render the City's water right unusable in light of the City's unique circumstances, which include its drinking water treatment facility, distribution system, wastewater discharge constraints, and customer base.

The City's Delta Water Supply Project Water Treatment Plant (DWSPWTP) was designed and constructed based on historical and predicted flows and water quality of the Delta, and the fact that the drinking water intake is highly influenced by water originating in the Sacramento River system. Dr. Bryan acknowledges in his report that under the Project, the source water at the City's intake will be altered from that which existed at the time the City acquired its surface water right, with the result that the City's intake will experience a higher proportion of San Joaquin River water quality that is known to be of a lower quality than the Sacramento River. (DWR-652, p. 38)

The City planned, designed, and implemented the DWSPWTP and its San Joaquin River intake as a conjunctive use facility with three (3) main objectives; namely, to 1) promote regional self-sufficiency by replacing declining surface water supplies, 2) protect groundwater resources in a critically overdrafted groundwater basin, and 3) supply future planned growth in the Stockton Metropolitan Area. The DWSPWTP water right (Water Right Permit No. 21176, STKN-014) is based on the City's treated wastewater discharge into the San Joaquin River under a National Pollution Discharge

Elimination System (NPDES) permit issued by the Central Valley Regional Water Quality Control Board. The permit specifies that the City may re-divert the volume of wastewater discharged by Stockton for indirect potable reuse. However, the City cannot take advantage of indirect potable reuse if it cannot use its water right to divert from the Delta.

Stockton's DWSPWTP water right is a critical water source that solves many of the City's issues with previous supply sources. Continued protection of Delta water quality is of utmost importance to the City for its ability to divert, treat and deliver drinking water that meets all regulatory requirements and is of high aesthetic quality for its customers. Reliance on high quality Delta water is no less important to the City than it is to the municipal and industrial users of water exported from the Delta. The Project jeopardizes this critical surface water supply and erodes the City's ability to adequately meet current water supply demand, to meet current and future water quality regulations, and to provide its customers a potable water supply that drives a solid economic base for the region and the State of California. Dr. Bryan's testimony and report inaccurately describes the impacts on water quality to Stockton.

II. INJURY TO STOCKTON DUE TO THE WATERFIX

a. Chloride and Specific Conductance

Chloride and specific conductance (SC),[1] measures of salinity in the Delta, are of concern for the City's drinking water intake and wastewater discharge as it relates to levels and trends under Project operations. In offering his opinion that Project-related changes in chloride and specific conductance at the City's intake will not result in adverse impacts to the municipal beneficial use (MUN), Dr. Bryan relies on a 250 mg/L chloride threshold, which is a secondary drinking water standard level deemed acceptable to consumers. (DWR-652, p. 21.) However, when the chloride concentration rises past 110 mg/L Stockton will incur significant injury in two (2) ways.

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[1] SC and electrical conductivity (EC) are used interchangeably throughout the testimony.

First, the City will be prevented from diverting under its DWSPWTP water right because of the increasing EC levels in Delta water diverted for drinking water treatment as that water ultimately is discharged through the sanitary collection system for treatment at the City's wastewater treatment plant, which has a discharge limit on EC. The City's wastewater NPDES permit limits salinity in the City's treated wastewater discharge to the San Joaquin River and requires the City to prepare and annually update a Pollution Prevention Plan (PPP) for Salinity in order to meet the requirements of Water Code section 13263.3(d)(3). (California Regional Water Quality Control Board, Central Valley Region, Order R5-2014-0070-02, Attachment E, section IX.D.1, p. E-22; Exhibit STKN-050 is a true and correct copy of California Regional Water Quality Control Board, Central Valley Region, Order R5-2014-0070-02, Attachment E.) The provisions of Water Code section 13263.3 (Section 13263.3) specify that the PPP estimate all sources of salinity in the Publicly Owned Treatment Works (POTW) influent, analyze the methods that could be used to prevent the discharge of salinity to the POTW and the associated costs, and impacts to implement a PPP. One source of salinity in the City's wastewater discharge is the salinity in the City's source water supply. (STKN-021, p. 2.) Whenever the salinity concentration of water at the intake increases above 110 mg/L, the City is faced with the decision to forego diversions under its Delta water right for drinking water purposes in favor of purchased water or groundwater, or be forced to implement additional treatment such as reverse osmosis.

Increased salinity in the City's source water has a direct effect on Stockton's ability to comply with its NPDES permit, which establishes limits on the salinity in the City's wastewater discharges for salinity. (STKN-021.) This information was presented in the City's March 17, 2017 comments to the State Board's 2016 Phase 1 Bay-Delta Plan amendment and Substitute Environmental Document. As part of the City's effort to control source water salinity, the City procured and incorporated the DWSPWTP water right into its supply and obtained a corresponding reduction in effluent salinity. (City of Stockton's Comments on 2016 Phase 1 Bay-Delta Plan Amendment and Substitute

Environmental Document, March 17, 2017, pp. 7-9; Exhibit STKN-040 is a true and correct copy of the City of Stockton's Comments on 2016 Phase 1 Bay-Delta Plan Amendment and Substitute Environmental Document.) Increasing salinity in Delta source water for municipal and industrial use due to the Project would threaten to cause NPDES violations.

Second, qualitatively, Stockton's water customers are accustomed to and expect a water supply with the salinity levels delivered by the City. Drinking water regulations that limit salinity that are known as "Consumer Acceptance Contaminant Levels" for the salinity-related constituents which include chlorides, Total Dissolved Solids (TDS), and SC. Increased surface water salinity due to the Project would erode customer confidence and cause economic impacts if current industrial water users were forced to invest in on-site treatment or choose to leave the City for other water service providers that offer better water quality. If the City were required to fund additional treatment technology to reduce Delta water salinity, that would necessarily increase treatment process and service costs and directly impact the City's ability to serve its customer base, which includes a substantial number of economically disadvantaged persons. As a point of comparison, Dr. Bryan's use of the 250 mg/L threshold is substantially higher than the 30 mg/L chloride level that Petitioners agreed to meet in the delivered water they have promised to Contra Costa Water District (CCWD) in their settlement resolving CCWD's protest to the Project's water rights change petition. (Agreement for Mitigation of Impacts to Contra Costa Water District from Construction and Operation of Bay Delta Conservation Plan/California WaterFix, March 24, 2016, pp. 18-19.)

Similar to chloride, SC is a secondary contaminant under Title 22 that affects customer acceptance and satisfaction. (Cal. Code Regs., tit. 22, § 64449.) Dr. Bryan's report states that increases in SC "would not be of a magnitude that would cause an exceedance of the applicable drinking water MCLs on a mean monthly basis." (DWR-652, p. 31.) The recommended level for SC for drinking water is 900 micro-Siemens/cm. (*Id.*) In 2015, Stockton's treated drinking water ranged from 71 to

614 micro-Siemens/cm. So, while Stockton's treated drinking water remains below the applicable maximum contaminant levels (MCLs), it is impossible to know whether the Project will result in SC that exceeds the 1,600 micro-Siemens/cm maximum because Dr. Bryan's testimony presents information only in terms of long-term monthly averages. The only treatment for SC is reverse osmosis. Since SC is a secondary contaminant, Stockton would be required to incur significant expense by either upgrading the water treatment facility to include reverse osmosis, or finding alternative sources to satisfy the City's demand.

Dr. Bryan's testimony and report relies on long-term monthly averages and ignores the potential for real time impacts to the City's water treatment facility and the City's customer base that will occur from substantial short-term increases in a variety of constituents. By using only long-term monthly averages, Dr. Bryan's testimony and report cannot be used to determine that the operations of the Project will not impact the City's ability to deliver a safe and reliable water supply under the Project's proposed alternatives. Stockton's water treatment and wastewater treatment facilities were designed and operate based on the salinity levels that have been typical at Stockton's drinking water intake. The substantial short-term increases in constituent levels caused by the Project that are identified in Dr. Paulsen's expert reports would at times prevent the City from diverting and using water under its water right permit without further significant investments in water treatment equipment and processes such as reverse osmosis.

b. Disinfection By-Products: Bromide, Bromate and Trihalomethane

Dr. Bryan correctly states there are no adopted state or federal surface water quality criteria or objectives for bromide that are applicable to the Delta. (DWR-652, p. 7.) However, Stockton's intake will receive a significantly higher proportion of water originating from the San Joaquin River water under the Project. The mean dissolved bromide levels in San Joaquin River are on the order of 251 µg/L, which is nearly 17 times that of the Sacramento River. (DWR-652, p. 7, Table 1.) Furthermore, the mean

concentrations of East Side tributaries and Delta Ag return flows are on the order of 16 µg/L and 456 µg/L, respectively. (*Id.*) The City already experiences a significant impact to its drinking water treatment process when bromide is in the range of 200 µg/L. This is due to the fact the City uses ozone for pretreatment disinfection and has a significantly large water distribution network that has the effect of increasing the levels of the disinfection byproduct trihalomethane (THM) in the drinking water. The most effective way to reduce the formation of brominated disinfection byproducts (DBP) is to treat waters that are lower in bromide concentrations.

The 1998 California Urban Water Agencies (CUWA) Draft Final Bay-Delta Water Quality Evaluation (1998 CUWA Water Quality Evaluation; Exhibit STKN-042 is a true and correct copy of the 1998 CUWA Water Quality Evaluation) referenced in Dr. Bryan's report concluded that <50 µg/L of bromide would be necessary to allow users the flexibility to incorporate either enhanced coagulation or ozone disinfection to meet the potential long-term regulatory scenario for the treatment of Delta source water. (*Id.* at p. 4-21.) Dr. Bryan states that the WaterFix EIR/EIS assessment for bromide used 50 µg/L and 100 µg/L as assessment thresholds; however, "[t]he 50 µg/L threshold proved to be of little utility for assessing bromide changes in the interior Delta locations and the San Joaquin River near the City of Stockton's WTP intake location because this threshold was shown from modeling to be exceeded 100% of the time for all scenarios modeled." (DWR-652, p. 8.)

Presently, the City can use water from the DWSPWTP with bromide concentrations between 100 µg/L and 150 µg/L. When bromide concentrations reach 200 µg/L the City must employ a pretreatment process using chloramines in conjunction with ozone. This pretreatment process consumes the ozone very quickly thereby requiring an increase in the ozone dose. Increasing the ozone dose causes an increase in operating costs as ozone is the most power consuming process at the water treatment plant. Dr. Bryan's report shows that average bromide concentrations will be substantially higher than the No Action Alternative in all scenarios and substantially increase the

frequency of concentrations above 200 mg/L. (DWR-652, p. 17, Figure 11.) This will cause the City significant injury by forcing it to employ pretreatment with chloramines and incurring the costs of increased ozone doses and associated electrical costs. Under alternative 4A, bromide levels in the City's source would increase by 50 µg/L, 50% of the time. Bromide in the source water will form bromate in the treatment process. Bromate is a DBP which is regulated to 10 µg/L. If concentrations of bromide in the City's source water exceed 200 µg/L, Stockton would not be able to use water under its existing ozonation pretreatment process to control taste and odor compounds (Methyl-Isoborneol (MIB) and geosmin). If the quality of the taste and odor of Stockton's water is degraded to the point that it is unusable in light of the City's existing facilities, the City will be injured because it will be forced to bear the cost of finding an alternative source of water or investment in additional treatment processes such as Granular Activated Carbon (GAC) adsorption. The City investigated GAC as an alternative to implementing chloramines as a residual disinfectant to control DBP formation in the City's large distribution network. In 2012, it was demonstrated that GAC contactors would cost the City an additional $5.4 million per year in capital and operation and maintenance cost, which would result in a 23% increase in customer water rates (Chloramine Conversion Treatment Cost Comparison and Other Concerns presentation to Stockton Council Water Committee, November 13, 2013; Exhibit STKN-043 is a true and correct copy of Chloramine Conversion Treatment Cost Comparison and Other Concerns presentation to Stockton Council Water Committee.)

Aside from having to compete for increasingly scarce water supplies, Stockton faces an array of challenges to maintain a safe and reliable source of water, including "new State and federal drinking water regulations [that require] greater levels of treatment." (The Significance of Bromide on the Drinking Water Quality of Sacramento-San Joaquin Delta Waters, D-044904, p. 1; Exhibit STKN-044 is a true and correct copy of The Significance of Bromide on the Drinking Water Quality of Sacramento-San Joaquin Delta Waters.) The cost of treating Delta waters to meet those new standards

will be "staggering to the drinking water industry." (*Id.*) In addition, to minimize THM formation, California water utilities must have best available treatment technologies available such as ozone and chloramines, but at an extensive investment cost. (Delta Water Quality: A Report to the Legislature on Trihalomethanes and the Quality of Drinking Water Available from the Sacramento – San Joaquin Delta, State Water Resources Control Board, Department of Public Health, and Department of Water Resources, 1991; Exhibit STKN-045 is a true and correct copy of Delta Water Quality: A Report to the Legislature on Trihalomethanes and the Quality of Drinking Water Available from the Sacramento – San Joaquin Delta.) The Project will cause higher bromide concentrations at the City's drinking water intake, which will cause the City to incur significant costs installing additional treatment processes or finding a substitute water source.

c. Total Organic Carbon

Similar to bromide, Table 13 in Dr. Bryan's report lists source water concentrations of organic carbon as a mean monthly basis. (See DWR-652, p. 42.) In this table, it is shown that San Joaquin River dissolved organic carbon (DOC) ranges from 3.4 to 4.8 mg/L. (*Id.*) In the recent drought, Stockton experienced DOC values in the 5.0 to 11.0 mg/L range. Even when total organic carbon (TOC) values are in the recommended range of 4.0 to 7.0 mg/L, controlling DBP's in a large distribution system like Stockton's has proven difficult. The 1998 CUWA Water Quality Evaluation referenced in Dr. Bryan's report concluded that <3 mg/L of TOC would be necessary to allow water users the flexibility to incorporate either enhanced coagulation or ozone disinfection to meet the potential long-term regulatory scenario for the treatment of Delta source water. (STKN-042, p. 4-21.) Similar to bromide, rising TOC concentrations would require the City to invest in additional treatment processes or alternative water supplies in order to control DBP's beyond what is currently contemplated based on existing Delta water quality. Current treatment with ozone is effective because it oxidizes taste and odor constituents, like MIB and geosmin, and provides a good

complement to existing treatment processes, but its use is limited by the formation of bromate at times when bromide and TOC are elevated in the source water. The City monitors TOC on a daily basis and when TOC rises above 4 mg/L the City implements pretreatment with chloramines in conjunction with ozone. Increased TOC due to the Project would result in a direct impact to current water treatment operations costs, or when limited by bromate formation, would force the City to invest in GAC treatment in order to continue to use diverted water under its water right. Dr. Bryan's approach to presenting model results in the form of long-term averages ignores the day-to-day operation and monitoring of a drinking water treatment plant, and Dr. Bryan's determination regarding Project effects on the City's use of water under its water right fails to account for the costs associated with complying with State and federal drinking water standards.

Drinking water regulations under the Disinfectants–Disinfection Byproducts Rule require that water treatment plants reduce or remove organic matter prior to adding disinfectant. Dr. Bryan's testimony and report fail to recognize the totality of Delta water constituents that affect the treatability of the water, such as bromide, TOC, pH, ammonia, alkalinity and temperature, along with requirements for treatment contact time. For instance, the City is required by the City's drinking water permit issued by the State Water Resources Control Board to achieve higher TOC removal rates under lower alkalinity values. Increased TOC in source water from the Project would require Stockton to have to change to water treatment processes, such as enhanced coagulation or GAC adsorption, or to find alternative sources of water. These issues have been presented previously in Stockton's testimony and in comments to the Bay Delta Conservation Plan and EIR/EIS.

d. Microcystis

Dr. Bryan's testimony and report claim the Project would not change Delta hydrodynamics and temperature, effects that will increase the likelihood of harmful algal blooms (HABs), and microcystis contamination in the City's drinking water. (DWR-652,

pp. 54-55.) However, the expert testimony of Dr. Paulsen (STKN-025, STKN-027, STKN-047, and STKN-048) shows that the Project will substantially increase residence times at the times when temperatures are highest, thus increasing the likelihood and frequency of HABs and microcystis formation. It is likely that even a slight increase in HABs and microcystis will have an impact on the City as a legal user of water, due to the effect on the City's ability to treat Delta water with current treatment technologies. Ozonation, which is used by the City, is recognized as an effective process for the destruction of both ultra- and extracellular microcystis, but at a relatively high dose dependent upon background DOC levels. However, ozone breaks apart the algae cells and releases toxins, which would create an unreasonable health risk to Stockton's drinking water customers unless additional treatment with GAC is employed. Prior to cell removal, the total and dissolved organic carbon load of water with cyanobacterial blooms will vary by orders of magnitude, and consumption of the oxidant (ozone) will therefore also vary widely. Continuous control of the oxidizing step and very high doses may be necessary to ensure complete oxidation of cyanotoxins in one pretreatment step. This is likely to be difficult in practice, and is associated with a risk of toxin liberation. (Chorus and Bartram, Toxic Cyanobacteria in Water: A Guide to Their Public Health Consequences, Monitoring and Management, 1999; Exhibit STKN-046 is a true and correct copy of Toxic Cyanobacteria in Water: A Guide to Their Public Health Consequences, Monitoring and Management.) Therefore, even a slight increase in HABs or microcystis will injure the City as a legal user of water by increasing the cost and complexity of its water treatment process and potentially rendering the source water unusable at times to avoid a risk to public health.

III. CONCLUSION

Petitioners have not presented evidence that shows no injury to Stockton. Stockton's DWSPWTP and the accompanying water right were designed and constructed based on historical and predicted flows and water quality in the Delta. The CWF would alter those flows and cause water quality changes that would prevent

Stockton from using its DWSPWTP water right, forcing the City to find other unknown sources of supply, or investing in additional, expensive treatment processes. Dr. Bryan's report masks substantial increases in various constituents by using long-term monthly averages and thus fails to address water quality changes that affect the City's ability to treat Delta water so that it remains usable by the City's customers.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed on this 9th day of June 2017 in Stockton, California.

Robert Granberg

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EXHIBIT C

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HEARING ON THE MATTER OF CALIFORNIA DEPARTMENT OF WATER RESOURCES AND UNITED STATES BUREAU OF RECLAMATION REQUEST FOR A CHANGE IN POINT OF DIVERSION FOR CALIFORNIA WATER FIX.	**PART TWO TESTIMONY OF ROBERT GRANBERG, P.E.**

This testimony is offered on behalf of the City of Stockton ("City" or "Stockton").

I. INTRODUCTION

I currently serve as the Assistant Director of Stockton's Municipal Utilities Department (MUD) and have done so since 2013. A detailed description of my

background and qualifications are included in my testimony for Part One and my resume. (See Exhibits STKN-010, STKN-011.) My testimony for Part Two will summarize the impacts from the California WaterFix Project ("WaterFix" or "Project") to the City's Regional Wastewater Control Facility (RWCF), compliance with the National Pollution Discharge Elimination System (NPDES) permit for the RWCF, and the public interest. In summary, there is substantial evidence that the Project will cause adverse impacts to the water quality of the San Joaquin River, which will require Stockton to invest in additional wastewater treatment processes, increase the potential for NPDES permit violations and more stringent NPDES permit terms, degrade public trust resources, and increase health risks to Stockton's residents. The Department of Water Resources (DWR) and U.S. Bureau of Reclamation (collectively referred to as "Petitioners") have neither acknowledged these impacts, nor identified mitigation measures that would address them. By failing to address these impacts, the Petitioners have shifted the burden of mitigating the impacts of WaterFix on to Stockton.

II. STOCKTON'S REGIONAL WASTEWATER CONTROL FACILITY

The City owns, operates, and maintains wastewater collection and treatment facilities that serve the entire Stockton Metropolitan Area population under the waste discharge requirements / NPDES permit issued by the Central Valley Regional Water Quality Control Board (Central Valley Water Board).

The City's RWCF is a wastewater treatment plant located in southwest Stockton providing primary, secondary, and tertiary levels of treatment. The RWCF consists of headworks, primary sedimentation, trickling filters (biotowers), secondary clarifiers, facultative ponds, treatment wetlands, nitrifying biotowers, dissolved air flotation, filtration, chlorine disinfection, and dechlorination prior to discharge of tertiary treated effluent to the San Joaquin River just upstream of Rough and Ready Island. The location of the RWCF is shown on Exhibit STKN-001. Solids handling consists of anaerobic digestion producing methane gas for cogeneration, solids dewatering, and disposal as soil amendment for non-food producing agricultural uses. Permitted

discharge is 55 million gallons per day (MGD). Average dry weather discharge (July through September) in 2017 was 24.6 MGD. Wastewater treatment and discharge to the San Joaquin River is, and will continue to be, one of the essential services that the City provides to its residents.

The RWCF operates under a NPDES permit (No. CA0079138) and consequently is subject to regulation based on numerous applicable water quality standards. (Exhibit STKN-020; Exhibit STKN-055 is a true and correct copy of Attachment F of Central Valley Water Board Order R5-2014-0070-03, NPDES No. CA0079138.) The City has made considerable investments in its wastewater treatment processes to achieve the effluent and receiving water limitations and other requirements set forth in its NPDES permits. In 2008, the City invested tens of millions of dollars in ammonia removal treatment. As a result of the 2014 NPDES permit renewal, the City must implement another major requirement to reduce total nitrogen in its discharge to the San Joaquin River. The improvements currently being designed for nitrogen removal will cost the City $74.6 million. This is the cost today to comply with a nitrogen removal criteria based on current water quality conditions. If San Joaquin River or downstream Delta water quality conditions worsen due to the Project, as evidence submitted in Part 1 of these proceeding suggests, Stockton may be faced with even more stringent discharge limitations through the NPDES permitting process that translate into further treatment requirements, which are not known at this time and have not been evaluated and considered by Petitioners in their Project impact analysis, or in any evidence submitted to date in this proceeding, to the level that would adequately inform the State Water Resources Control Board (State Water Board), Stockton, and other potentially impacted parties.

Stockton is unique in that its surface water rights are directly tied to the discharge of its treated wastewater. The City diverts water to its Delta Water Supply Project Water Treatment Plant (DWSPWTP) under Permit 21176, which contains Condition 15 that limits the amount of water that Stockton may divert to the amount of wastewater

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discharged from the City's RWCF. Condition 15 specifies:

> The 15-day running average of diversions from the Delta under this permit shall be less than or equal to the 15-day running average of discharges of properly treated effluent discharged from the [RWCF] into the San Joaquin River. The term 'properly treated effluent' means effluent that meets the requirements of the Central Valley Regional Water Quality Control Board (Regional Water Board).

Therefore, Stockton's ability to divert a sustainable quantity of potable water under its Delta surface water right is dependent on its ability to comply with its NPDES permit. Further erosion of water quality due to the operation of the Project could jeopardize Stockton's ability to meet its NPDES permit conditions with a direct impact to its ability to divert water for potable water treatment and distribution, the cost of which would be burdened on its ratepayers. Those impacts could range from operational changes in the current water or wastewater treatment processes that result in additional power demand, chemical use or labor, to further treatment requirements potentially costing millions of dollars in additional capital and operation expenditures, to further limits on development that discourage business investment and result in a negative economic impact to the City and the region.

III. Effects to Water Quality

The potential effects of the proposed action on surface water in the Delta are of great significance to the City because alterations to the flows of the Sacramento and San Joaquin Rivers may negatively impact the quality of water in the San Joaquin River. As communicated repeatedly to Petitioners, the City is concerned with any decreases in San Joaquin River water quality at or downstream of its point of treated wastewater discharge that would further burden the City through more rigorous wastewater treatment standards applied through the NPDES permit process.

Based on my knowledge of NPDES permitting and wastewater treatment plant operations, it is my opinion that even seemingly small increases in the mass or concentration of various water quality constituents may cause the City to be unable to comply with its NPDES permit or force the City to add additional treatment processes at

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a significant cost. The determination of the need for, and calculation of, effluent limitations, is a function of various factors, including receiving water quality. In general, the lesser the receiving water quality the more likely it is that there will be effluent limitations for a constituent and the more stringent any effluent limitations are likely to be. Also, wastewater treatment plant operators must respond promptly to changing conditions, and substantial changes from day-to-day in the quality of RWCF effluent can have adverse consequences on the City's ability to discharge treated wastewater.

a. Electrical Conductivity

Increased salinity, measured as electrical conductivity (EC), in Stockton's drinking water system has a direct correlation to salinity in Stockton's wastewater discharge. The City's NPDES permit limits treated wastewater discharge EC to a calendar year average of 1,300 micromhos per centimeter (µmhos/cm). (Exhibit STKN-056 is a true and correct copy of the City's most recent progress report on the annual salinity Pollution Prevention Plan (PPP).) Any long-term increase in EC at the City's drinking water intake due to the Project will have a detrimental effect on the City's ability to comply with its NPDES permit, which in turn could limit Stockton's ability to divert under its water right Permit 21176, result in a change in drinking water sources or in the addition of costly treatment measures (such as reverse osmosis), and also contribute to the economic impacts of turning away industrial development that may need capacity for discharge to the City's sewer system.

As noted above, the City's wastewater NPDES permit limits salinity in the City's treated wastewater discharge to the San Joaquin River and requires the City to prepare and annually update a PPP for salinity in order to meet the requirements of Water Code section 13263.3(d)(3). (Exhibit STKN-050.) The provisions of Water Code section 13263.3 (Section 13263.3) specify that the PPP estimate all sources of salinity in the publicly owned treatment works (POTW) influent, analyze the methods that could be used to prevent the discharge of salinity to the POTW and the associated costs, and impacts to implement a PPP. One source of salinity in the City's wastewater discharge

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is the salinity in the City's source water supply. (Exhibit STKN-021.) Whenever the salinity concentration of water at the intake increases above 110 milligrams per liter (mg/L), in order to meet demand for drinking water, the City is faced with the decision to forego diversions under its Delta water right, and either purchase water or pump groundwater, which is higher in salinity measured as Total Dissolved Solids (TDS). More frequent or larger increases in the salinity of the City's potable supply, as may be caused by the WaterFix project, could force the City to implement expensive additional drinking water treatment, such as reverse osmosis.

Increased salinity in the City's source water has a direct effect on Stockton's ability to comply with its NPDES permit, which establishes limits on the salinity in the City's wastewater discharge. (Exhibit STKN-021.) This information was presented in the City's March 17, 2017 comments to the State Water Board's 2016 Phase 1 Bay-Delta Plan amendment and Substitute Environmental Document. As part of the City's effort to control source water salinity, the City procured and incorporated the DWSPWTP water right into its supply and obtained a corresponding reduction in effluent salinity. (Exhibit STKN-040, pp. 7-9.) Increasing salinity in Delta source water for municipal and industrial use due to the Project has the potential to cause NPDES violations. If the City were required to fund additional treatment technology to reduce salinity in the water diverted from the Delta, that would necessarily increase treatment process and service costs and directly impact the City's ability to serve its customer base, which includes a substantial number of economically disadvantaged persons.

b. Nitrate plus Nitrite

The City's 2014 NPDES permit included a final effluent limitation for nitrate plus nitrite of 10 mg/L and a compliance date of June 1, 2024, based upon the Central Valley Water Board's decision to protect the State Water Project from potential taste and odor impacts associated with algal blooms. The City's Part 1 evidence demonstrated that the Project will result in a substantially higher proportion of San Joaquin River flow (poorer water quality) at the City's RWCF discharge location. This change due to the Project's

operations is likely to result in corresponding higher nitrate concentrations, which could further burden the City by requiring further reductions in nitrate plus nitrite through future NPDES permit limits. The City would have to construct additional facilities or treatment processes to lower nitrate plus nitrite even further. This impact would further burden the City's ratepayers as the Petitioners have failed to address this issue through the Project's environmental analysis, leaving the City and its ratepayers to speculate on the future of the City's ability to adequately treat wastewater in a cost-effective and environmentally responsible manner.

c. Dissolved Oxygen

The City's NPDES permit limits Dissolved Oxygen (DO) to 6 mg/L from September 1 through November 30 and 5 mg/L throughout the remainder of the year. (Exhibit STKN-020.) The Project's final environmental impact report/environmental impact statement (EIR/EIS) discusses the occurrence of low DO concentrations coinciding with periods of low flow conditions, indicating that flow, channel morphology and nutrient loading in the San Joaquin River are important factors influencing DO conditions in the Stockton Deep Water Ship Channel downstream of the City's discharge location. (Exhibit SWRCB-102, Final EIR-EIS Chapter 8 – Water Quality, pp. 8-51 to 8-52.) Future San Joaquin River conditions that result in lower river flow, or higher nutrient loading in the Stockton Deep Water Ship Channel caused by Project operations, could place a greater burden on the City through lower limits on ammonia nitrogen or other oxygen demand through the NPDES permit process. The resulting need for additional investment in treatment technology would unfairly burden City ratepayers by forcing them to mitigate Project impacts. The Project EIR/EIS failed to analyze this potential impact to Stockton and therefore is inadequate to inform the State Water Board's decision regarding the requested water rights change petition, including whether the requested change will adversely affect water quality or whether it is in the public interest.

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IV. CONCLUSION

Petitioners have failed to acknowledge and address the significant adverse impacts of WaterFix on the City, and have therefore, shifted the burden of responding to water quality impacts caused by the Project onto the City and its residents. NPDES permits for the RWCF are based on flows and water quality in the Delta. The WaterFix would alter those flows and cause water quality changes that would threaten Stockton's ability to comply with its NPDES permit and could force Stockton to invest in additional, expensive wastewater treatment processes. The costs for implementing additional wastewater treatment due to water quality degradation caused by the Project would be borne by the City's residents, a substantial proportion of whom are socioeconomically vulnerable. The City's concerns, and the concerns of the region as a whole, must be addressed before the change petition can be considered. It is in the public interest to deny the requested change petition, at least until more information relevant to the City's concerns is provided for review, and the appropriate assurances are provided (in the form of permit terms and conditions) that would avoid any harm to the City's water supply or its ability to comply with its NPDES permit, including potential harm should approval of the change petition lead to more stringent NPDES permit requirements.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed on this 29th day of November, 2017 in Stockton, California.

Robert Granberg, P.E.

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EXHIBIT D

Environmental Science

Exponent®

Report on the Effects of the California WaterFix Project on the City of Stockton

Exhibit STKN-26

Report on the Effects of the California WaterFix Project on the City of Stockton

Prepared for

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425 N. El Dorado Street
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Prepared by

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March 22, 2017

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Acronyms and Abbreviations

AMMP	Adaptive Management and Monitoring Program
B1	Boundary 1 operational scenario
B2	Boundary 2 operational scenario
BA	biological assessment
BDCP	Bay Delta Conservation Plan
BiOp	biological opinion
CCWD	Contra Costa Water District
CVP	Central Valley Project
DSM	Delta Simulation Model
DWR	Department of Water Resources
EIR	environmental impact report
EIS	environmental impact statement
FEIR	final environmental impact report
MAF	million acre feet
RDEIR	recirculated draft environmental impact report
SDEIS	supplemental draft environmental impact statement
SWP	State Water Project
SWRCB	State Water Resources Control Board
TAF	thousand acre feet
USFWS	U.S. Fish and Wildlife Service
WaterFix	California WaterFix Project
WYT	water year type

1. Qualifications

My name is Susan Paulsen and I am a Registered Professional Civil Engineer in the State of California (License # 66554). My educational background includes a Bachelor of Science in Civil Engineering with Honors from Stanford University (1991), a Master of Science in Civil Engineering from the California Institute of Technology ("Caltech") (1993), and a Doctor of Philosophy (Ph.D.) in Environmental Engineering Science, also from Caltech (1997). My education included coursework at both undergraduate and graduate levels on fluid mechanics, aquatic chemistry, surface and groundwater flows, and hydrology, and I served as a teaching assistant for courses in fluid mechanics and hydrologic transport processes. A copy of my curriculum *vitae* is included as Appendix A.

My Ph.D. thesis was entitled, "A Study of the Mixing of Natural Flows Using ICP-MS and the Elemental Composition of Waters," and the major part of my Ph.D. research involved a study of the mixing of waters in the Sacramento-San Joaquin Bay-Delta (the Delta). I collected composite water samples at multiple locations within the Delta, and used the elemental "fingerprints" of the three primary inflow sources (the Sacramento River, the San Joaquin River, and the Bay at Martinez), together with the elemental "fingerprints" of water collected at two interior Delta locations (Clifton Court Forebay and Franks Tract) and a simple mathematical model, to establish the patterns of mixing and distribution of source flows within the Delta during the 1996–1997 time period. I also directed model studies to use the chemical source fingerprinting to validate the volumetric fingerprinting simulations using Delta models (including the Fischer Delta Model (FDM) and the Delta Simulation Model (DSM)).

I currently am a Principal and Director of the Environmental and Earth Sciences practice of Exponent, Inc. ("Exponent"). Prior to that, I was the President of Flow Science Incorporated, in Pasadena, California, where I worked for 20 years, first as a consultant (1994-1997), and then as an employee in various positions, including President (1997-2014). I have 25 years of experience with projects involving hydrology, hydrogeology, hydrodynamics, aquatic chemistry, and the environmental fate of a range of constituents. I have knowledge of

California water supply issues, including expertise in California's Bay-Delta estuary. My expertise includes designing and implementing field and modeling studies to evaluate groundwater and surface water flows, and contaminant fate and transport. I have designed studies using one-dimensional hydrodynamic models, three-dimensional computational fluid dynamics models, longitudinal dispersion models, and Monte Carlo stochastic models, and I have directed modeling studies and utilized the results of numerical modeling to evaluate surface and ground water flows.

I have designed and implemented field studies in reservoir, river, estuarine, and ocean environments using dye and elemental tracers to evaluate the impact of pollutant releases and treated wastewater, thermal, and agricultural discharges on receiving waters and drinking-water intakes. I have also designed and managed modeling studies to evaluate transport and mixing, including the siting and design of diffusers, the water quality impacts of storm water runoff, irrigation, wastewater and industrial process water treatment facilities, desalination brines and cooling water discharges, and groundwater flows. I have designed and directed numerous field studies within the Delta using both elemental and dye tracers, and I have designed and directed numerous surface water modeling studies within the Delta.

2. Summary of Findings

The City of Stockton (the City) has retained Exponent to assist in evaluating the potential impacts of the WaterFix Project on water quality at the City's intake. Exponent has reviewed testimony submitted by the City as part of the State Water Resources Control Board (SWRCB)'s WaterFix proceedings as well as the City's comments on the Draft and Recirculated Draft Environmental Impact Report/Environmental Impact Statement (DEIR/EIS, RDEIR/EIS, respectively). As detailed below, Exponent's analysis of the WaterFix Project relies on a review of the model input and output files for the various alternative operational scenarios that have been provided by the California Department of Water Resources (DWR), including modeling files and documentation provided by DWR in the context of the FEIR/EIS.[1]

A key concern expressed by the City of Stockton was DWR's use of model results from a location known as "Buckley Cove" to evaluate water quality at the City's drinking water intake. DWR previously asserted, and the FEIR/FEIS continues to assert, that model results at the Buckley Cove location are representative of water quality at the City's intake location. However, as explained in detail below, Buckley Cove is over 8 miles from the City's drinking water intake (Figure 1), and both the composition and quality of water at Buckley Cove differ significantly from the composition and quality of water at the City's intake. For these reasons, model results from Buckley Cove are not representative of and cannot be used to accurately assess water quality changes at the City's intake. Because DWR did not evaluate water quality impacts at the location of the City's drinking water intake, Exponent used DWR's model input files and the Delta Simulation Model II (DSM2) to obtain model results to describe water quality impacts at the City's intake location. Exponent has concluded that the Project will result in substantial changes in the source and quality of water present at the City's drinking water intake on the San Joaquin River. Water quality changes relative to existing conditions at the City's intake will result in part from the export from the northern Delta of greater volumes of water and greater volumes of high quality Sacramento River water. Under most operational

[1] Exponent has previously submitted comments on the FEIR/EIS on behalf of the City; these comments can be found in Appendix G.

scenarios, a greater fraction of the water at the City's intake will come from the San Joaquin River rather than the Sacramento River, and higher salinity and other water quality changes will occur as a result.

Water quality impacts to the City's water supply will result from the implementation of operational scenarios included in Petitioner's WaterFix Petition (i.e., Boundary 1 and Boundary 2) as well as the FEIR/EIS's preferred operational scenario (Alternative 4A). DSM2 model results show that under the Project's Alternative 4A scenario, Boundary 1 condition, and Boundary 2 condition, the chloride concentration at the City's intake will exceed the City's threshold of 110 mg/L more frequently than under existing conditions. For other operational scenarios, impacts are even greater.[2]

Both the WaterFix Petition and the FEIR/EIS do not disclose the impacts of the project to the City's drinking water supply in several additional ways. Namely, DWR has used an inappropriate existing condition baseline to model water quality impacts in the Delta; has not disclosed water quality changes modeled by DWR over the full operational range of the Project; and, as mentioned previously, has not modeled water quality at the City's drinking water intake. In addition, DWR's presentation of only monthly average water quality data in the Petition and FEIR/EIS masks salinity increases that occur over shorter time intervals and that must be assessed to evaluate water quality impacts at the City's intake, which operates on an hourly basis, not a monthly average basis. Lastly, the Petition and the FEIR/EIS do not adequately address potential for an increase in *Microcystis* blooms, which are a risk to humans and wildlife. Rather, DWR uses a whole-Delta analysis approach which does not consider area-specific changes as they relate to key beneficial uses in the Delta.

[2] Exponent's technical analysis has focused primarily on chloride and *Microcystis* as well as changes in the hydrodynamics and residence times of the Delta indicated by the modeling. The City is also concerned about the potential for degradation of its water supply due to WaterFix-related increases in other water quality constituents, such bromide, nitrate and pesticides, and increased temperature, which could affect its compliance with wastewater discharge permit requirements. Based on Exponent's experience, the modeling and evaluation of chloride, and changes in the distribution and residence time of water within the Delta, Exponent would expect degradation for these water quality constituents of concern.

Figure 1. Location of Buckley Cove and City of Stockton's water intake. Map adapted from DWR Sacramento-San Joaquin Delta Atlas (1995), available at http://baydeltaoffice.water.ca.gov/DeltaAtlas/

3. Background

The City of Stockton is located on the San Joaquin River in the southeast Sacramento-San Joaquin Delta (the Delta). In 2012, the City began obtaining a portion of its potable water supply from the San Joaquin River in order to establish a long-term reliable water supply.[3] Currently, the City obtains approximately 38 percent of its water supply from the San Joaquin River, with purchased water and groundwater providing the remaining supply. The volume of water extracted from the San Joaquin River is projected to increase over time, such that by 2035 water from the river intake will constitute about 50 percent of the City's supply. The current operational capacity of the intake is 30 million gallons per day (MGD) and the projected capacity in 2035 is 90 MGD. In 2015, the City's potable and raw water demand was approximately 26,300 acre-feet/year (ac-ft/yr), while the City's projected demand in 2035 is expected to be over 40,000 ac-ft/yr. Stockton's intake pump station facility is located on the San Joaquin River as shown in Figure 1, which also shows the location of Buckley Cove.

The City of Stockton retained Exponent to evaluate and prepare technical comments on the WaterFix project, including the WaterFix proceedings and the FEIR/EIS. Specifically, the City asked Exponent to evaluate whether the proposed diversions will have an impact on the supply and quality of water available to Stockton. In conducting this work, Exponent evaluated model runs performed by DWR, performed DSM2 modeling using DWR's model input files to obtain output not provided by DWR, and reviewed DWR's assessment of the proposed Project. Exponent previously submitted technical comments for the City on the FEIR/EIS, which are included in this report as Appendix G.

[3] Brown and Caldwell. 2016. City of Stockton 2015 Urban Watershed Management Plan. July.

4. Methods

4.1. Operation of the Delta Simulation Model (DSM2)

DWR used the Delta Simulation Model II (DSM2) to simulate hydrodynamics and water quality throughout the Delta for a range of model conditions and operational scenarios. The DSM2 model has three separate components: HYDRO, QUAL, and PTM. HYDRO simulates flows in the channels defined in the DSM2 grid, stage (water surface elevation), and tidal forcing at the downstream model boundary (Martinez). QUAL simulates the concentrations of conservative (i.e., no decay or growth) variables, such as EC (electrical conductivity, a measure of salinity), given the flows in the Delta channels simulated by HYDRO. Although QUAL can simulate non-conservative variables, such as temperature and turbidity, results for non-conservative variables are not considered in this testimony. The particle tracking model (PTM) simulates mixing and transport of neutrally buoyant (suspended) particles based on the channel geometry and tidal flows simulated by HYDRO. The model results (model output) provided by DWR as part of the WaterFix proceedings include hydrodynamic and water quality information.

Exponent obtained from DWR the modeling input and output files from the DSM2 model, which was used to simulate hydrodynamics and water quality throughout the Delta for the proposed Project for a range of model conditions and operational scenarios. In addition to describing hydrodynamics and water quality, the DSM2 model can be used to perform "volumetric fingerprinting" to track inflows to the Delta throughout the model domain. Volumetric fingerprinting can be used to "tag" inflows to the Delta and to determine the source of water within the estuary. Exponent used the model input files provided by DWR and the DSM2 model to perform volumetric source fingerprinting to determine the location and time that flows from various sources entered the Delta. Exponent also used the model to evaluate hydrodynamics, water quality, and source fingerprints at the location of the City's drinking water intake, since DWR did not analyze these quantities at that location. Exponent's analysis was performed for select WaterFix Project scenarios (scenarios Boundary 1, Boundary 2, 4A (from the FEIR/EIS), and NAA) and for the existing condition model run described below.

In Exponent's volumetric fingerprinting analysis, source water fingerprints were used to determine both the location and time at which freshwater flows entered the Delta. Five inflows are typically considered in the DSM2 model for fingerprinting purposes: the Sacramento River, San Joaquin River, east-side streams, agricultural return flows, and flows from the Bay at Martinez. For a given date and location, the DSM2 model was used to calculate the percentage contribution from each of the respective inflow sources.

Because the water quality of the various sources of water to the Delta differs, source water fingerprints provide information to explain and interpret water quality data within the Delta. DSM2 has been widely used by DWR and others to analyze the source of water within the Delta for various time periods and conditions, and for both observed and hypothetical conditions (e.g., to evaluate the impacts of potential operational changes). Source water fingerprints were presented by DWR in FEIR/FEIS Appendix 8D for various locations in the Delta under different modeled scenarios; however, DWR did not provide source fingerprints in for Stockton's intake.

4.2. Water year type (WYT) classifications

Hydrology in the Delta varies from year to year. Water years in the Delta, defined as October through September of the following year, are classified as wet, above normal, below normal, dry, or critical. DWR determines the water year type by calculating a water year index number, which accounts for both the hydrology of the current year and the previous year's index.[4] By this classification system, the water years modeled in DSM2 by DWR fall into the following categories:

- Critical: 1976, 1977, 1988, 1990, 1991
- Dry: 1981, 1985, 1987, 1989
- Below Normal: 1979
- Above Normal: 1978, 1980
- Wet: 1982, 1983, 1984, 1986

[4] Water year classifications from CDEC, accessed at http://cdec.water.ca.gov/cgi-progs/iodir/WSIHIST.

Because there is only one Below Normal water year in the modeled record, Exponent combined results for the Below Normal year with model results for Above Normal water years for the purposes of analyzing the WaterFix model runs; the water year type for water years 1978–1980 is referred to from here forward as "Normal." In some analyses, data were averaged by water year type. This was done by aggregating data from those specific months or water year types and calculating an average. For example, the daily average chloride concentration during March of dry water years was calculated by sorting the DSM2 model results into bins such that the simulated salinity values for each day in March from years 1981, 1985, 1987, and 1989 were grouped and could then be averaged.

4.3. Water Usability at Stockton's Intake and overview of operations

Exponent produced volumetric fingerprints for both Buckley Cove and the City's intake for several Project operational scenarios. Those scenarios included existing biological conditions 1 (EBC1, which includes current sea levels and excludes Fall X2 requirement), a no action alternative (NAA), Boundary 1, Boundary 2, and the preferred Project Alternative 4A. Exponent also evaluated the existing biological conditions 2 model run (EBC2, which includes current sea levels and the Fall X2 requirement).

Exponent evaluated modeled salinity data at Buckley Cove and the City's intake under the EBC2, NAA, Boundary 1, Boundary 2, and Alternative 4A scenarios. The modeled salinity data were used to evaluate the effects of the Project on the water quality conditions at the City's intake in the San Joaquin River. The City typically employs a chloride threshold of 110 mg/L at the intake for diverting water which is useable for municipal and industrial supply; if the chloride concentration exceeds 110 mg/L, the City must generally use an alternative water supply, such as purchased water or groundwater. Because the City is able to turn its intake on and off over relatively short timescales, Exponent evaluated the number of one-hour intervals (added together and reported in terms of "equivalent" days) that the water in the San Joaquin River exceeded 110 mg/L chloride under various water year types and operational scenarios. Specifically, Exponent averaged the 15-minute DSM2 model output to calculate hourly average chloride concentrations and compared hourly concentrations to the threshold value. The number

of hourly averaged data points below the 110 mg/L chloride threshold were summed, converted to days (i.e., 24 one-hour intervals below the threshold became one "equivalent" day), and averaged by water year type.

4.4. Salinity calculations

The electrical conductivity (EC, a measure of salinity) of freshwater inflows to the Delta is lower than that of water that enters the estuary from San Francisco Bay, and which typically includes seawater. The Sacramento River and east side streams are typically the freshest (i.e., have the lowest salinity), while the San Joaquin River and agricultural return flows have higher salinity. Tidal inflows to the Delta at Martinez have the highest salinity levels, as they include seawater in all but the largest flood flows. For example, in 2015, averaged measured EC in the Sacramento River at Freeport was 168 µS/cm (equivalent to a total dissolved solids [TDS] of 103 mg/L[5]), while the average EC in the San Joaquin River at Vernalis was 595 µS/cm (343 mg/L TDS). The average EC at Martinez (downstream boundary of Delta) in 2015 was 26,384 µS/cm (17,882 mg/L TDS). By contrast, the salinity of seawater is approximately 50,000 µS/cm (35,000 mg/L TDS).[6,7]

4.4.1. EC to chloride conversions

The salinity of water in the Delta has historically been expressed as EC, total dissolved solids (TDS), or chloride. Many salinity measurements in the Delta are made using EC, and EC is widely used as a surrogate for salinity. Guivetchi (1986)[8] derived linear relationships between EC, TDS, and chloride for various locations in the Delta and generated mathematical equations that can be used to convert one type of salinity measurement to another. The DSM2 model provides salinity as EC, which was converted to chloride using these relationships.[9] For

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5 EC to TDS conversions were calculated using the method of Guivetchi 1986, which presented salinity conversion factors for various locations in the Delta.

6 Salinity (EC) data were obtained from CDEC, http://cdec.water.ca.gov/.

7 Exponent (2016). Report on the Effects of the Proposed California WaterFix Project on Water Quality at the City of Brentwood. Exhibit Brentwood-102 of the WaterFix Change Petition Proceedings. August 30, 2016.

8 Guivetchi, K. 1986. Salinity Unit Conversion Equations. Memorandum. California Department of Water Resources. June 24, 1986. Accessed at: http://www.water.ca.gov/suisun/facts/salin/index.cfm

9 See http://www.water.ca.gov/suisun/facts/salin/index.cfm for additional details.

Stockton, the relationship used to convert EC to chloride for all water years was as follows: chloride [mg/L] = -28.9 + (0.23647*EC [µmhos/cm]). Thus, at Stockton's intake location, a chloride concentration of 110 mg/L (ppm) is assumed to correspond to an EC of approximately 587 µS/cm.

4.4.2. Data averaging

The DSM2 model produces data on 15-minute intervals. The time period modeled in DSM2 for most WaterFix analyses spans from water year (WY) 1975–WY 1991; however, the model results from WY 1975 are considered model "spin-up" time and are excluded from analyses. Exponent's analyses are based on the 16-year record from WY 1976–WY 1991. For this analysis, the 15-minute DSM2 data were averaged on an hourly basis and compared to the 110 mg/L chloride threshold value, as described in Section 4.3.

4.5. Calculation of residence times for Delta inflow using DSM2 results

The residence time of water in the Delta was calculated for each water year between 1976 and 1991 under scenarios EBC2, NAA, Boundary 1, Boundary 2, and Alternative 4A using a mass balance procedure that relied upon the total volume of water in the Delta and total Delta inflows for the given water year type and operational scenario. The monthly average residence time was estimated by dividing the total volume of water in the Delta by the total inflows for each month. Jassby and Cloern (2000)[10] estimated that the waterways within the Delta have a surface area of approximately 230 million m^2 (57,000 acres, or 2.5 billion ft^2) and a water depth ranging from less than 1 m (3.3 ft) to greater than 15 m (49 ft). Assuming an average depth of 6 m (20 ft), the volume of water in the Delta at any point in time would be about 1.4 billion m^3 (1.2 million acre-feet). Total monthly Delta inflows were calculated as the sum of flows from Sacramento River, San Joaquin River, east side streams, inflow from Martinez, and Yolo bypass flow minus any North Delta diversions. The monthly average inflow was determined by calculating the

[10] Jassby, A.D. and J.E. Cloern. 2000. Organic matter sources and rehabilitation of the Sacramento-San Joaquin Delta (California, USA). Aquatic Conservation: Marine and Freshwater Ecosystems. Volume 10, Issue 5, 323-352. October.

monthly running average inflow (i.e., sum of 30 previous daily average inflow values) using data from DWR's DSM2 model files for the 16-year model period.

5. WaterFix Operations are not defined

5.1. DWR has not defined WaterFix operations and has not conducted modeling of Alternative 4A for the WaterFix proceedings

The WaterFix operations have remained ill-defined both during the WaterFix proceedings and in the FEIR/EIS. DWR has stated in the WaterFix proceedings that the Project may operate to a range of potential operational scenarios, specifically those represented by the boundary conditions Boundary 1 and Boundary 2. DWR testified before the State Board to evaluating "a range call [sic] Boundary 1 to Boundary 2. And the purpose of that is because… this project also includes the collaborative science and adaptive management program and the ability to make adjustments to the initial operating criteria based on science and monitoring… So Boundary 1 and 2 represent what we think at this time, based on those uncertainties, are the range of potential adjustments that may be made."[11] During cross-examination in the WaterFix Change Petition Proceedings, DWR stated that it is appropriate to "evaluate the effects of Boundary 1 and the effects of Boundary 2" in evaluating potential injury from the WaterFix flow proposal. [12]

5.2. AMMP was not defined in the WaterFix proceedings or in the FEIR

The Adaptive Management and Monitoring Program (AMMP) remained almost wholly undefined in both the WaterFix Petition and the FEIR/EIS, which offer only a broad description of program objectives and the program's conceptual framework. The AMMP is intended to be a project management strategy that allows for wide flexibility in determining the rates, volumes, and timing of water diversion operations from the Sacramento River, and which is expected to be a central component of the Project. DWR has indicated that Project operations may vary within a very wide range of operations, from Scenario Boundary 1 to Scenario Boundary 2;

[11] See p. 40 of SWRCB. 2016. Transcript of California WaterFix Water Right Change Petition Hearing. Part 1A Testimony, Volume 4, p. 40, Hearing before the State Water Resources Control Board. July 29

[12] See pp. 151-152 of SWRCB. 2016. Transcript of California WaterFix Water Right Change Petition Hearing. Part 1A Testimony, Volume 4, p. 40, Hearing before the State Water Resources Control Board. July 29.

however, DWR has provided almost no documentation to describe how Project operations will be managed under the AMMP, and DWR has not described the logic or rules that will be used to adjust project operations within this broad range.

Instead, DWR states that "detailed monitoring and research plans *will be developed* that identify specific metrics and protocols" (FEIR/EIS p. 3-26, emphasis added) which should govern the AMMP. The FEIR/EIS also states that the AMMP may serve as a means to change Project operations beyond permitted limits.[13] DWR's testimony at the WaterFix hearings was also consistent with the representation of the AMMP.[14] The specific metrics and protocols by which the Project operations will be managed will determine the impacts of the proposed Project but thus far have not been developed or described. Neither the Petition nor the FEIR/EIS describe which agencies or personnel will be responsible for the research plans, operational protocols, and metric evaluation, or what the respective authorities and limits of the agencies will be. Adding to the confusion surrounding the AMMP, DWR states that "the adaptive management and monitoring program is directly related to several key components of the BDCP" (FEIR p. 3-26), but fails to identify which "key components" are referenced.

In contrast, the requirements of an adaptive management program for the Delta have been defined on multiple occasions. In February 2009, the Independent Science Advisors issued a report entitled "Bay Delta Conservation Plan Independent Science Advisors' Report on Adaptive Management."[15] The Independent Science Advisors recommended "more extensive

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[13] The FEIR/EIS (p. 3-287) states that "[t]he collaborative science effort is expected to inform operational decisions within the ranges established by the biological opinion and 2081b permit for the proposed Project. However, if new science suggests that operational changes may be appropriate that fall outside of the operational ranges evaluated in the biological opinion and authorized by the 2081b permit, the appropriate agencies will determine, within their respective authorities, whether those changes should be implemented."

[14] See, for example, the testimony of Jennifer Pierre on July 29, 2016 (SWRCB. 2016. Transcript of California WaterFix Water Right Change Petition Hearing. Part 1A Testimony, Volume 4, p. 45-46. Hearing before the State Water Resources Control Board. July 29): "The collaborative sciences adaptive management program itself is currently under development. It will be provided as part of Part 2. There is a framework that was included as part of the DWR exhibits that outlines the general points of – that will be included in the adaptive management, but there's more work to be done to really flesh out the full process that will be available for Part 2. But it will be focused on three important things. First, it will focus on the screen design at the North Delta diversion. … It will also focus on habitat restoration. … And probably most importantly for the Part 1 proceedings is that it will affect and potentially change the initial operating criteria through the process that's outlined in the framework and that will be expanded on in the full proposal… "

[15] Bay Delta Conservation Plan Independent Science Advisors' Report on Adaptive Management. Prepared for the BDCP Steering Committee. February 2009. Available at

and explicit use of models to formalize knowledge about the system and to select, design, and predict outcomes of conservation measures"; the advisors also recommended that "greater attention be given to the learning value of actions, and to establishing a formal process by which new knowledge is used to alter actions or revise goals or objectives."[16] The Delta Plan issued in 2013 also included an appendix entitled "Adaptive Management and the Delta Plan."[17] This document described adaptive management, as defined in the Delta Reform Act, as "a framework and flexible decision-making process for ongoing knowledge acquisition, monitoring, and evaluation leading to continuous improvements in management planning and implementation of a project to achieve specified objectives (Water Code section 85052)."[18] The document identified a "three-phase and nine-step" adaptive management framework. Additionally, a document entitled, "Improving adaptive management in the Sacramento-San Joaquin Delta"[19] was released in 2016 and provided eight major recommendations. Among them were recommendations to assemble an appropriate mix of "experts, agency leaders, resource managers, practitioners, scientists, stakeholders, and regulators" to develop a coordinating team; to support adaptive management with funding that is dependable and flexible; to design monitoring protocols; to integrate science and regulations to enhance flexibility; and to develop a framework for setting decision points or thresholds that will trigger a management response.

The little information that is provided on the AMMP in the Petition and FEIR/EIS focuses on water supply and water quality outcomes that impact fish survival, rather than those that impact municipal and industrial (M&I) water supply. For example, on page 3-283 of the FEIR/EIS, DWR states that "Under the current BiOps and future operations under California WaterFix, a 'real-time operations' (RTO) mechanism will allow for adjustments of water operations, within established conditions … to benefit covered fish species." The AMMP does not describe efforts

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http://baydeltaconservationplan.com/Libraries/Dynamic_Document_Library/Independent_Science_Advisors_Report_on_Adaptive_Management_-_Final_2-1-09.sflb.ashx.

[16] Ibid at p. ii.

[17] Delta Stewardship Council (2013). The Delta Plan. Appendix C: Adaptive Management and the Delta Plan Available at http://deltacouncil.ca.gov/sites/default/files/documents/files/AppC_Adaptive%20Management_2013.pdf.

[18] Ibid at p. C-3

[19] Delta Independent Science Board (2016). Improving Adaptive Management in the Sacramento-San Joaquin Delta. January 2016. Available at http://deltacouncil.ca.gov/docs/final-delta-isb-adaptive-management-review-report.

or protocols to protect water quality for M&I beneficial uses, does not include metrics, standards, or boundaries that will be used to evaluate water quality impacts, and does not describe any measures that may be implemented to address or mitigate water quality degradation. The fact that water quality apparently will not be considered to protect drinking water beneficial uses within the AMMP leads to still more uncertainty regarding the potential impacts of the proposed Project on the City.

5.3. DWR's long-term averages mask project impacts and do not provide the level of detail needed for the City to plan for the future

Operating the Project to the preferred Alternative 4A will cause salinity to increase substantially at the City's intake. Although DWR shows the projected impact of Alternatives H3, H4, Boundary 1, Boundary 2, and 4A at various locations in the Delta (but not at the City's intake), the water quality data are presented as monthly average concentrations of EC and chloride.[20] Monthly average chloride concentrations cannot be used to evaluate the impacts of the proposed Project on drinking water intakes within the Delta, as long-term average concentrations by definition cannot show shorter-term changes in salinity and water quality levels and have the effect of masking substantial increases that will adversely affect Delta water users, including the City. Thus even if the locations evaluated in the FEIR/EIS were representative of conditions at the City's intake, the decision to present water quality data in terms of long-term monthly average concentrations masks the substantial adverse changes in water quality that will occur.

Although DWR asserts that long-term averaging is appropriate to assess water quality changes, DWR's justification for its use of long-term average concentrations is inadequate and

[20] The DSM2 model produces output data at 15-minute intervals. For example, the DSM2 model provides a modeled electrical conductivity (used to calculate chloride levels) values for each 15-minute interval in the 16-year modeled record (water years 1976-1991). DWR has aggregated the 15-minute model output data to calculate long-term monthly averages, which was done by first averaging data from each individual month at a specific location, and second, by averaging all data for that month over the full 16-year simulation period. For example, the 16 values of the monthly average chloride concentration for all the months of March at Buckley Cove were averaged to generate the average chloride concentration at Buckley Cove for the month of March (and the same process was followed for other months). Results for scenarios H3, H4, Boundary 1, and Boundary 2 were summarized by DWR in the WaterFix Petition before the SWRCB; results for scenario 4A were summarized in the FEIR/EIS.

inaccurate.[21] Because water intake operations are typically managed on an hourly or sub-hourly basis, hourly or sub-hourly chloride concentrations are needed for drinking water operators to understand the impacts on their operations. DSM2 offers the best available tool for assessing impacts to drinking water operations on a time scale relevant to operations (i.e., daily concentrations), and it is well-established that the DSM2 is suited to simulate the tidally driven hydrodynamics of the Delta, which are, in part, the cause of water quality changes over daily or sub-daily timescales. Although the model is not intended to be used in a predictive fashion, the use of the model's daily (or hourly, or sub-hourly) average concentration output can be employed for comparing and contrasting various operational scenarios. Indeed, hourly DSM2 model output has been widely used to assess changes in water quality and hydrodynamics in the Delta for both CEQA and NEPA purposes.[22] Comparing hourly model output for various operational scenarios provides appropriate and necessary information for gauging water quality impacts to the City's intake.

Although neither the WaterFix Petition nor the FEIR/EIS assessed chloride impacts at the City's intake, impacts at Buckley Cove were assessed. For example, Figure 2 is an excerpt of Table Cl-70 from Appendix 8G of the FEIR/EIS (p. 8G-84) which shows the change in average chloride concentration under Alternative 4A relative to the NAA and EBC1 baselines. The change in chloride concentrations in the table is reported as a monthly average concentration. As shown in Figure 2 (FEIR/EIS Table Cl-70), the maximum reported change in chloride at Buckley Cove relative to the NAA during the month of March is 9 mg/L in drought years (defined as the five year period of water years 1987 to 1991, which consists of both dry and critical water year types); however, DSM2 model output evaluated by Exponent under this scenario shows that the change in chloride concentration in March at Buckley Cove can be much greater than 9 mg/L—

[21] FEIR/EIS Master Response 14 (pp. 1-123 to 1-124) states, "Given the models used and the associated limitations in interpreting the output, utilizing a shorter time step than monthly average for assessing water quality changes at the City of Antioch and CCWD's intakes would not result in a more accurate assessment of effects of the Project on salinity-related parameters (i.e., EC, chloride, bromide) or organic carbon. While there would be days within a month in which parameter concentrations/levels at a given location would be higher than the monthly average at that location (just as there would be days when it is lower), given the modeling limitations, comparing alternatives and baselines based on the monthly average at those locations is considered appropriate for the purposes of NEPA and CEQA."

[22] Ascent Environmental (2014) Final Environmental Impact Report for the Sacramento Regional County Sanitation District EchoWater Project. September 12.

for example, the difference in daily chloride concentration at Buckley Cove between Alternative 4A and NAA during March of 1981 (a dry water year) is over 25 mg/L (Figure 3).

DWR's use of long-term average monthly concentrations in the FEIR/FEIS serves to mask increases in chloride concentrations that are simulated to occur under various operational scenarios; as such, the use of long-term monthly average simulated chloride concentrations is inappropriate for assessing water quality impacts in the Delta. The use of hourly or daily average salinity is more appropriate for evaluating water quality impacts at drinking water intakes.

Table CI-70. Period average change in chloride concentrations (mg/L) for Alternative 4A ELT relative to existing conditions and the No Action Alternative ELT. Calculation of chloride concentrations was based on EC-chloride relationship.

Chloride			OCT		NOV		DEC		JAN		FEB		MAR		APR		MAY		JUN		JUL		AUG		SEP		Annual Avg. Change	
Alt 4A ELT	Location	Period [1]	Ex. Cond.	No Act. ELT	Ex. Cond.	No Act. ELT	Ex. Cond.	No Act. ELT	Ex. Cond.	No Act. ELT	Ex. Cond.	No Act. ELT	Ex. Cond.	No Act. ELT	Ex. Cond.	No Act. ELT	Ex. Cond.	No Act. ELT	Ex. Cond.	No Act. ELT	Ex. Cond.	No Act. ELT	Ex. Cond.	No Act. ELT	Ex. Cond.	No Act. ELT	Ex. Cond.	No Act. ELT
Delta Interior	Mokelumne R. (SF) at Staten Island	ALL	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
			(3%)	(3%)	(3%)	(2%)	(1%)	(1%)	(5%)	(4%)	(4%)	(4%)	(5%)	(4%)	(3%)	(3%)	(0%)	(1%)	(0%)	(1%)	(3%)	(3%)	(2%)	(1%)	(1%)	(1%)	(3%)	(2%)
		DROUGHT	0	0	0	0	0	0	1	1	0	1	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0
			(2%)	(2%)	(1%)	(1%)	(-0%)	(1%)	(4%)	(3%)	(1%)	(3%)	(1%)	(3%)	(-0%)	(1%)	(0%)	(1%)	(0%)	(1%)	(5%)	(4%)	(2%)	(-1%)	(1%)	(0%)	(1%)	(2%)
	SJR at Buckley Cove	ALL	-8	0	-12	-1	-22	4	-21	3	-13	6	-10	5	-16	-6	-9	1	-6	4	-7	7	-11	6	-12	-1	-12	2
			(-8%)	(0%)	(-11%)	(-1%)	(-15%)	(4%)	(-13%)	(3%)	(-9%)	(5%)	(-7%)	(4%)	(-18%)	(-7%)	(-12%)	(2%)	(-8%)	(5%)	(-7%)	(7%)	(-10%)	(6%)	(-11%)	(-1%)	(-11%)	(2%)
		DROUGHT	-14	0	-18	-1	-33	2	-32	6	-14	12	-12	9	-32	-12	-14	3	-22	7	-11	15	-15	18	-17	0	-20	5
			(-11%)	(-0%)	(-13%)	(-1%)	(-20%)	(2%)	(-15%)	(4%)	(-6%)	(6%)	(-8%)	(5%)	(-19%)	(-8%)	(-12%)	(3%)	(-17%)	(7%)	(-9%)	(17%)	(-12%)	(20%)	(-12%)	(-0%)	(-13%)	(4%)
	Franks Tract	ALL	-60	-41	-125	-97	-67	-44	-32	-30	-10	-6	2	3	5	5	2	3	3	2	-49	-32	-44	-32	-29	-20	-34	-24
			(-32%)	(-24%)	(-54%)	(-48%)	(-32%)	(-24%)	(-24%)	(-23%)	(-16%)	(-10%)	(5%)	(8%)	(15%)	(16%)	(5%)	(9%)	(6%)	(5%)	(-38%)	(-28%)	(-29%)	(-23%)	(-15%)	(-11%)	(-28%)	(-22%)
		DROUGHT	-38	-52	-98	-112	-41	-40	-22	-35	-11	-15	2	1	5	6	7	5	9	0	-86	-61	-55	-24	31	18	-25	-25
			(-17%)	(-21%)	(-36%)	(-38%)	(-15%)	(-15%)	(-12%)	(-16%)	(-15%)	(-20%)	(6%)	(1%)	(18%)	(19%)	(22%)	(14%)	(22%)	(1%)	(-42%)	(-33%)	(-24%)	(-12%)	(13%)	(7%)	(-16%)	(-17%)
	Old R. at Rock Slough	ALL	-35	-22	-96	-76	-60	-40	-26	-29	-7	-2	4	7	2	4	-1	2	5	5	-36	-23	-39	-29	-22	-17	-26	-18
			(-23%)	(-16%)	(-51%)	(-45%)	(-33%)	(-25%)	(-21%)	(-21%)	(-10%)	(-4%)	(9%)	(15%)	(4%)	(9%)	(-2%)	(4%)	(12%)	(13%)	(-35%)	(-26%)	(-31%)	(-25%)	(-14%)	(-11%)	(-24%)	(-16%)
		DROUGHT	-15	-25	-75	-92	-37	-34	-16	-33	-12	-13	2	5	5	8	7	7	9	4	-69	-49	-54	-29	20	12	-19	-20
			(-8%)	(-13%)	(-35%)	(-40%)	(-16%)	(-15%)	(-9%)	(-18%)	(-13%)	(-14%)	(4%)	(8%)	(9%)	(16%)	(18%)	(17%)	(24%)	(8%)	(-43%)	(-35%)	(-28%)	(-17%)	(10%)	(6%)	(-14%)	(-15%)

Figure 2. Excerpt of Table CI-70 from Appendix 8G of the FEIR/EIS (p. 8G-84) showing the change in average chloride concentration under Alternative 4A relative to the NAA and EBC1 baselines

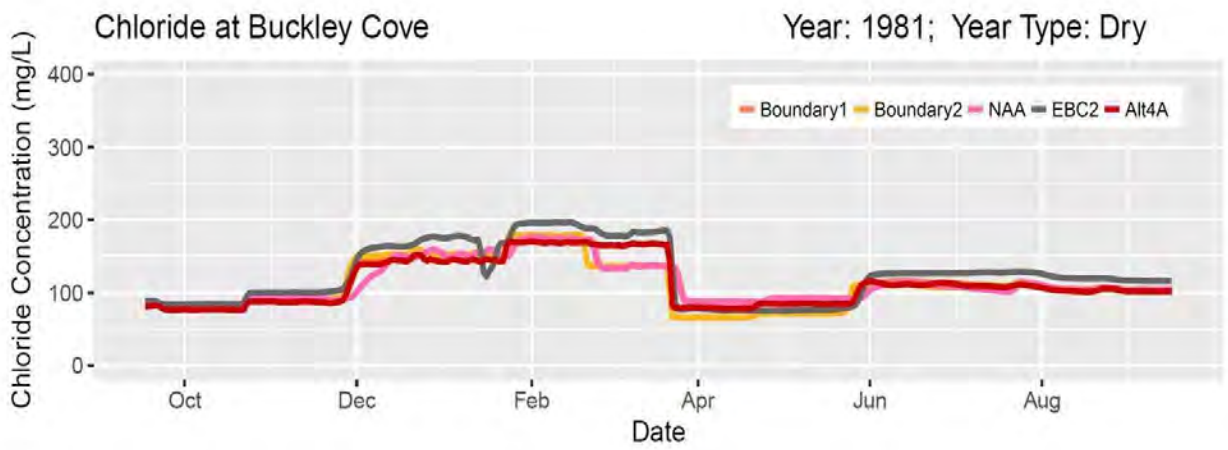

Figure 3. Daily mean concentration of chloride at Buckley Cove under various operational scenarios during water year 1981

6. DWR has not evaluated water quality at Stockton's Intake

6.1. Source water fingerprints show different sources of water at Buckley Cove and Stockton's intake

The Petition and FEIR do not assess the expected water quality impacts at the City's drinking water supply intake from the proposed operation of the Project. Rather, DWR discusses model results describing water quality at Buckley Cove in the San Joaquin River and purports to use model results from Buckley Cove to assess the range of water quality impacts expected at the City's intake.[23] However, the City's intake is located more than eight miles downstream of Buckley Cove, and a number of sloughs and waterways join the San Joaquin River downstream of Buckley Cove. These sloughs and waterways (see **Error! Reference source not found.**) carry water from the Mokelumne River, the Sacramento River, and other sources to the San Joaquin River in the vicinity of the City's intake. For this reason, water supply and water quality conditions are significantly different at the City's drinking water intake than at Buckley Cove.

As described in the Section 4 (Methods) of this report, Exponent used the DSM2 model and DWR's model input files to evaluate the "source fingerprints" of water at Buckley Cove and the City's drinking water intake. The DSM2 model results indicate that water at Buckley Cove has a markedly different composition than water at the City's intake. For example, source water fingerprints describing existing conditions (NAA and EBC2 scenarios) show that San Joaquin River water is the dominant source (up to 95 percent) of water at Buckley Cove during all months of dry water years, while Sacramento River water is absent at this location in all but about three months, when it is present at low concentrations (up to 20 percent) (Figure 5). In contrast, Sacramento River water is the dominant source of water (up to 90 percent) at the City's intake in dry years, with San Joaquin River water comprising no more than about 50 percent of the water at the City's intake for relatively short periods of time (Figure 4).

[23] For example, the FEIR/EIS states, "For municipal intakes located in the Delta interior, assessment locations at Contra Costa Pumping Plant No. 1 and Rock Slough are taken as representative of Contra Costa's intakes at Rock Slough, Old River and Victoria Canal, and the assessment location at Buckley Cove is taken as representative of the City of Stockton's intake on the San Joaquin River" (FEIR/EIS, p. 8-165).

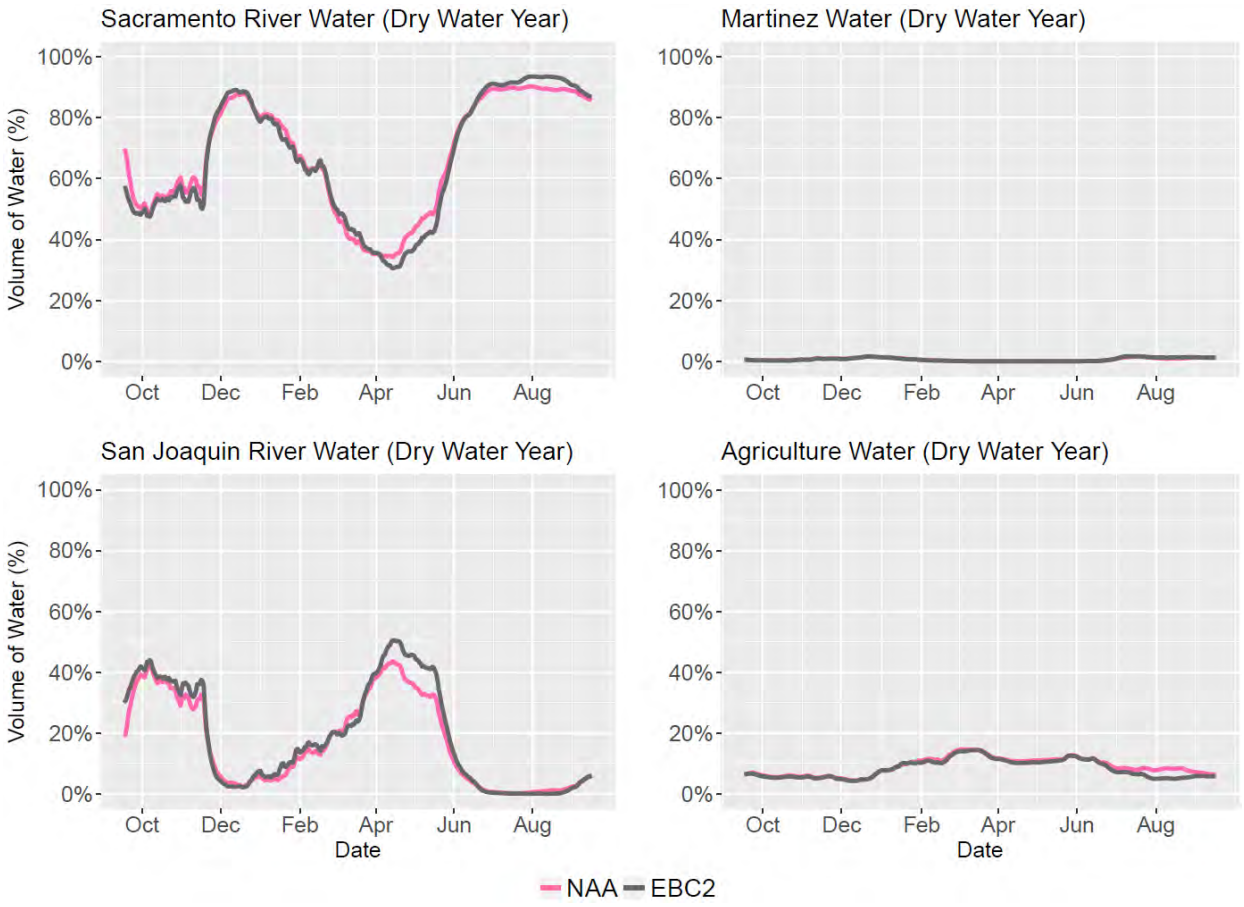

Figure 4. Source water fingerprint at Stockton's intake under the NAA and EBC2 baseline conditions during dry water years (average)

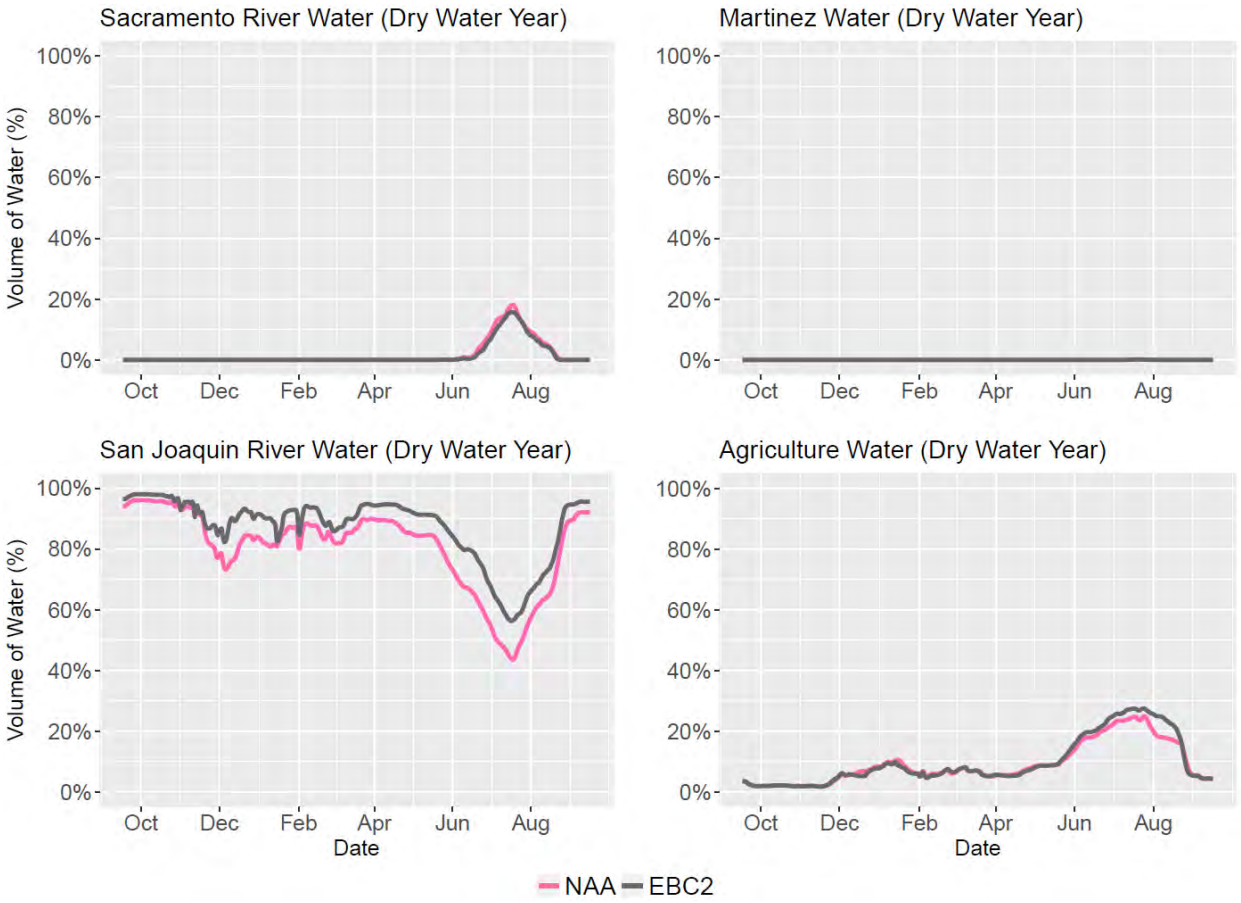

Figure 5. Source water fingerprint at Buckley Cove under the NAA and EBC2 baseline conditions during a dry water year

The differences in source water between Buckley Cove and the City's intake are observed in all water year types. In every water year during the modeled period (1976 to 1991), the modeled percentage of Sacramento River water at the City's intake (up to 95 percent) was significantly greater than at Buckley Cove (where it constituted only up to 40 percent and was frequently entirely absent) (Figure 6). Source fingerprints at the City's intake and Buckley Cove for all other water year types are presented in Appendix B.

The source of water at the City's intake is important because Sacramento River water is typically higher in quality (lower in salinity) than San Joaquin River water (see Section 4.4). Source water fingerprints obtained using DWR's DSM2 model input files definitely indicate that the source of water and water quality at Buckley Cove are not representative of water at the City's intake.

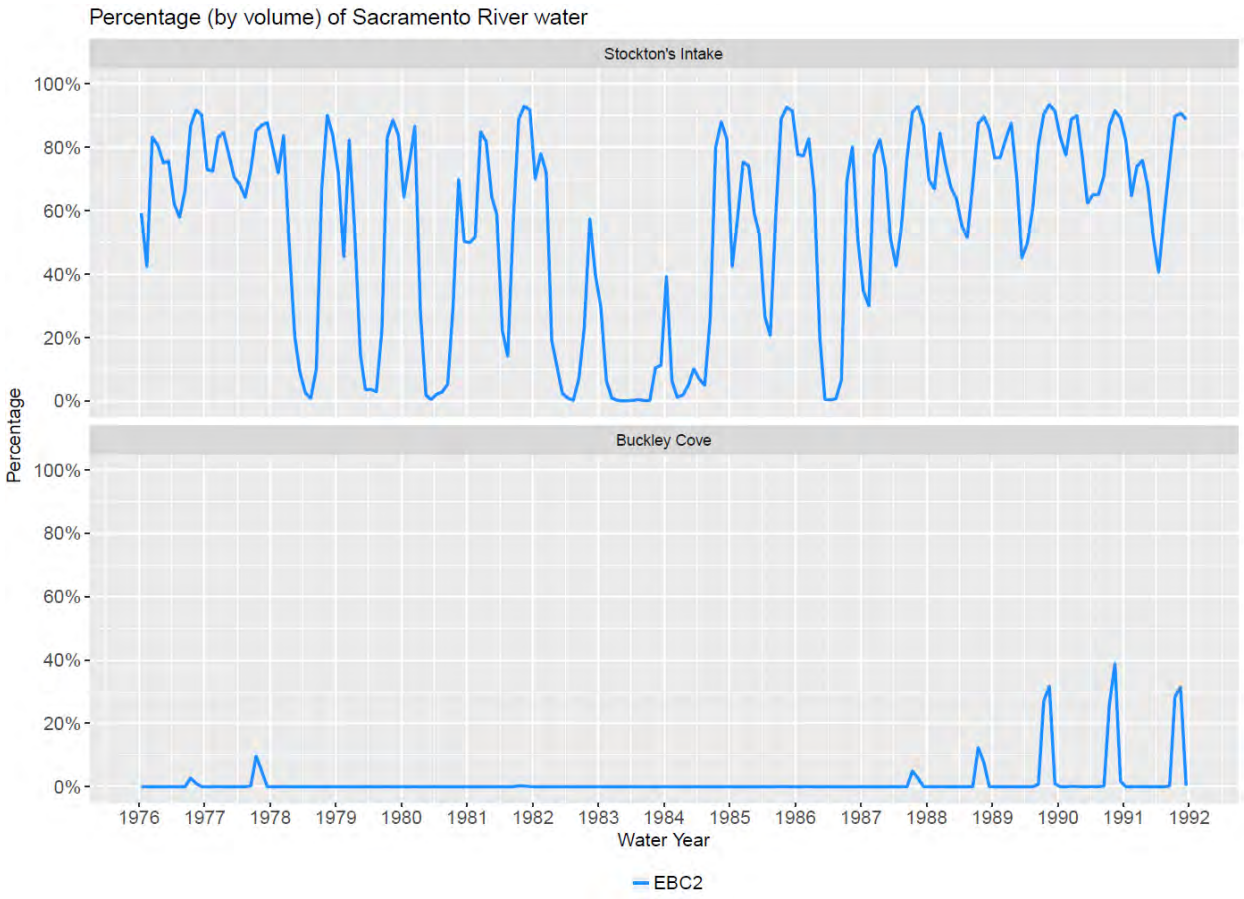

Figure 6. Percentage (by volume) of Sacramento River water at Stockton's intake (top panel) and Buckley Cove (bottom panel) from 1976 to 1991 under existing condition (EBC2)

6.2. Salinity is substantially different at Buckley Cove and Stockton's intake

As expected, water quality is also notably different at the City's intake than at Buckley Cove. As discussed in the methods section above, the yearly average salinity of the San Joaquin River is higher (343 mg/L TDS in 2015) than the Sacramento River (103 mg/L TDS in 2015); because the Sacramento River represents a larger fraction of the water at the City's intake (up to 95 percent), the salinity at the City's drinking water intake is generally lower than at Buckley Cove. Figure 7 and Figure 8 show the average simulated chloride concentration at the City's intake and at Buckley Cove, respectively, during dry water years under the EBC2 baseline. During dry water years, the simulated daily average chloride concentration at the City's intake varied from

a low of 25 mg/L (June) to 100 mg/L (March) (Figure 7). In contrast, the daily average simulated chloride concentration at Buckley Cove varies from approximately 80 mg/L (October) to 180 mg/L (February and March) (Figure 8). Chloride concentration model results for other water year types are presented in Appendix C.

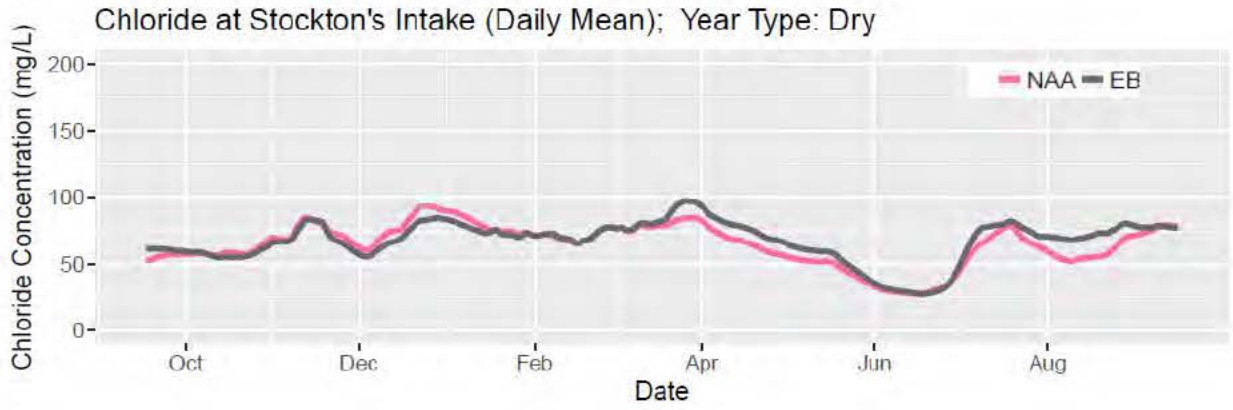

Figure 7. Simulated daily concentration of chloride at the City's intake during dry water year under baseline conditions NAA and EBC2

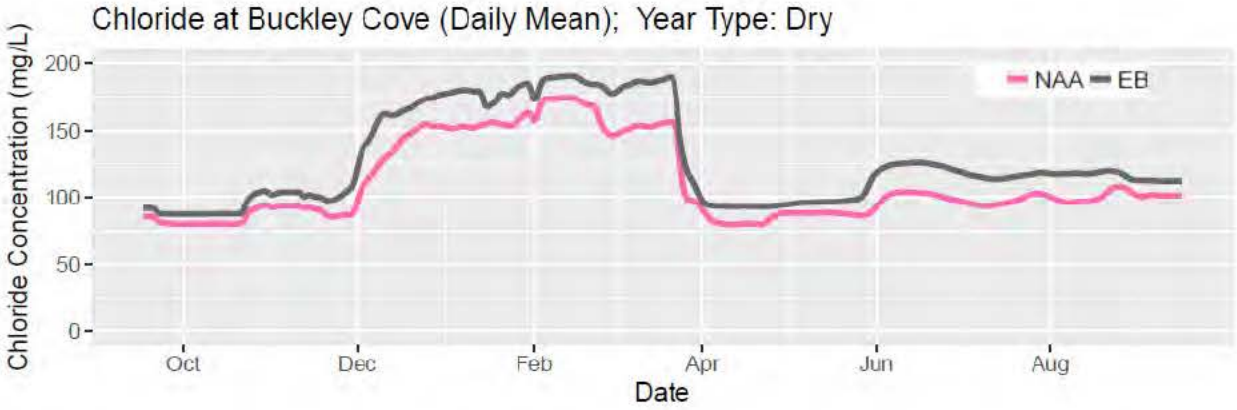

Figure 8. Concentration of daily chloride at the Buckley Cove during a dry water year under baseline conditions NAA and EBC2

DWR's response to the City's comments on the RDEIR/EIS[24] and DEIR/EIS[25], where the City pointed out the location discrepancy, states that "the effects of alternatives at the locations assessed are considered representative of the effects of the alternatives in various portions of the Delta as a whole," and DWR asserted that water quality conditions at Buckley Cove are representative of the "eastern Delta, where the City's intake is located."[26] As discussed above, DWR's analysis is incorrect, as DSM2 modeling performed using DWR's model input files demonstrates that the conditions at Buckley Cove and within other portions of the eastern Delta interior can and do vary significantly from conditions at the City's intake location. As a result, water quality data modeled at Buckley Cove do not represent the range of impacts that are expected at the City's water supply intake under the proposed Project.

[24] Exhibit STKN-003.

[25] Exhibit STKN-004.

[26] FEIR/EIS, RECIRC Comment Responses Letters 2400-2499, pp. 156–157

7. WaterFix does not use appropriate Delta baseline conditions or characterize the expected range of Project operations

7.1. WaterFix does not use the appropriate Delta baseline condition or accurately describe the existing condition

While DWR's WaterFix Petition and testimony use only a future no action alternative (NAA) scenario as the baseline to assess project impacts for Scenarios H3, H4, Boundary 1, and Boundary 2, the FEIR/EIS analysis utilizes an existing condition scenario known as EBC1 to evaluate Project impacts under the preferred Alternative 4A scenario. While we agree with DWR's decision in the FEIR/EIS to include an existing condition scenario to evaluate project impacts, we disagree with the choice of the baseline condition used in the evaluation. Specifically, the EBC1 scenario is flawed and inappropriate because it does not include the Fall X2 provision of the 2008 U.S. Fish and Wildlife Service Biological Opinion (2008 BiOp) that governs CVP/SWP operations.[27] Failing to include the Fall X2 provision in EBC1 increases the modeled salinity of the existing condition, particularly during the fall period in certain modeled years, which in turn makes the water quality impacts of Alternative 4A appear less significant than they would with the appropriate baseline. Because the 2008 BiOp presents the requirement to manage Delta outflows and operate water storage and releases to achieve the Fall X2 provision, and because current project operations include the Fall X2 requirement, the existing

[27] On p. 4-6, the FEIR/EIS states that the Fall X2 salinity requirement was not included in the existing condition baseline since "[a]s of spring 2011, when a lead agency technical team began a new set of complex computer model runs in support of this EIR/EIS, DWR determined that full implementation of the Fall X2 salinity standard as described in the 2008 USFWS BiOp was not certain to occur within a reasonable near-term timeframe because of a recent court decision and reasonably foreseeable near-term hydrological conditions. As of that date, the United States District Court has not yet ruled in litigation filed by various water users over the issue of whether the delta smelt BiOp had failed to sufficiently explain the basis for the specific location requirements of the Fall X2 action, and its implementation was uncertain in the foreseeable future."

After the U.S. District Court's ruling in March 2011 that the BiOp insufficiently explained the basis for Fall X2 location requirements, in March 2014—almost three years before the issuing of the FEIR/EIS—the Ninth Circuit U.S. Court of Appeals overturned the District Court's ruling, finding that the BiOp *did* sufficiently explain the basis of the specific Fall X2 location requirements (*San Luis vs. Jewell*, Case No. 11-15871). Thus, the pending litigation referred to in the FEIR/EIS has long since been resolved, and the Fall X2 requirements should have been included (together with the other BiOp requirements that were included) in the baseline existing condition.

condition should include the Fall X2 requirement. DWR previously released modeling that utilized a baseline condition designed to meet Fall X2: the EBC2 scenario, presented in the 2013 Revised Administrative Draft. However, the 2013 DEIR/EIS, the 2015 RDEIR/EIS, and the 2016 FEIR/EIS used only the EBC1 scenario.

Table 1 shows that the number of days existing source water at Stockton's intake exceeds a chloride concentration of 110 mg/L is greater under the EBC1 scenario than under the EBC2 scenario for most water year types. For example, the average number of days in dry water years that the chloride concentration at the City's intake exceeds 110 mg/L is 58 under the EBC1 baseline and 31 under the EBC2 scenario (Table 1). Thus, the baseline water quality condition used by DWR in the FEIR/EIS (EBC1) is more saline because EBC1 is not operated to meet Fall X2 conditions. Because the EBC2 scenario more appropriately represents an accurate baseline condition by adhering to the Fall X2 requirement, Exponent has evaluated Project impacts using the EBC2 baseline condition.

Because they did not use the EBC2 scenario as the existing conditions scenario in the FEIR/EIS, DWR has not accurately disclosed the magnitude of water quality impacts that would occur from the Project relative to existing conditions. Also, because DWR did not present an existing conditions scenario in the WaterFix Petition and testimony, impacts to the City cannot be adequately assessed. In addition, the NAA scenario did not include operations to meet Fall X2 while the project scenarios (H3, H4, Boundary 1, and Boundary 2) did operate to meet Fall X2, again creating a situation where the baseline condition results in higher salinity than would otherwise occur, making the impact of the proposed project appear smaller.

Table 1. Number of days that water at Stockton's intake exceeds 110 mg/L chloride under three modeled baseline scenarios according to water year type

	No. of days per year that water at Stockton's intake exceeds a chloride threshold of 110 mg/L		
Water Year Type	EBC1 Existing Condition **Does not** include Fall X2 **No** sea-level rise	EBC2 Existing Condition **Includes** Fall X2 **No** sea-level rise	NAA baseline condition **Includes** Fall X2 **15-cm** sea-level rise
Critical	50	35	50
Dry	58	31	36
Normal	44	36	44
Wet	11	11	11

7.2. DWR Did Not Fully Characterize the Entire Range of Expected Project Operations or Associated Water Quality Impacts.

While DWR presented summary analyses for the Boundary 1 and Boundary 2 scenarios in the WaterFix Petition and testimony, the FEIR/EIS did not include a full analysis of these scenarios. Thus, the FEIR/EIS for the proposed project did not characterize the water quality and water supply impacts that would be expected over the full range of the Project's proposed operational scenarios.

The FEIR/EIS did not fully evaluate the water quality impacts of Boundary 1 or Boundary 2, which are representative of proposed operations of the Project, as DWR has indicated in testimony to the SWRCB in the WaterFix water rights change petition proceedings.[28] In the water rights proceedings before the SWRCB, DWR disclosed that under its AMMP, Project diversion and conveyance facility operations could fall anywhere from the Boundary 1 scenario (characterized by low Delta outflow and high exports) to the Boundary 2 scenario (characterized by high Delta outflow). DWR assessed more than 18 different Project alternatives (Alternatives 1A, 1B, 1C, 2A, 2B, 2C, 3, 4, 5, 6A, 6B, 6C, 7, 8, 9, 4A, 2D, and 5A) within the body of the

[28] The FEIR/EIS states that "operation of the future conveyance facility under a possible adaptive management range represented by Boundary 1 and Boundary 2 will be consistent with the impacts discussed for the range of alternatives considered in this document" (FEIR/EIS, p. 3-288) and "Boundaries 1 and 2 were presented to the State Water Board during the water rights petition process as a means to represent a potential range of operations that could occur as a result of the proposed Adaptive Management Program" (FEIR/EIS, p. 5E-1).

FEIR/EIS; Alternative 4 was also evaluated as Alternatives H1 through H4. DWR has stated that Boundary 1 and Boundary 2 are operational scenarios that fall outside the range of H1 to H4;[29] according to DWR, Boundary 1 impacts can be assessed by examining impacts from Alternatives 1A and 3, while Boundary 2 impacts can be assessed by examining impacts from Alternatives 4H3+ and 8.[30] Table 2 shows operational scenarios that were released by the DWR in various model files in support of the Project and reviewed by Exponent.[31] Although this list is not an exhaustive list of all files released by DWR, it points to the number and types of operational scenarios that were assessed and released by DWR over time.

[29] The FEIR/EIS states on p. 3-288 (Section 3.6.4.4) that "As shown in Appendix 5E, the operation of the future conveyance facility under a possible adaptive management range represented by Boundary 1 and Boundary 2 will be consistent with the impacts discussed for the range of alternatives considered in this document (see Appendix 5E, Section 5E.2, for additional information on these boundaries). Boundary 1 and Boundary 2 also encompass the full range of impacts found in the analysis prepared for H1 and H2(as well as H3 and H4)."

[30] The FEIR/EIS states that "[c]onsistent with the goals of this analysis, the nature and severity of the impacts generally fall within the range of impacts disclosed under Alternatives 1A and 3 for Boundary 1, Alternative 4H3, Alternative 4H3+, and Alternative 8 for Boundary 2" (FEIR/EIS, p. 5E-170).

[31] Model results for operational scenarios not listed in Table 2 were not made available by DWR.

Table 2. Exponent's record of model files released by the California Department of Water Resources in support of the California WaterFix Project

Accompanying Document	Model Files Acquired by Exponent
March 2013 Revised Administrative Draft BDCP	EBC1, EBC2, NAA (ELT, LLT), all Project alternatives, including Alternative 4 (H1, H2, H3, H4) at LLT and ELT
2013 Draft EIR/EIS	EBC1, NAA (ELT, LLT), all Project alternatives, including Alternative 4 (H1, H2, H3, H4) at LLT and ELT
2015 RDEIR/SDEIS	Updated 2013 Draft EIR/EIS model files and sensitivity analyses released. Alternative 4A (or H3+) introduced as the preferred alternative but not modeled. NAA evaluated as ELT and LLT.
Draft BA model files (released January 2016, before document release)	NAA (ELT), Preferred Alternative (Alternative 4A)
Final FEIR/EIS model files (released March 2016, before document release)	NAA (ELT), Alternative 2D, Alternative 4A, Alternative 5A
WaterFix Petition (May 2016)	B1, B2, NAA, H1, H2, H3, H4

B1 = Boundary 1
B2 = Boundary 2
EBC1 = existing baseline condition without the Fall X2 standard
EBC2 = existing baseline condition including the Fall X2 standard
ELT = early long term (i.e., 2025 with 15 cm of sea level rise)
LLT = later long term (i.e., 2060 with 45 cm of sea level rise)
NAA = no action alternative

DWR found that Alternatives 1A, 1B, 1C, 2A, 2B, 2C, 3, 4, 5, 6A, 6B, 6C, 7, 8, and 9 would have significant adverse impacts with respect to chloride concentrations at the Contra Costa Pumping Plant #1 (FEIR/EIS Figure 8-0a). Only Alternatives 4A, 2D, and 5A were found to have no significant impact/no adverse effects (FEIR/EIS Figure 8-0a). Thus, operation of the Project to Boundaries 1 and 2, which DWR states are represented by scenarios 1A, 3, and 8, would also have significant/adverse impacts.

Although Appendix 5E of the FEIR/EIS contains a highly generalized summary of modeling DWR performed to evaluate the water quality impacts (including salinity impacts) of Boundary 1 and Boundary 2, these impacts are not assessed in the same comprehensive manner as the preferred Alternative 4A and other alternatives (including Alternatives 1A, 1B, 1C, 2A, 2B, 2C, 3, 4, 5, 6A, 6B, 6C, 7, 8, 9, 4A, 2D, and 5A) (see FEIR/EIS Chapter 8). (In addition, the Boundary 1 and Boundary 2 scenarios are not presented in the Executive Summary for the

FEIR/EIS, including FEIR/EIS Table ES.4.2, which summarizes the findings for eighteen (18) individual scenarios, and which finds that chloride impacts for all scenarios are both "significant and unavoidable (any mitigation not sufficient to render impact less than significant)" and "adverse.") In contrast with the information presented in Chapter 8 of the FEIR/EIS, Appendix 5E presents water quality results for a more limited number of Delta locations, for fewer water quality constituents, and in much less detail. The model results of Appendix 5E were also not used to make the final impact assessment of the Project.[32]

An additional point of concern is that DWR evaluated conditions in the "late long term" (LLT) timeframe, which corresponds to the year 2060 and includes 45 cm of sea level rise, only in the Administrative Draft EIR, DEIR/EIS, and RDEIR/EIS. DWR did not evaluate the LLT timeframe in either the WaterFix Petition and testimony or the FEIR/EIS, despite the fact that DWR does not anticipate the project operations will begin prior to 2025, the date that corresponds to the "early long term" (ELT) timeframe. Thus, it is not possible to discern the impacts of the project during the full range of anticipated environmental and operating conditions from the information presented by DWR to the SWRCB as part of the WaterFix petition or from information in the FEIR/EIS.

In summary, DWR presented different information in the WaterFix Petition and testimony than in the FEIR/EIS, and at times that information appears to be inconsistent. Of particular concern to the City of Stockton's analysis of water quality impacts at its intake are the inconsistent treatment of "baseline" conditions (e.g., inclusion of Fall X2, comparison to the NAA or to a present-day existing condition), the time horizon of DWR's evaluation (ELT v. LLT), and the apparently inconsistent determinations of water quality impacts in the WaterFix Petition and testimony and in the FEIR/EIS. As a result of these inconsistencies and DWR's failure to analyze water quality at the City's intake (see Section 6), it is difficult to determine the impacts of the proposed WaterFix project on water quality at the City's intake.

[32] Appendix 5E comprises additional modeling requested by the State Water Board for the Boundary scenarios and an additional scenario, "Scenario 2." The impact calls made in Chapter 8 are specific to each Alternative presented in the main body of the text (i.e., 1A, 1B, 1C, 2A, 2B, 2C, 3, 4, 5, 6A, 6B, 6C, 7, 8, 9, 4A, 2D, and 5A), which does not include the Boundary scenarios.

8. The boundary scenarios and Alternative 4A show water quality impacts at Stockton's intake and these impacts are significant

8.1. Source water fingerprinting shows large shifts in source water at the City's intake during different operational scenarios

As described in Section 6, DWR has not evaluated the impacts of any of the Project alternatives (including Alternative 4A, the preferred alternative, or Alternatives H3, H4, Boundary 1, and Boundary 2) at the location of the City's intake. To assess impacts at the City's intake, Exponent used the DSM2 model together with DWR's model input files to evaluate the impact of these project alternatives on the City's water source and water quality (see Section 4 for methodology). Exponent's DSM2 modeling demonstrates that water quality under the project scenarios is expected to be markedly different from either existing conditions (EBC2) or the future no action alternative (NAA).

Modeling demonstrates that during dry water years and under existing conditions the volume of Sacramento River water at the City's intake varies from approximately 30 to 93 percent. However, this volume would fall to 20 to 90 percent under the Alternative 4A scenario, to 30 to 90 percent under the Boundary 1 scenario, and to 9 to 85 percent under the Boundary 2 scenario (Figure 9). The decrease is as much as 50 percent in January of dry years (under Boundary 2 scenario). For the most part, the higher quality Sacramento River water at the City's intake is replaced by lower quality (e.g., more saline) San Joaquin River water. The volume of Sacramento River water at the City's intake also decreases under Alternative 4A for all other water year types. The water source fingerprints under the various operational scenarios for all water year types is presented in Appendix D. As discussed in Section 5.1 above, DWR testified in the 2016 SWRCB water rights change petition hearings that Boundary 1 and Boundary 2 represent the range of potential Project operational outcomes that may result from implementation of the AMMP. Boundary 1 (characterized by a high volume of exported water) and Boundary 2 (characterized by high Delta outflow) represent a broad range of potential Project operations that is substantially different from any alternative evaluated in any of the

Project environmental documents (DEIR/EIS, RDEIR/EIS, FEIR/EIS)[33] and a broad range of potential impacts to the City's water supply that should have been evaluated fully within one of the draft environmental documents and circulated for public review and comment.

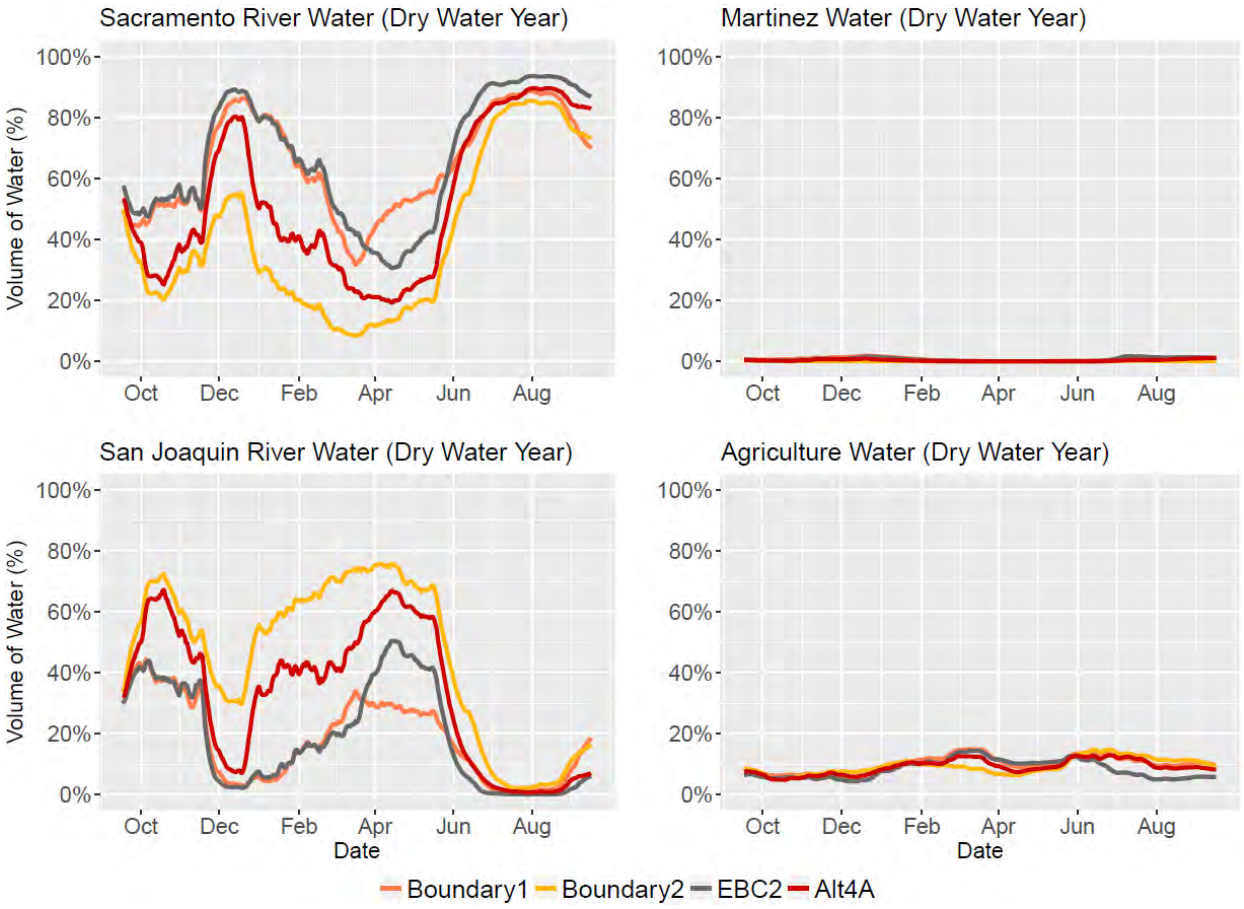

Figure 9. Source water fingerprint at Stockton's intake under the proposed California WaterFix Project scenarios during dry water year years (1981, 1985, 1987, and 1989)

[33] Model results show more water will be exported from the Delta under the Boundary 1 scenario than scenario Alternative 4A in all but critical water years. During wet and normal years, Boundary 1 results in 622 thousand acre-feet (TAF) and 638 TAF of additional exports, respectively. Note that Boundary 1 and Boundary 2 are presented in a highly generalized fashion in Appendix 5E of the FEIR/EIS, but water quality impacts were not evaluated for the City's intake, and the impacts of these two scenarios were not presented in detail or included in the summary impact tables in either the Executive Summary of the FEIR/EIS or in Chapter 8.

As shown in Figure 9 and Appendix D, DSM2 modeling performed using DWR's model input files shows that the amount of high quality Sacramento River water at the City's intake will decrease under most of the project operational scenarios, by as much as 50 percent. This trend is seen in all water year types (Appendix D). Under each water year type and operational scenario, the Sacramento River water is replaced by lower quality San Joaquin River water.

8.2. Scenarios Boundary 1, Boundary 2, and Alternative 4A result in higher salinity at the City's intake

Water quality impacts at the City's intake were evaluated for three scenarios (Alternative 4A, Boundary 1, and Boundary 2), as well as for the EBC2 and NAA conditions, using the DSM2 model as described in Section 4.[34] DSM2 results show that the average number of days that chloride will exceed the City's 110 mg/L threshold will increase, relative to existing conditions (EBC2), for all simulated scenarios in critical and dry years (Table 3); in critical and dry years, the Boundary 2 scenario is expected to have the greatest water quality impacts, with the number of days in excess of the 110 mg/L threshold increasing by 112% and 151%, respectively. In normal year types, the NAA and Boundary 1 scenarios show a significant increase in the number of days that exceed this threshold, while the Boundary 2 scenario shows water quality improvement (Table 3).

[34] DWR has asserted that complying with D-1641 water quality objectives will assure that water users in the Delta are not harmed. See, for example, DWR-53, p. 13, lines 18-20 ["A reduction in water quality that is within the objectives contained in D-1641 would not interfere with the ability of other legal users to put water to beneficial use"]. However, not all the proposed operations scenarios will be operated to meet D-1641 criteria. The Boundary 1 scenario, for example, "represents an operational scenario with most of the existing regulatory constraints… but does not include additional spring Delta outflow, additional OMR flows, existing I/E ratio, and the existing Fall X2 flow requirement imposed in the existing BiOp for Delta Smelt" (DWR-51, p. 13 lines 18-21). More importantly, the D-1641 water quality criteria are not evaluated at or near Stockton's intake, and Exponent's analysis shows significant water quality impacts at Stockton's intake that appear to be unrelated to D-1641 water quality objectives.

Table 3. Number of equivalent days per year that water at Stockton's intake *exceeds* 110 mg/L chloride under various modeled baseline scenarios according to water year type

Water Year Type	No. of days per year water at Stockton's intake exceeds chloride threshold of 110 mg/L					Percentage increase from EBC2 to B1	Percentage increase from EBC2 to B2	Percentage increase from EBC2 to Alt4A
	EBC2	NAA	B1	B2	Alt 4A			
Critical	35	50	47	75	53	35%	112%	52%
Dry	31	36	46	77	58	49%	151%	87%
Normal	36	44	57	18	32	60%	-49%	-11%
Wet	11	11	8	4	2	-28%	-61%	-79%

Table 4 shows the number of days per year that water at the City's intake exceeds 110 mg/L chloride for every year during the 16-year model period (1976 to 1991). As shown in Table 4, all operational scenarios cause daily average chloride concentration at the City's intake to exceed the 110 mg/L threshold more often than EBC2 for the modeled period as a whole, with increases relative to EBC2 from 33 percent (Alternative 4A scenario) to 67 percent (Boundary 2 scenario).

Table 4. Number of equivalent days per year that water at Stockton's intake *exceeds* 110 mg/L chloride under various modeled baseline scenarios for each water year between 1976 and 1991

Water year	Water Year Type	Total Days	No. of days per year water at Stockton's intake exceeds chloride threshold of 110 mg/L					Percentage increase from EBC2 to B1	Percentage increase from EBC2 to B2	Percentage increase from EBC2 to Alt4A
			EBC2	NAA	B1	B2	Alt 4A			
1976	Critical	366	25	0	11	87	25	-55%	248%	-1%
1977	Critical	365	9	76	56	71	57	513%	685%	526%
1978	Normal	365	45	82	105	24	72	131%	-46%	60%
1979	Normal	365	12	29	33	31	18	171%	150%	45%
1980	Normal	366	50	23	34	1	6	-32%	-98%	-88%
1981	Dry	365	12	14	5	82	38	-58%	602%	223%
1982	Wet	365	20	23	30	4	4	49%	-82%	-81%
1983	Wet	365	0	0	0	0	0	NA	NA	NA
1984	Wet	366	0	0	0	0	0	NA	NA	NA
1985	Dry	365	7	1	7	76	42	-8%	921%	469%
1986	Wet	365	26	20	4	15	7	-86%	-42%	-74%
1987	Dry	365	11	6	63	81	44	465%	627%	291%
1988	Critical	366	15	10	18	88	22	19%	487%	44%
1989	Dry	365	93	125	109	71	107	17%	-24%	15%
1990	Critical	365	54	24	11	57	37	-79%	5%	-32%
1991	Critical	365	75	139	143	72	129	92%	-3%	72%
Summary	(all)		455	572	627	759	606	38%	67%	33%

During dry water years, higher chloride concentrations during Alt 4A operation (relative to existing condition EBC2) will occur at the intake from January to May, while during normal and wet water years, higher chloride concentrations will occur during June and December (Figure 9 and Appendix E). During critical water years, higher chloride concentrations will occur from January into June, and again in September. The DSM2-simulated chloride concentrations at the City's intake under the various operational scenarios are provided in Appendix E for all water year types and during every year in the modeled period (1976 to 1991).

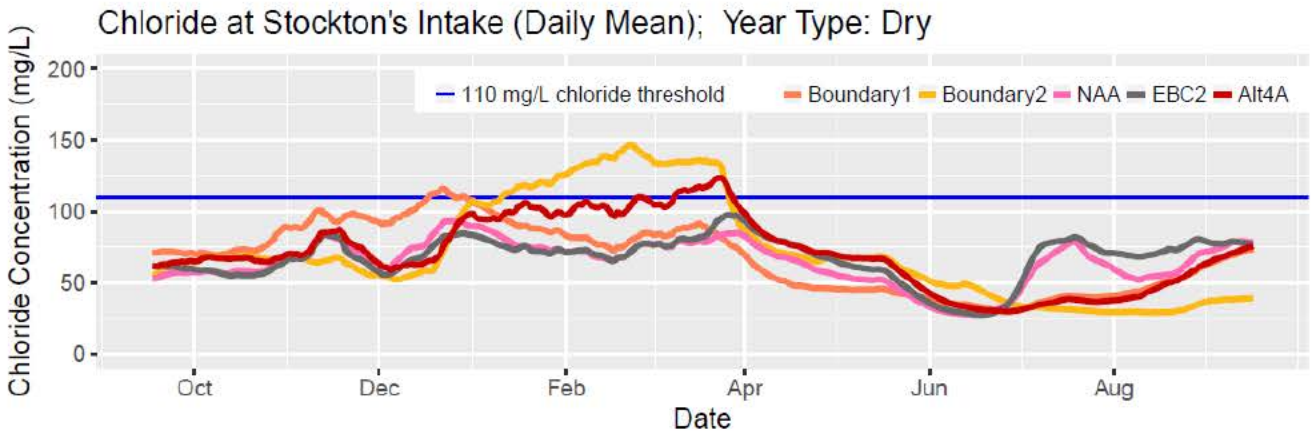

Figure 10 Concentration of chloride at Stockton's intake under various operational scenarios during dry water years (1981, 1985, 1987, and 1989). The 110 mg/L chloride threshold is also shown as a blue horizontal line.

Additionally, the number of days per year the chloride concentration at the City's intake exceeds the 110 mg/L usability threshold would also be greater under the Boundary 1 scenario than existing condition EBC2 during normal (57 and 36 for Boundary 1 and EBC2), dry (46 and 31), and critical years (47 and 35) (Table 3). The number of days per year the chloride threshold is exceeded would be greater under the B2 scenario than EBC2 during dry (77 and 31 for Boundary 2 and EBC2) and critical years (75 and 31) (Table 3). Not only do the Boundary 1 and Boundary 2 operational scenarios generate water quality and source water changes that are significantly different from each other, they also generate impacts that are significantly different from the preferred Alternative 4A.

Figure 10 shows that during a dry water year under Boundary 2 operations, the 110 mg/L threshold would most frequently be exceeded from January to April, and chloride concentrations up to 150 mg/L are simulated to occur. Compared to Alternative 4A, operating to the Boundary 1 scenario during a dry water year would cause higher chloride concentrations at the City's intake during the months of September through December; and operating to the Boundary 2 scenario would cause chloride concentrations to increase during the months of January through March (Figure 10). Compared to existing conditions (EBC2), operating to Alternative 4A during a dry water year causes chloride concentrations at the City's intake to increase during the

months of January through March, May, October, and November (Figure 10). Thus, there are sizable impacts to the City's water quality during the operations of Project scenarios Boundary 1, Boundary 2, and Alternative 4A. These impacts have not been properly evaluated or disclosed in WaterFix Petition or testimony or in the FEIR/EIS.

8.3. Longer water residence times will occur in the Delta under all operational scenarios relative to the existing condition

Exponent used information from DWR's model input files to compute the average monthly residence time of inflows to the Delta. As described in Section 4.5, residence time was calculated as the volume of water within the Delta divided by the monthly average inflow rate of major inflows. DSM2 modeling shows that the residence time of water entering the Delta during a dry water year will increase for scenarios Boundary 1, Boundary 2, and Alternative 4A relative to the existing condition EBC2 and NAA (Table 5). Although DWR determined average residence times for Delta flows using the DSM2 particle tracking model (Table 8-60a in the FEIR/FEIS, p. 8-198), the residence times calculated by DWR are long-term seasonal averages (i.e., summer, fall, winter, spring) for the entire 16-year model period. DWR's residence times did not consider hydrologic variations observed in different water year types.

Exponent calculated monthly residence times in order to assess the impacts of the proposed WaterFix project on Delta flows and residence times as well as the potential effects on *Microcystis* blooms. Table 5 presents calculated average monthly residence times for dry years for Alternative 4A, the Boundary 1 and Boundary 2 scenarios, and existing conditions (EBC2). As shown in Table 5, the greatest change in residence times from the existing baseline condition (EBC2) will occur during the months of July to December, and that residence times for Alternative 4A and the Boundary 1 and 2 scenarios will increase markedly with respect to existing conditions (EBC2). For example, residence times will be 37% longer, on average, during the month of August in dry years for the Boundary 2 scenario relative to existing conditions. Table 5 also shows that residence times will be similar for the no action alternative (NAA) and the existing condition (EBC2), demonstrating that the increase in residence times is

caused primarily by the proposed WaterFix project and not by sea level rise or climate change. Residence times for other water year types are presented in Appendix F and show similar trends.

Our detailed analysis of residence times indicates that the proposed WaterFix project will result in longer Delta residence times in all water year types. Longer residence times in the Delta can lead to increased water temperatures that are conducive to growth of *Microcystis* and other harmful microorganisms, as discussed in Section 8.4 below.

Table 5 Residence times of inflows to the Delta under a dry water year

	Monthly average residence time (days)					Percent increase from EBC2 to B1	Percent increase from EBC2 to B2	Percent increase from EBC2 to Alt4A
Month	EBC2	NAA	B1	B2	Alt 4A			
October	28	26.6	35.8	34.4	31.6	28%	23%	13%
November	32.3	32.3	36.5	40.2	38.6	13%	24%	20%
December	27.6	28.3	30.8	32.3	31.3	12%	17%	13%
January	31	31.7	32.9	35.9	34.2	6%	16%	10%
February	27.3	26.9	28.9	29.3	30.7	6%	7%	12%
March	24.2	24	26.4	26.1	27	9%	8%	12%
April	22.3	22.8	24.9	24.9	24.9	12%	12%	12%
May	38.2	39.3	37.1	40	39.2	-3%	5%	3%
June	36.4	36.9	37.9	40.1	37.8	4%	10%	4%
July	27.7	28.7	34.4	35.6	34.2	24%	29%	23%
August	23.2	26.7	31.1	31.8	30.9	34%	37%	33%
September	27.8	31.2	36.3	35.1	34.3	31%	26%	23%

8.4. Increased *Microcystis* growth may result from the WaterFix project

Increases in *Microcystis* blooms are a concern in the Delta, as these cyanobacteria are known to produce toxic chemicals called microcystins, which are a risk to humans, livestock and wildlife. Microcystins can be present outside the cells of the cyanobacteria, and may not be completely removed via standard water treatment or boiling.[35] To evaluate the possibility of increased risk

[35] U.S. EPA (United States Environmental Protection Agency). 2015. Health Effects Support Document for the Cyanobacterial Toxin Microcystins. EPA 820R15102, Washington, DC; June, 2015. Available from: http://water.epa.gov/drink/standards/hascience.cfm

from this organism, the FEIR/EIS attempted to categorize the proposed alternatives (i.e., operational scenarios) on a relative scale.

Overall, DWR's description of the factors known to control *Microcystis* growth in the Delta identified in the FEIR/EIS seems consistent with the state of the science. An increase in temperature and a decrease in flow rates were identified by DWR as the two most important influences on *Microcystis* growth in the Delta, with smaller potential impacts from changes in turbidity and nutrient concentrations (FEIR/EIS at p. 8-196 to 8-197). However, the FEIR/EIS provided only a qualitative analysis of the potential impact of each remedy on the likelihood that an increase in *Microcystis* blooms may occur. No detail is given on the criteria used to generate these results, which include a numerical rating proportional to the extent of the predicted impact, and which are presented on a whole-Delta basis (Figure 8.0-b of the FEIR/EIS). The use of a whole-Delta approach is inappropriate, as it does not consider area-specific changes as they relate to beneficial uses. On a whole-Delta basis, it would be possible to maintain a constant frequency of *Microcystis* blooms, while increasing ecological and human health risk, simply by altering the likely locations or timing of the blooms such that blooms are likely to be present at or near a drinking water intake for a longer period of time or more frequently.

Lower streamflows that result in higher residence times correlate with an increased likelihood of *Mycrocystis* blooms in the Delta,[36] and the FEIR/EIS should consider not just average changes, but changes in specific locations, which may drastically alter residence times. Likewise, because studies have shown a sharp increase in the likelihood of *Microcystis* blooms in the Delta based on only moderate increases in temperature (from a likelihood of 10 percent at 20 ºC to 50 percent at 25 ºC[37]), the effect of temperature at locations throughout the Delta should be addressed explicitly in the FEIR/EIS. It is important to examine both the relative increases and decreases in temperature at specific locations, but also the absolute temperature predictions in relation to known thresholds (e.g., *Microcystis* blooms can occur when temperatures are greater

[36] Lehman, P. W., K. Marr, G. L. Boyer, S. Acuna, and S. J. Teh. 2013. Long-Term Trends and Causal Factors Associated with *Microcystis* Abundance and Toxicity in San Francisco Estuary and Implications for Climate Change Impacts. *Hydrobiologia* 718: 141–158.

[37] Mioni, C. 2012. What Controls Harmful Algal Blooms and Toxicity in the Sacramento-San Joaquin Delta? Research Summaries, California Sea Grant College Program, U.C. San Diego. Available: http://escholarship.org/uc/item/3qf633v9.

than 19 ºC[38]). Increased residence time in the Delta may increase the likelihood of a *Microcystis* bloom by several mechanisms.[39] The most direct effect is to decrease the loss rate of *Microcystis* from the area by flushing. As more biomass remains, there is more opportunity for *Microcystis* growth and toxin production. Indirect effects of an increase in residence time include lower mixing, which allows *Microcystis* cells to remain in the upper meter of water column where irradiance is higher, leading to higher growth. Additionally, water temperatures may increase as a result of increased residence times. This could both increase the growth rates of *Microcystis* and increase the length of time that the water temperature remains above the 19 ºC threshold, effectively extending the blooming season for the cyanobacteria.

All of the proposed Alternatives evaluated in the FEIR/EIS result in an increase in predicted summer mean residence times for all subregions of the Delta, with the exception of Suisun Marsh (FEIR/EIS at p. 8-198, Table 8-60a). The FEIR/EIS specifically notes that under proposed Alternative 4A, "residence times may increase in parts of the southern and central Delta."(FEIR/EIS, p. 8-980). However, Alternative 4A is not ranked as more likely to contribute to *Microcystis* blooms than the NAA (Figure 8.0-b of the FEIR/EIS). The reasoning behind this conclusion is not presented.

As shown in Table 5 and Appendix F, residence times in the Delta will increase markedly for Alternative 4A and the Boundary 1 and Boundary 2 scenarios relative to both the EBC2 and NAA. These increases in residence time are greatest during the months of July through October, when water temperatures within the Delta are highest. For this reason, it is likely that the WaterFix Project will cause an increase in *Microcystis* growth within the Delta.

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[38] Lehman, P. W., K. Marr, G. L. Boyer, S. Acuna, and S. J. Teh. 2013. Long-Term Trends and Causal Factors Associated with *Microcystis* Abundance and Toxicity in San Francisco Estuary and Implications for Climate Change Impacts. *Hydrobiologia* 718: 141–158.

[39] Berg M and Sutula M. 2015. Factors affecting the growth of cyanobacteria with special emphasis on the Sacramento-San Joaquin Delta. Southern California Coastal Water Research Project Technical Report 869 August 2015.

Appendix A

Curriculum *vitae* of Susan Paulsen

Exponent®

Susan C. Paulsen, Ph.D., P.E.

Principal Scientist & Practice Director

Professional Profile

Dr. Susan Paulsen is a Principal Scientist and the Director of Exponent's Environmental and Earth Sciences practice. Dr. Paulsen has 24 years of experience with projects involving hydrodynamics, aquatic chemistry, and the environmental fate of a range of constituents. She has provided expert testimony on matters involving the Clean Water Act and state water quality regulations, and she also provides scientific and strategic consultation on matters involving Superfund (CERCLA) and Natural Resources Damages (NRD). She has expertise designing and implementing field and modeling studies of dilution and analyzing the fate and transport of organic and inorganic pollutants, including DDT, PCBs, PAHs, copper, lead, and selenium, in surface and groundwater and in sediments.

Dr. Paulsen has designed and implemented field studies in reservoir, river, estuarine, and ocean environments using dye and elemental tracers to evaluate the impact of pollutant releases and treated wastewater, thermal, and agricultural discharges on receiving waters and drinking-water intakes. Dr. Paulsen has designed and managed modeling studies to evaluate transport and mixing, including the siting and design of diffusers, and has evaluated water quality impacts of stormwater runoff, irrigation, wastewater and industrial process water treatment facilities, and desalination brines. Dr. Paulsen has extensive knowledge of California water supply issues, including expertise in California's Bay-Delta estuary, the development of alternative water supplies, and integration of groundwater basins into supply and storage projects.

Dr. Paulsen has designed studies using one-dimensional hydrodynamic models (including DSM2 and DYRESM), three-dimensional CFD modeling, longitudinal dispersion modeling, and Monte Carlo analysis. Dr. Paulsen has participated in multi-disciplinary studies of the fate and transport of organic and inorganic pollutants, including DDT, PCBs, PAHs, copper, lead, selenium, and indicator bacteria in surface waters, groundwaters, and/or sediments. She has worked on matters involving both CERCLA and NRDA, including several involving the fate and transport of legacy pollutants, and she has evaluated the impacts of oil-field operations on drinking-water aquifers.

Dr. Paulsen has broad expertise with water quality regulation through the Clean Water Act and state regulations in California, Washington, Hawaii, and other states, and has worked on temperature compliance models, NPDES permitting, permit compliance and appeals, third-party citizens' suits, and TMDL development. She has evaluated the importance of background and natural sources on stormwater and receiving-water quality and the development of numeric limits for storm flows and process-water discharges. Dr. Paulsen is the author of multiple reports describing the history and development of water quality regulations and has provided testimony on regulatory issues, water quality, and water rights.

Academic Credentials and Professional Honors

Ph.D., Environmental Engineering Science, California Institute of Technology, 1997
M.S., Civil Engineering, California Institute of Technology, 1993
B.S., Civil Engineering, Stanford University (with honors), 1991

Licenses and Certifications

Registered Professional Civil Engineer, California, #66554

Languages

Italian (Conversational)
German (Conversational)

Selected Publications and Presentations

Byard JL, Paulsen SC, Tjeerdema RS, Chiavelli D. DDT, Chlordane, Toxaphene and PCB Residues in Newport Bay and Watershed: Assessment of Hazard to Wildlife and Human Health. Reviews of Environmental Contamination and Toxicology 2015; 235.

California Council for Environmental and Economic Balance (CCEEB); authored by Paulsen SC. A Clear Path to Cleaner Water: Implementing the vision of the State Water Board for improving performance and outcomes at the State Water Boards. CCEEB: San Francisco, CA. 2013. Available at www.cceeb.org.

South Orange Coastal Ocean Desalination (SOCOD) Project; authored by Expert Panel Member Paulsen SC. Expert Panel Report: Offshore Hydrogeology/Water Quality Investigation Scoping, Utilization of Slant Beach Intake Wells for Feedwater Supply. Municipal Water District of Orange County (MWDOC): Fountain Valley, CA. 2012. Available at http://www.mwdoc.com/filesgallery/FINAL_Expert_Panel_Rept_10_9_2012.pdf.

Paulsen SC, Goteti G, Kelly BK, Yoon VK. Automated flow-weighted composite sampling of stormwater runoff in Ventura County, CA. Proceedings, Water Environment Federation 2011.12 (2011): 4186-4203. Also published as automated flow-weighted composite sampling of stormwater runoff. Water Environment Laboratory Solutions 2012; 19(2):1–6.

Paulsen SC, List EJ, Kavanagh KB, Mead AM, Seyfried R, Nebozuk S. Dynamic modeling and field verification studies to determine water quality and effluent limits downstream of a POTW discharge to the Sacramento River, California. Proceedings, Water Environment Federation 2007; 12:5695–5721.

Paulsen SC, List EJ. Potential background constituent levels in storm water at Boeing's Santa Susana Field Laboratory. Report to Expert Panel convened by The Boeing Company and Regional Water Quality Control Board, Los Angeles Region, 2007. Available at

http://www.boeing.com/assets/pdf/aboutus/environment/santa_susana/water_quality/tech_reports/2007_background/2007_background_report.pdf.

Paulsen SC, List EJ, Santschi PH. Modeling variability in 210Pb and sediment fluxes near the Whites Point Outfalls, Palos Verdes Shelf, California. Environmental Science & Technology 1999; 33:3077–3085.

Paulsen SC, List EJ, Santschi PH. Comment on "In situ measurements of chlorinated hydrocarbons off the Palos Verd es Peninsula, California." Environmental Science & Technology 1999; 33:3927–3928.

Paulsen SC, List EJ. A study of transport and mixing in natural waters using ICP-MS: Water-particle interactions. Water, Air, and Soil Pollution 1997; 99:149–156.

Paulsen SC, List EJ. Tracing discharges in ocean environments using a rare earth tracer. Presented at the 27th IAHR Congress, San Francisco, CA, August 1997.

Prior Experience

- Various positions including President, Flow Science Incorporated, Pasadena, California, 1997–2014
- Consultant to Flow Science Incorporated, Pasadena, California, 1994–1997
- Staff Engineer, Dames & Moore, Civil Design Group, San Francisco, California, 1990-1992
- Graduate Research and Teaching Assistant, Hydrologic Transport Processes and Fluid Mechanics, California Institute of Technology, Pasadena, California, 1993–1997
- Research Engineer, Fraunhofer Institute for Atmospheric Environmental Research, Garmisch-Partenkirchen, Germany (West), 1989
- Instructor, Technical Communications Program (joint Business School/School of Engineering program), Stanford University, Stanford, CA, 1989–1990

Professional Affiliations

- American Society of Civil Engineers—ASCE
- Member, National Ground Water Association

Depositions (last 4 years)

Robert Bruncati and Maureen Bruncati v. Billy Wayne Andrews, Jr., et al., Case No. CIVDS1309044, in the Superior Court of the State of California, County of San Bernardino, San Bernardino District. August 24, 2015, and September 8, 2015.

City of Cerritos, et al., v. Water Replenishment District of Southern California, Case No. BS128136, in the Superior Court of the State of California, County of Los Angeles. November 24, 2014.

The Boeing Company et al. v. State of Washington, Department of Ecology, Appeal of the 2010 Industrial Stormwater General Permit, Pollution Control Hearings Board, State of Washington. Case No. 09-140. 2011.

Puget Soundkeeper Alliance v. BNSF Railway Co., Case No. C09-1087-JCC, in the United States District Court, Western District of Washington at Seattle. 2011.

Trials and Hearings (last 4 years)

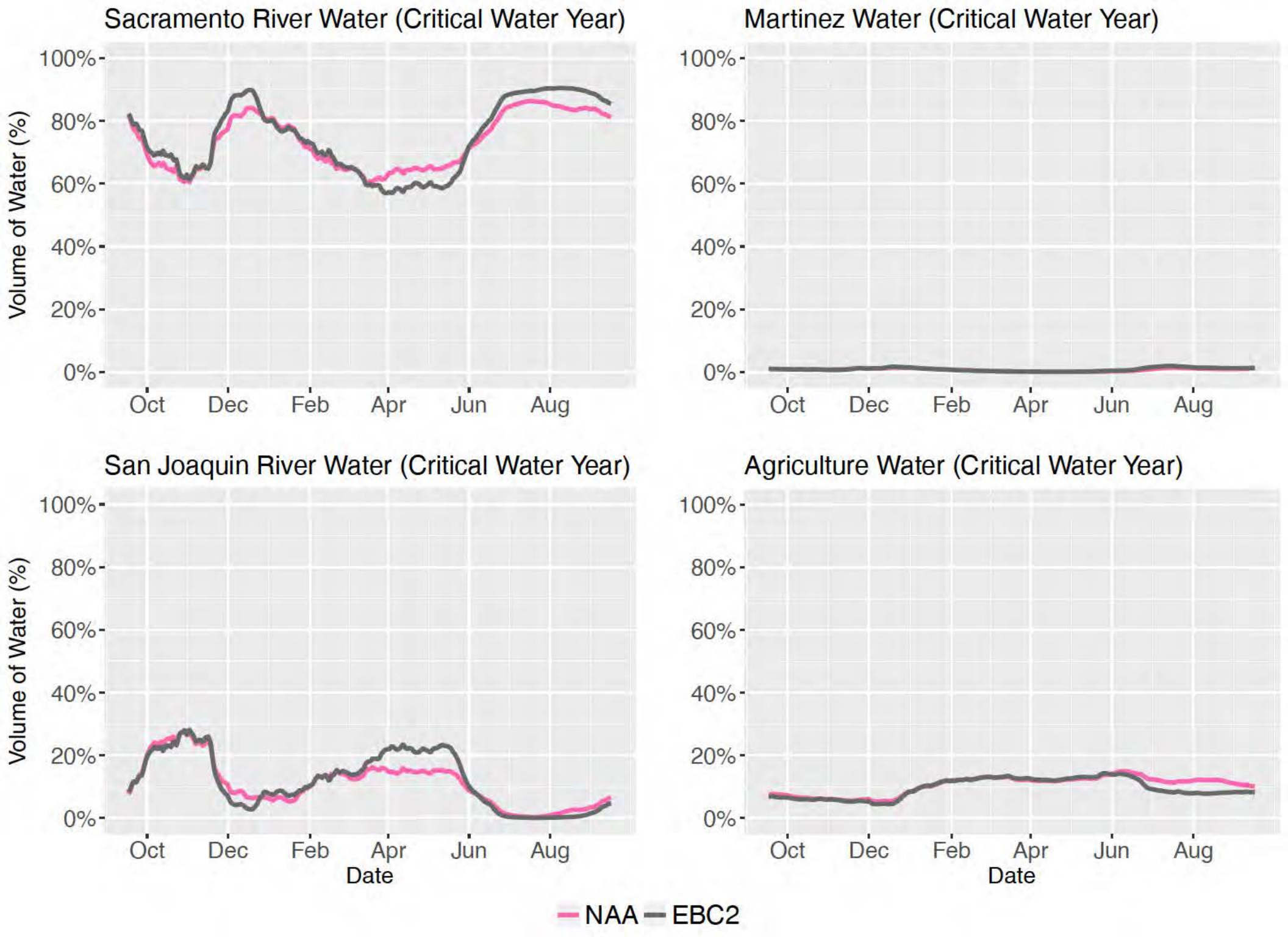
Robert Bruncati and Maureen Bruncati v. Billy Wayne Andrews, Jr., et al., Case No. CIVDS1309044, in the Superior Court of the State of California, County of San Bernardino, San Bernardino District. 2015.

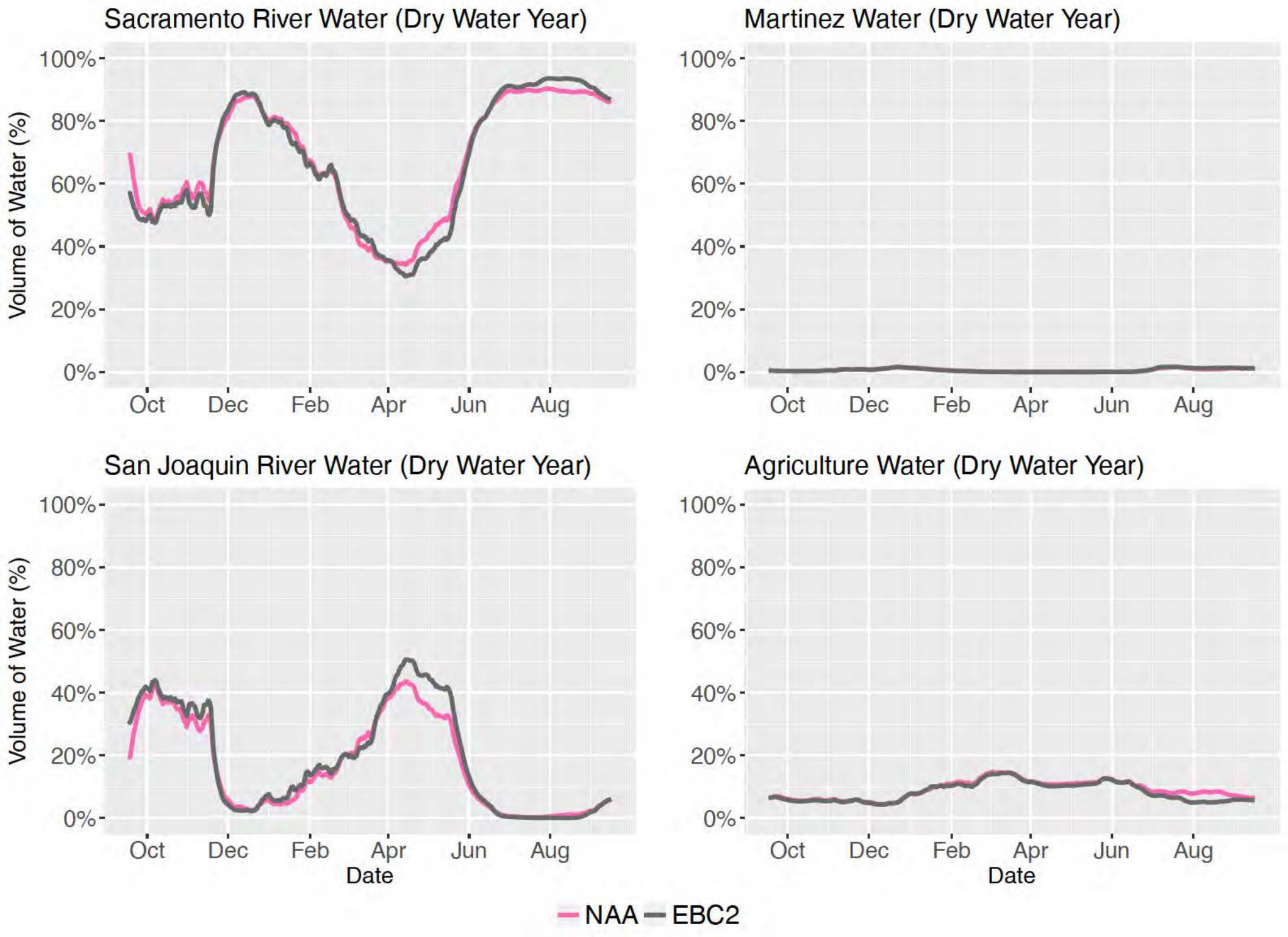
The Boeing Company et al. v. State of Washington, Department of Ecology, Appeal of the 2010 Industrial Stormwater General Permit, Pollution Control Hearings Board, State of Washington. Case No. 09-140. 2011.

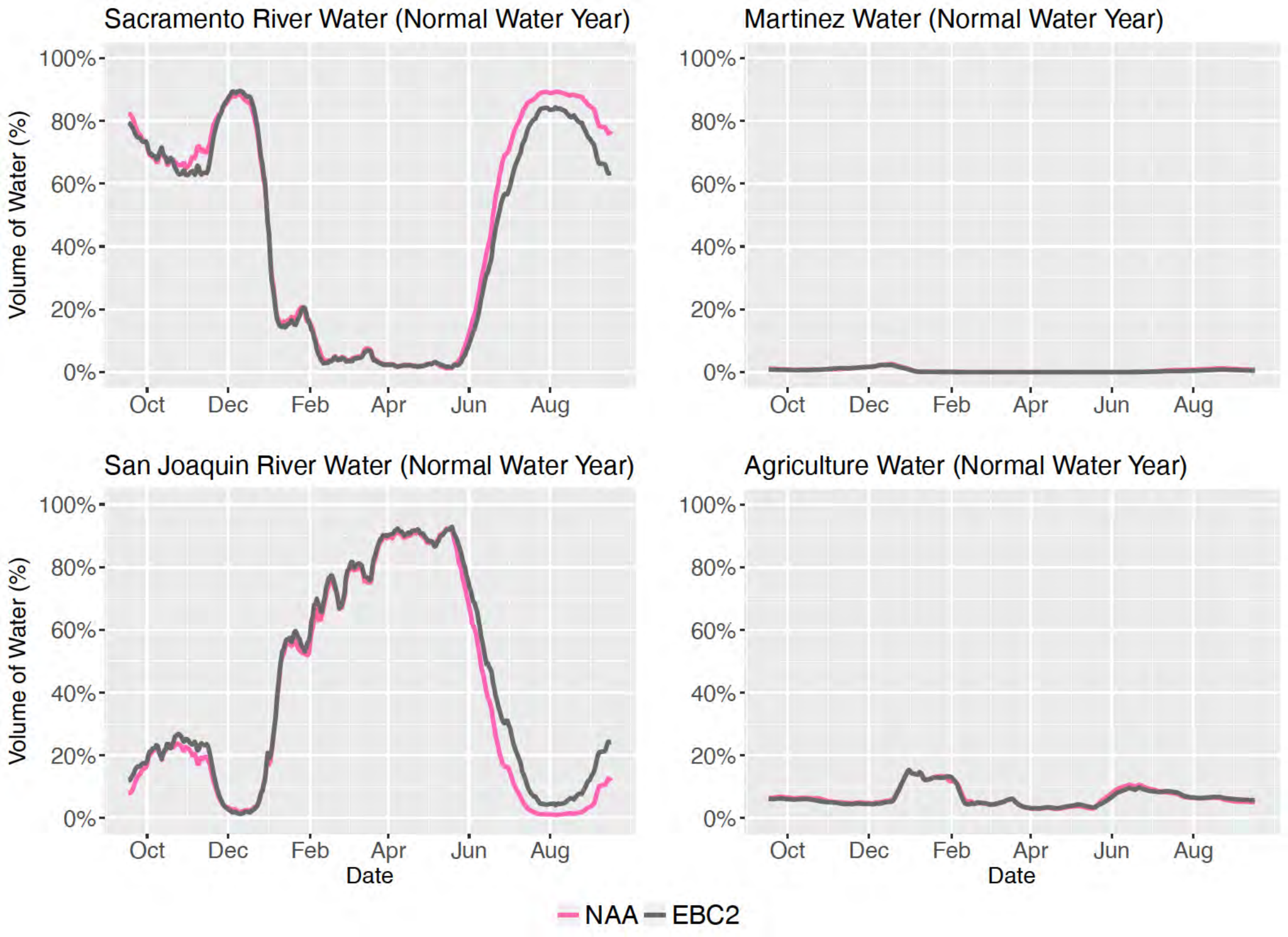
Appendix B

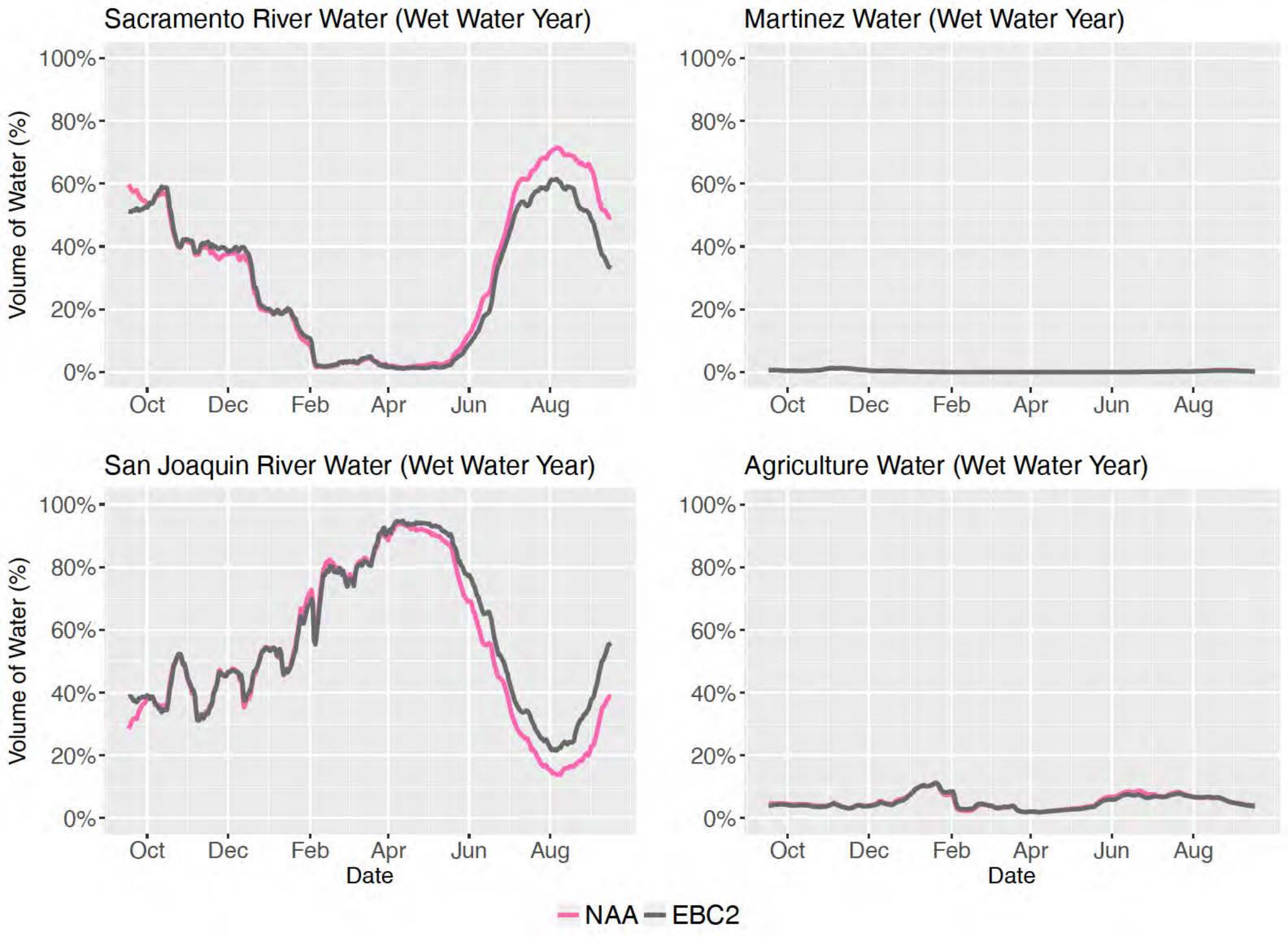
Water source fingerprints under baseline conditions EBC2 and NAA

Source-water fingerprints at Stockton's Intake

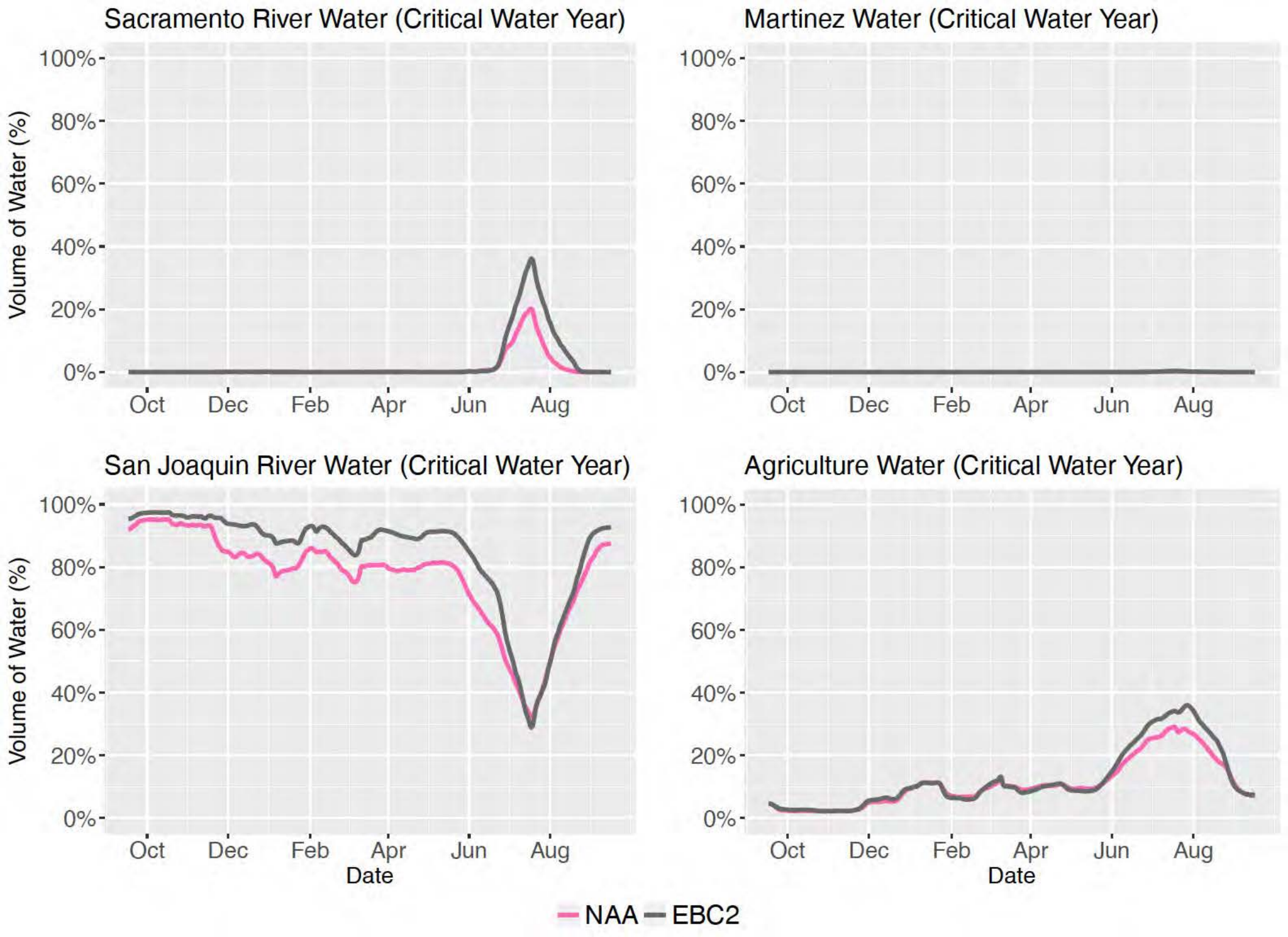

Sacramento River Water (Critical Water Year)
Martinez Water (Critical Water Year)
San Joaquin River Water (Critical Water Year)
Agriculture Water (Critical Water Year)
Volume of Water (%)
100%
80%
60%
40%
20%
0%
Oct
Dec
Feb
Apr
Jun
Aug
Date
NAA
EBC2

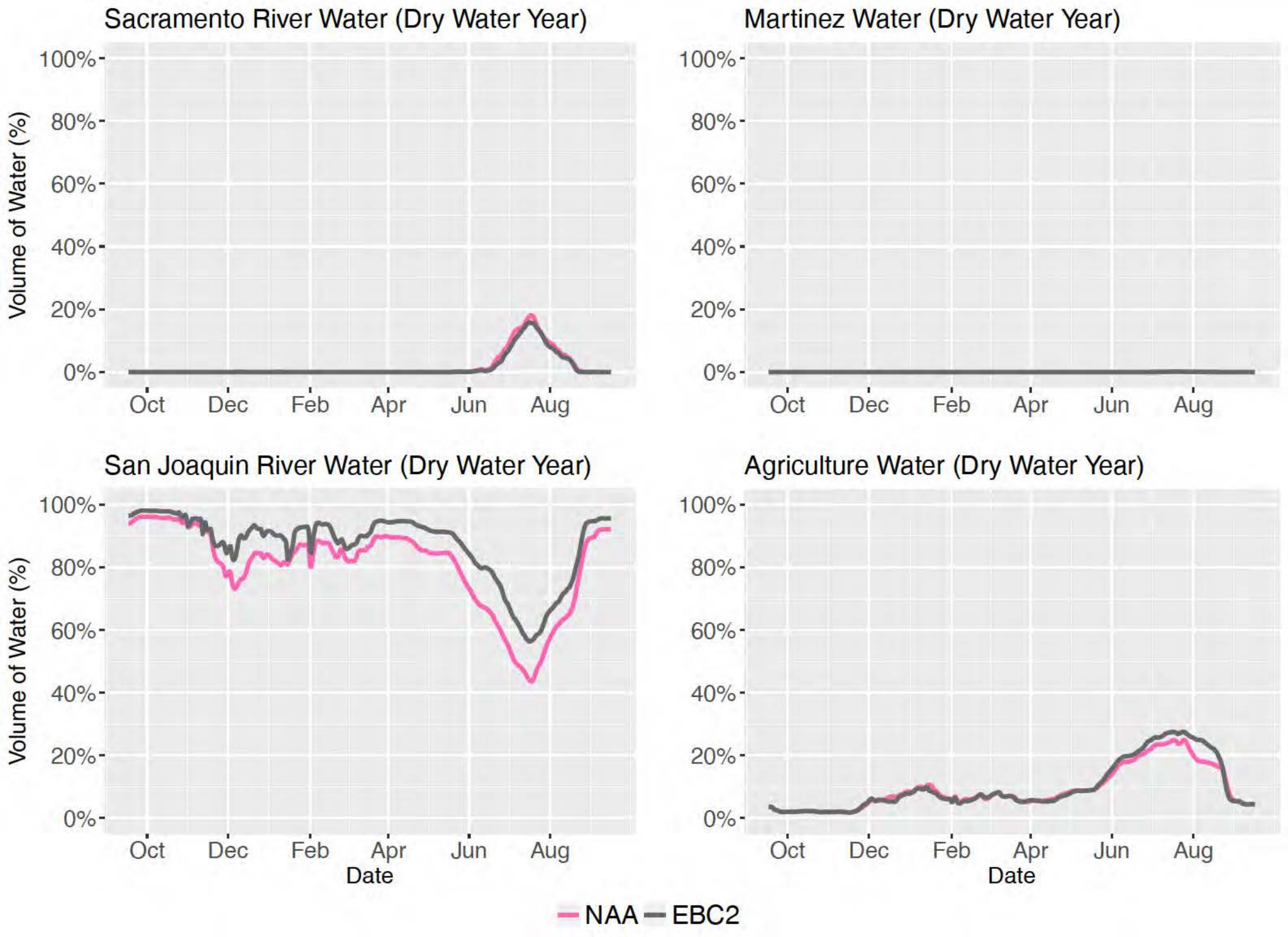

Sacramento River Water (Dry Water Year)
Martinez Water (Dry Water Year)
San Joaquin River Water (Dry Water Year)
Agriculture Water (Dry Water Year)
Volume of Water (%)
100%
80%
60%
40%
20%
0%
Oct
Dec
Feb
Apr
Jun
Aug
Date
NAA
EBC2

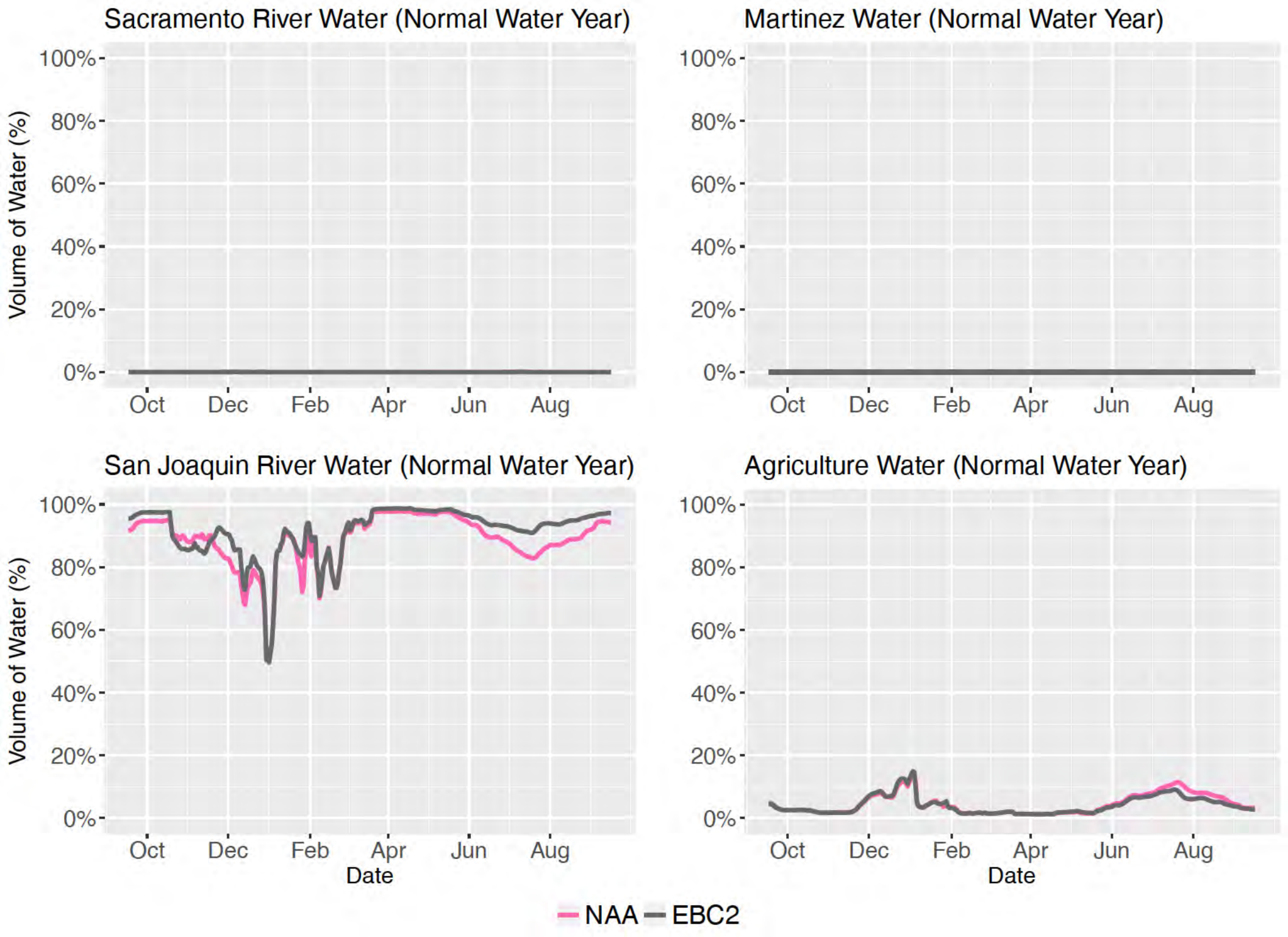

Sacramento River Water (Normal Water Year)
Martinez Water (Normal Water Year)
San Joaquin River Water (Normal Water Year)
Agriculture Water (Normal Water Year)
Volume of Water (%)
100%
80%
60%
40%
20%
0%
Oct
Dec
Feb
Apr
Jun
Aug
Date
NAA
EBC2

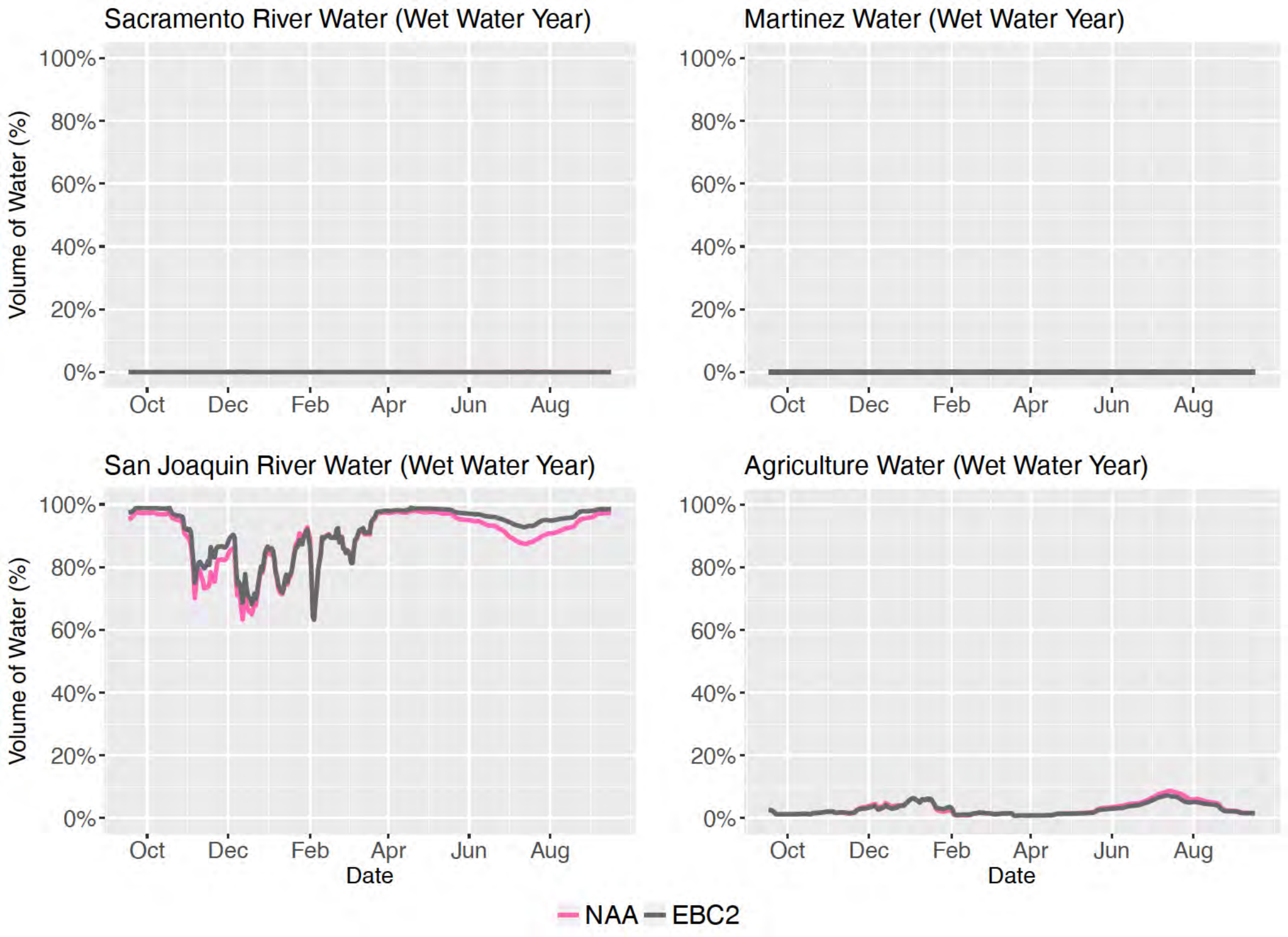

Sacramento River Water (Wet Water Year)
Martinez Water (Wet Water Year)
San Joaquin River Water (Wet Water Year)
Agriculture Water (Wet Water Year)
Volume of Water (%)
100%
80%
60%
40%
20%
0%
Oct
Dec
Feb
Apr
Jun
Aug
Date
NAA
EBC2

Source-water fingerprints at Buckley Cove


Sacramento River Water (Critical Water Year)
Martinez Water (Critical Water Year)
San Joaquin River Water (Critical Water Year)
Agriculture Water (Critical Water Year)
Volume of Water (%)
100%
80%
60%
40%
20%
0%
Oct
Dec
Feb
Apr
Jun
Aug
Date
NAA
EBC2

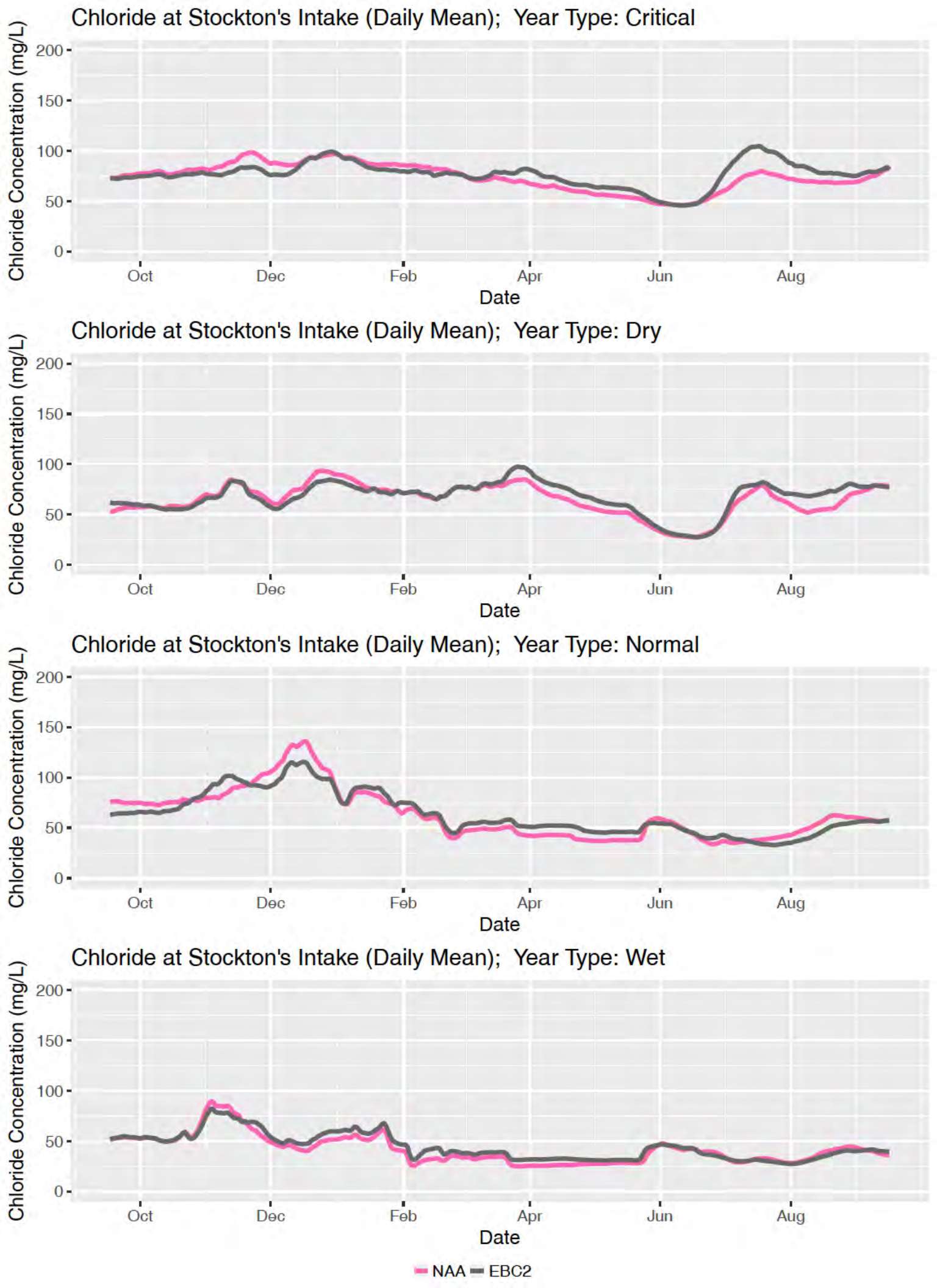

Sacramento River Water (Dry Water Year)
Martinez Water (Dry Water Year)
San Joaquin River Water (Dry Water Year)
Agriculture Water (Dry Water Year)
Volume of Water (%)
100%
80%
60%
40%
20%
0%
Oct
Dec
Feb
Apr
Jun
Aug
Date
NAA
EBC2

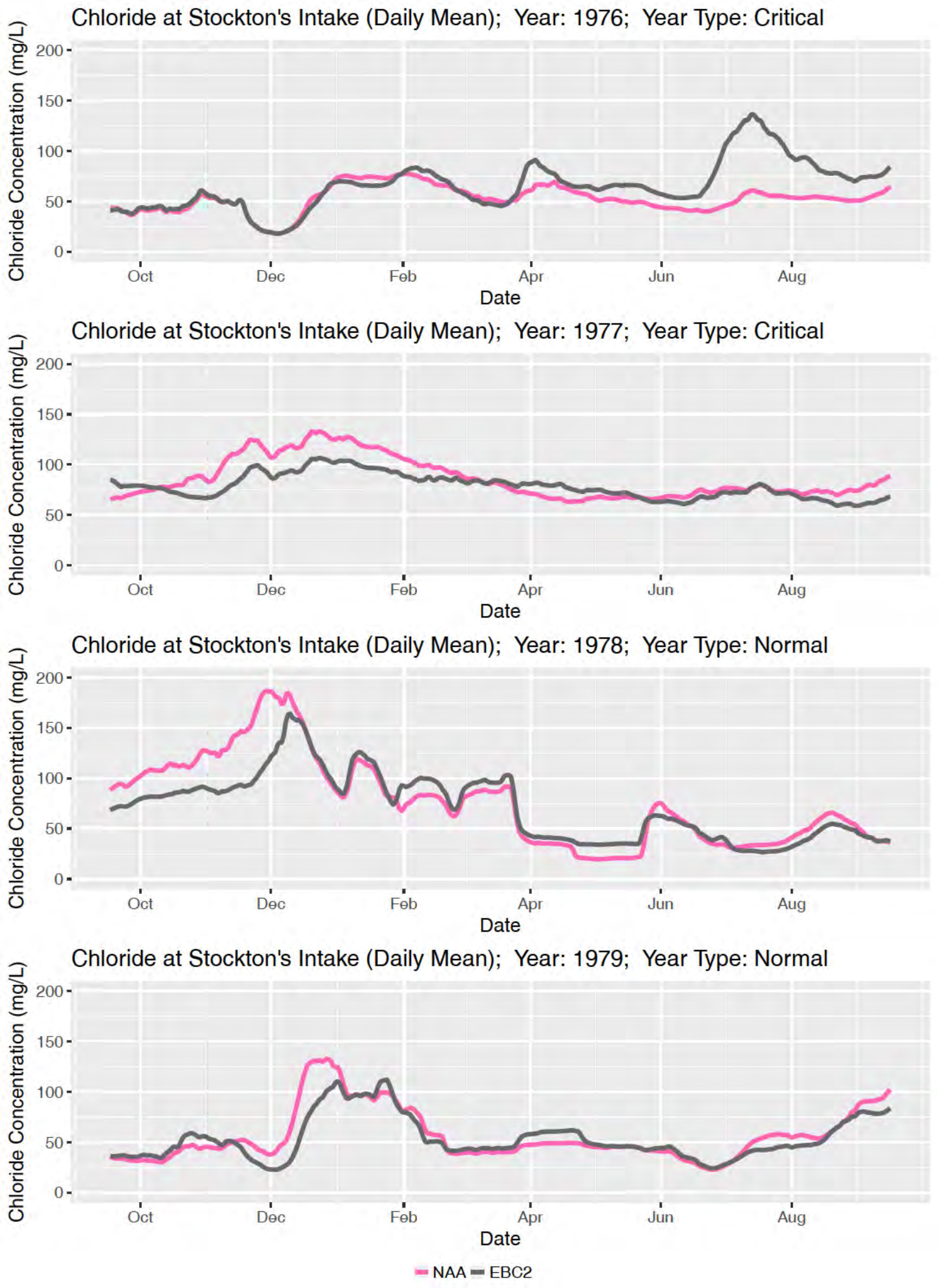

Sacramento River Water (Normal Water Year)
Martinez Water (Normal Water Year)
San Joaquin River Water (Normal Water Year)
Agriculture Water (Normal Water Year)
Volume of Water (%)
100%
80%
60%
40%
20%
0%
Oct
Dec
Feb
Apr
Jun
Aug
Date
NAA
EBC2

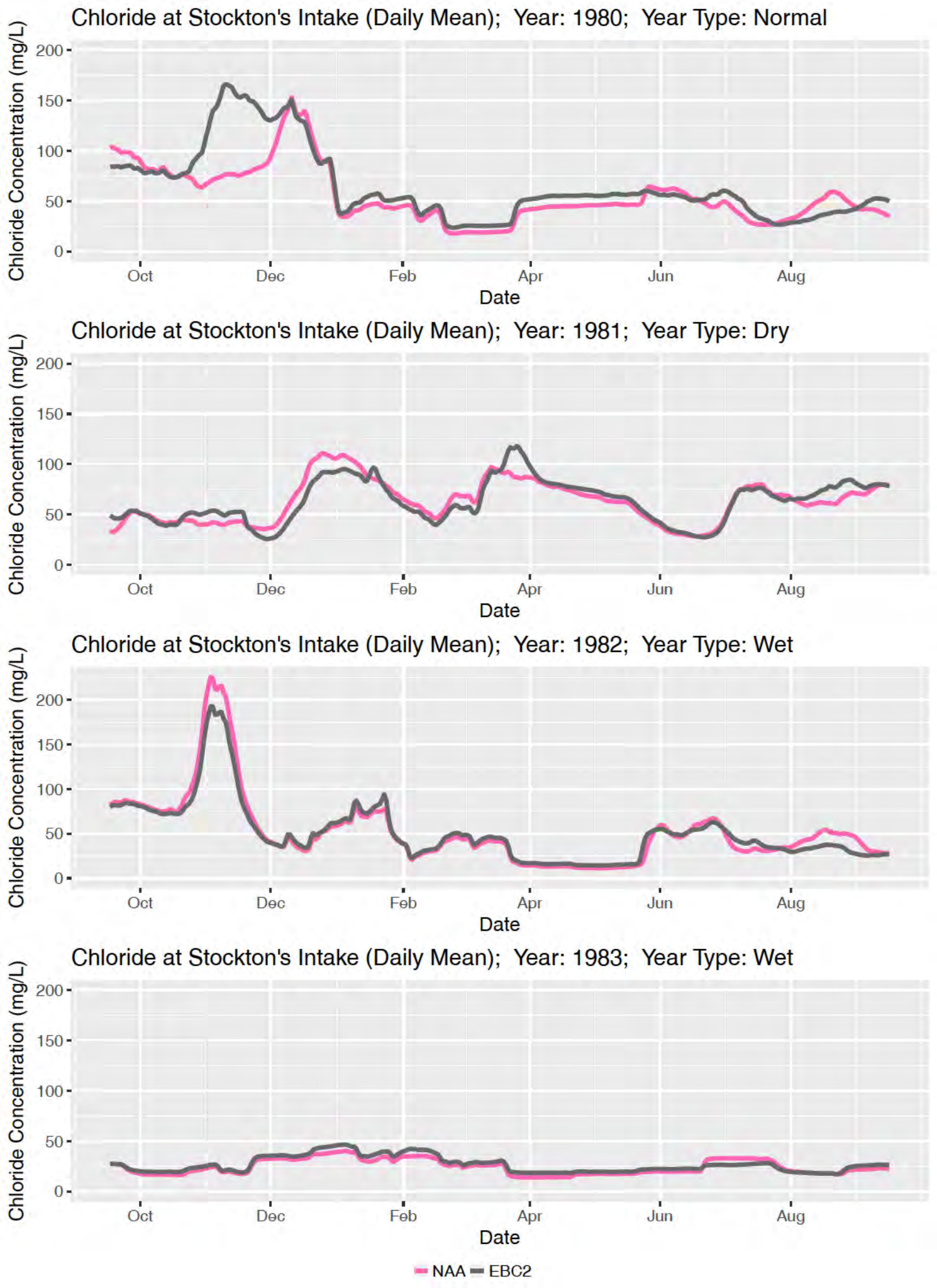

Sacramento River Water (Wet Water Year)
Martinez Water (Wet Water Year)
San Joaquin River Water (Wet Water Year)
Agriculture Water (Wet Water Year)
Volume of Water (%)
100%
80%
60%
40%
20%
0%
Oct
Dec
Feb
Apr
Jun
Aug
Date
NAA
EBC2

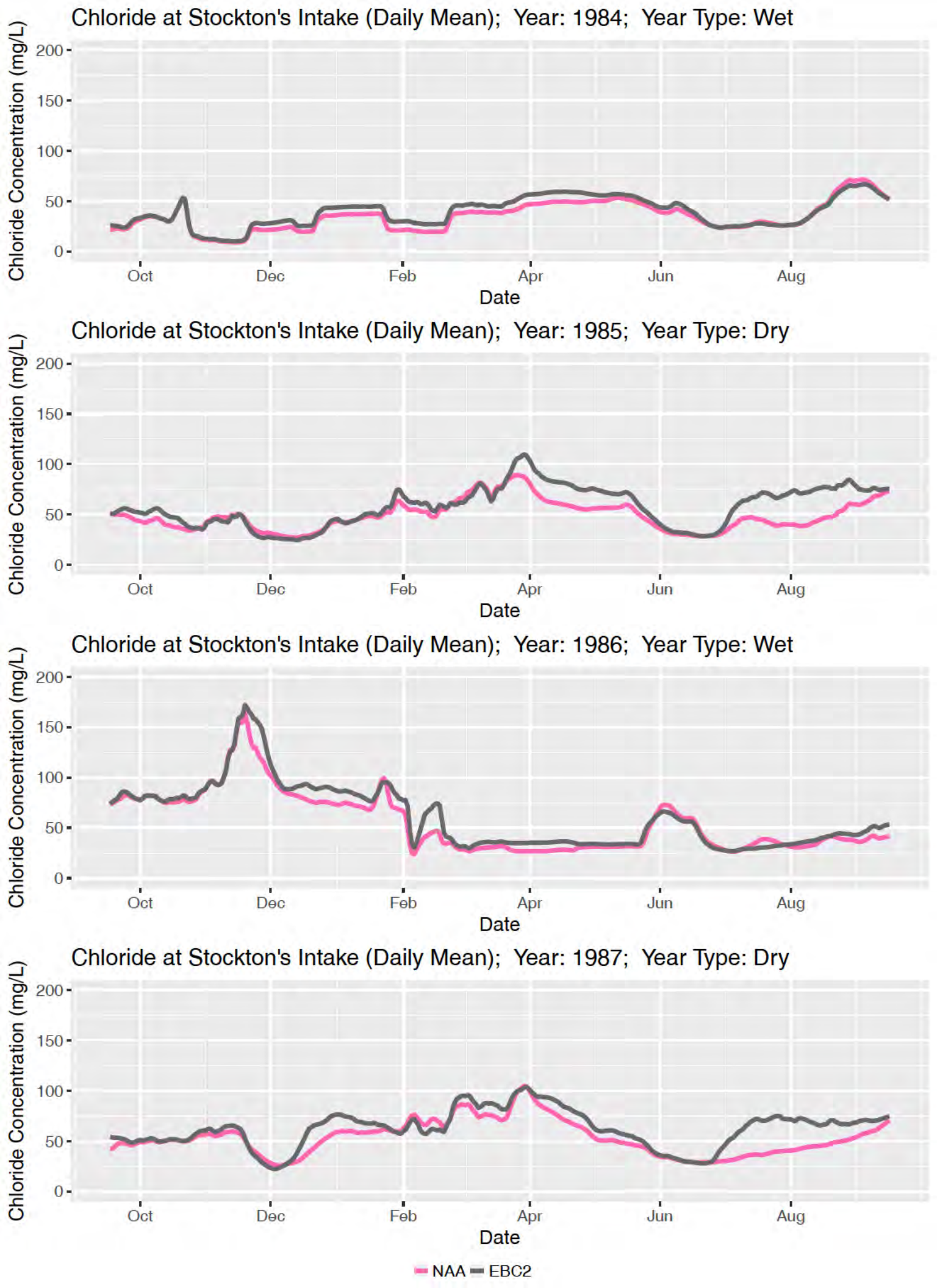
Appendix C

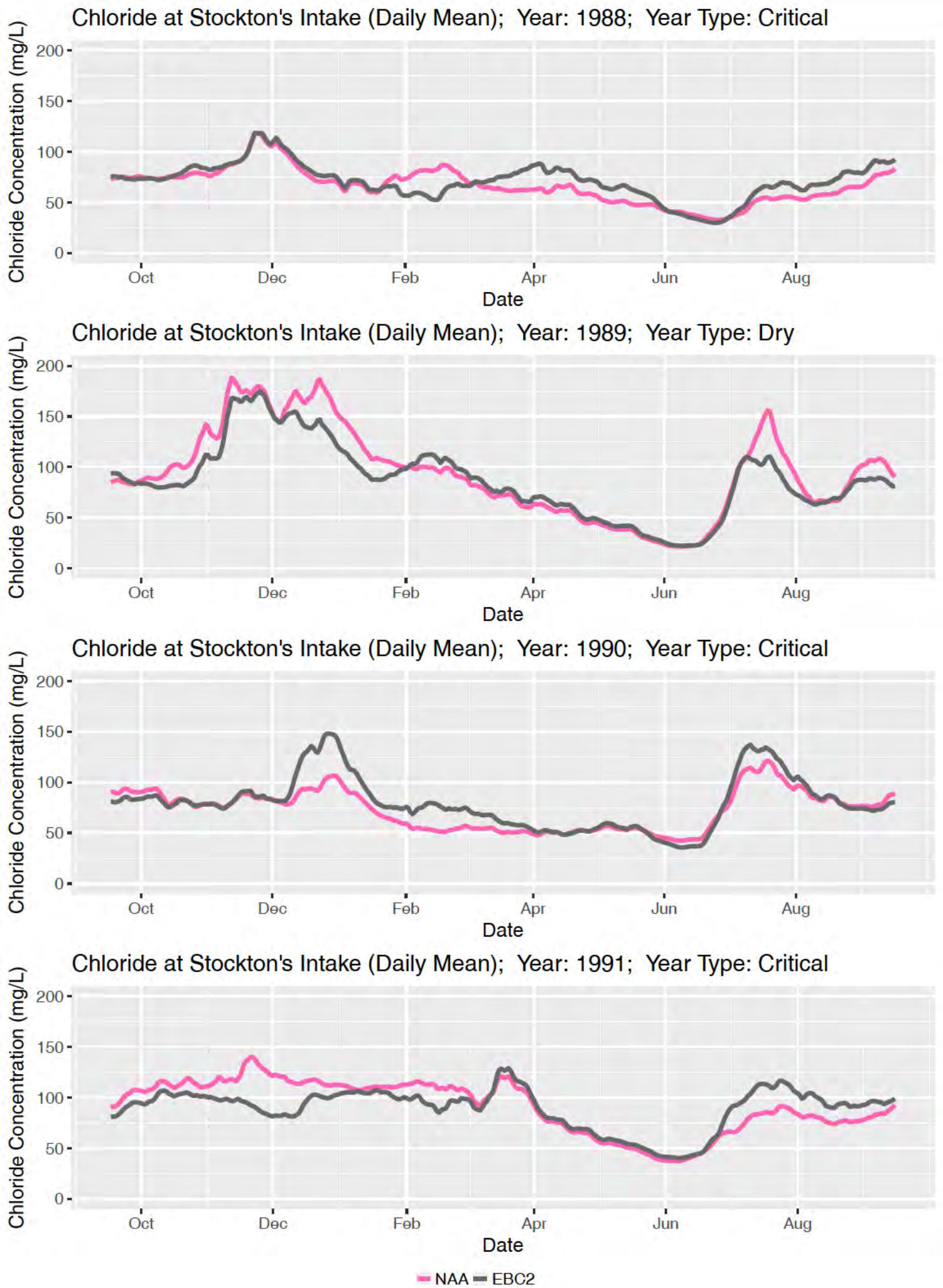
Chloride concentrations under baseline conditions EBC2 and NAA

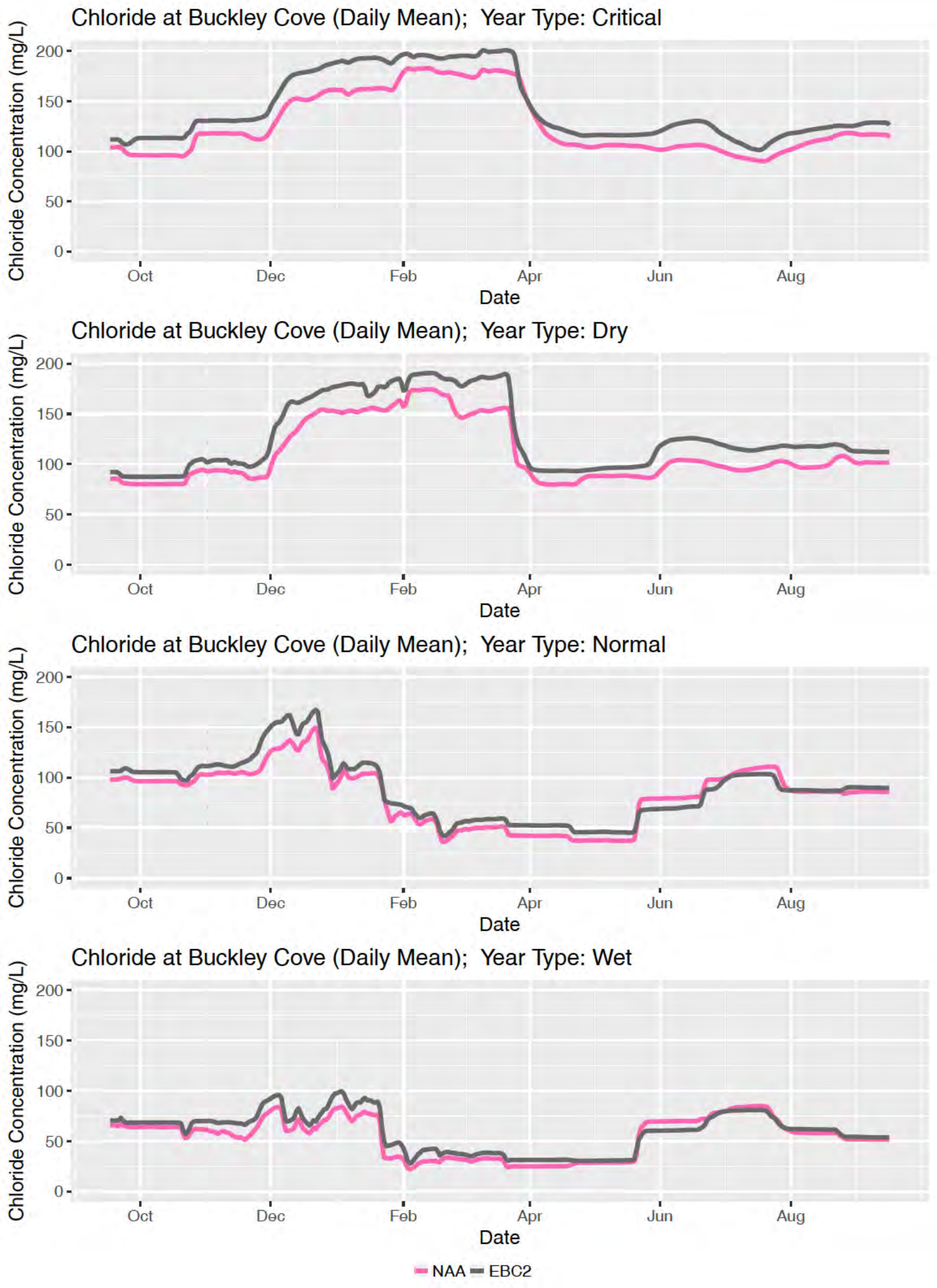

Chloride at Stockton's Intake (Daily Mean); Year Type: Critical
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Stockton's Intake (Daily Mean); Year Type: Dry
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Stockton's Intake (Daily Mean); Year Type: Normal
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Stockton's Intake (Daily Mean); Year Type: Wet
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
NAA
EBC2

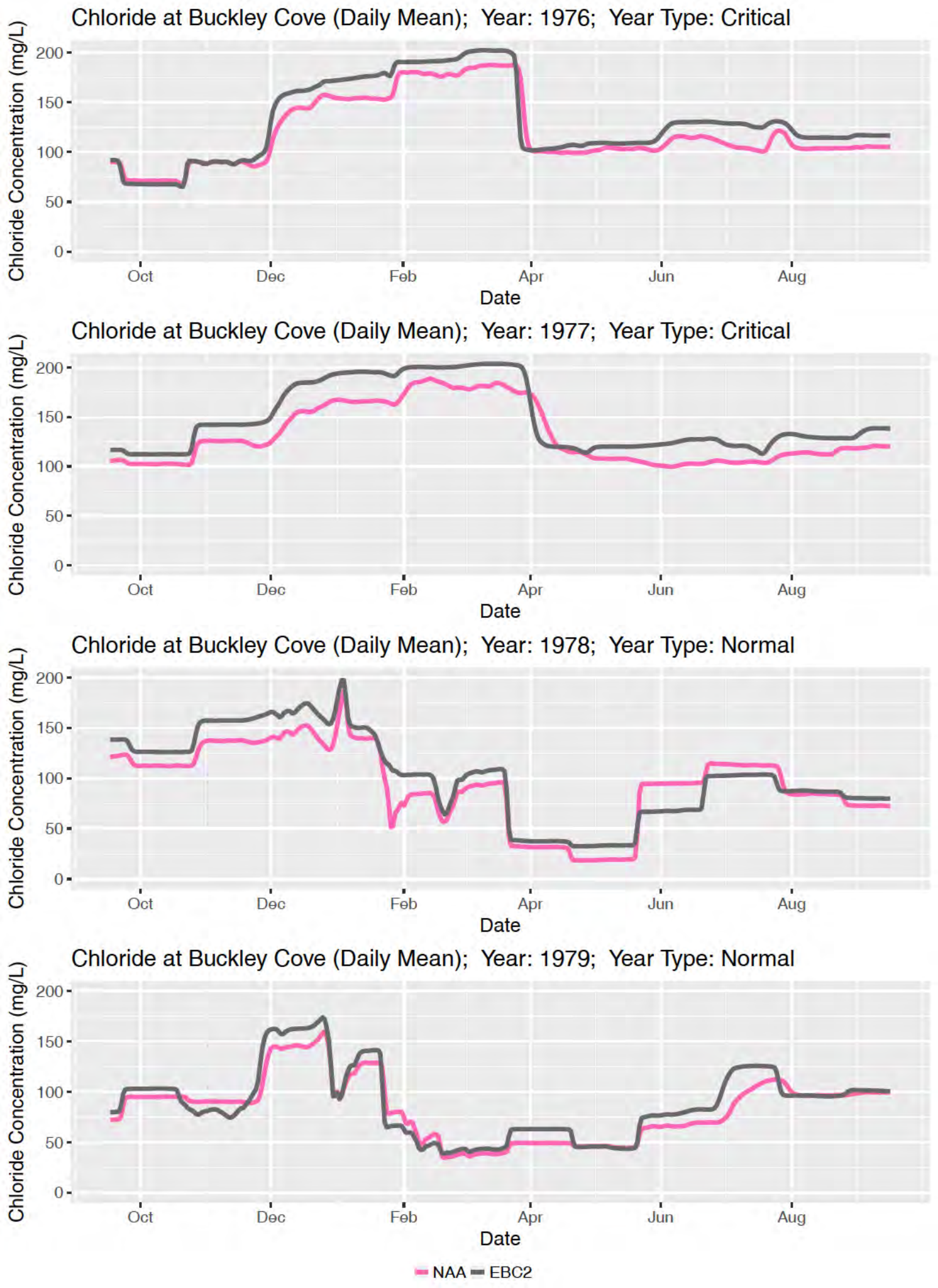

Chloride at Stockton's Intake (Daily Mean); Year: 1976; Year Type: Critical
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Stockton's Intake (Daily Mean); Year: 1977; Year Type: Critical
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Stockton's Intake (Daily Mean); Year: 1978; Year Type: Normal
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Stockton's Intake (Daily Mean); Year: 1979; Year Type: Normal
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
NAA
EBC2

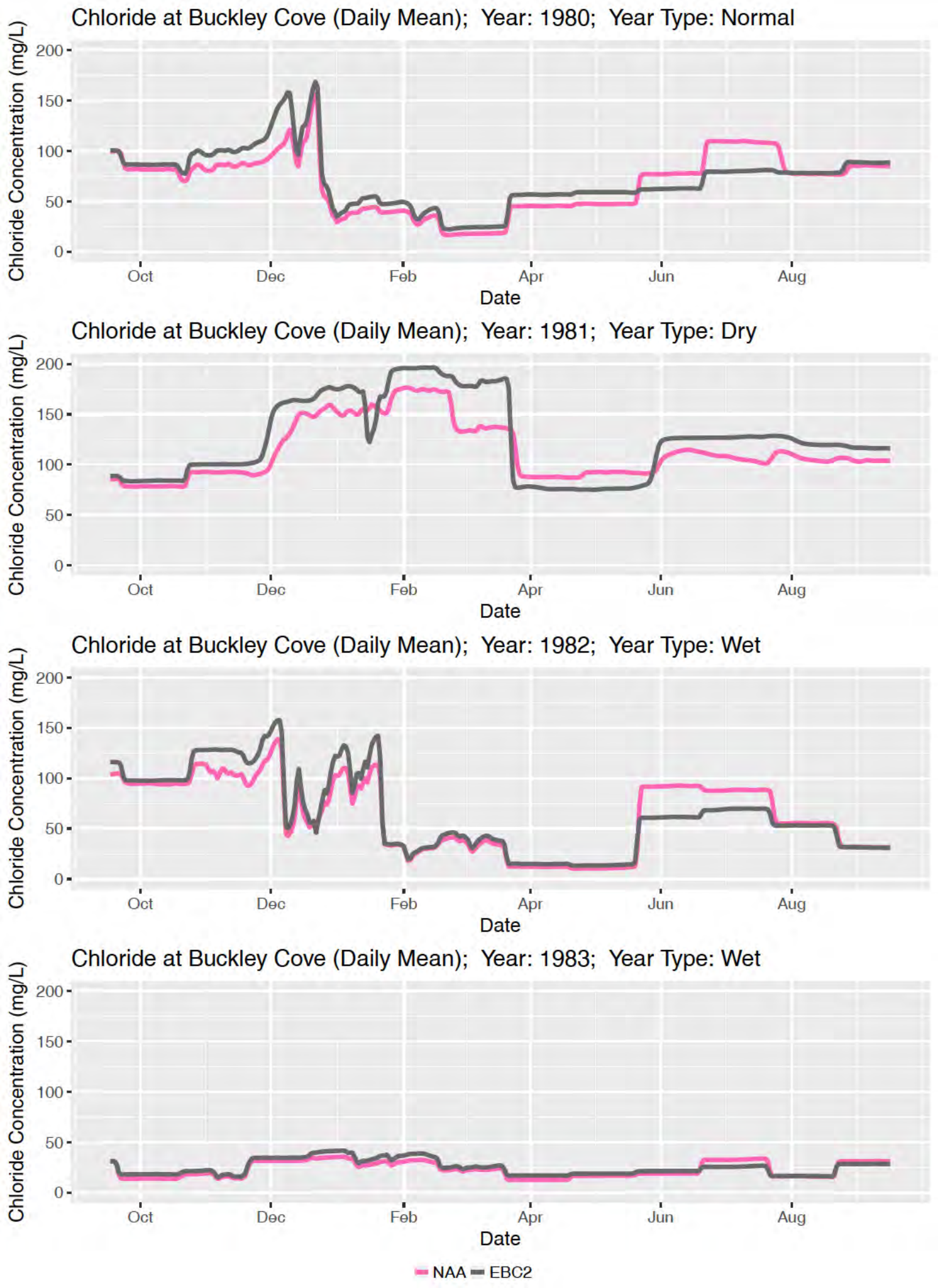

Chloride at Stockton's Intake (Daily Mean); Year: 1980; Year Type: Normal
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Stockton's Intake (Daily Mean); Year: 1981; Year Type: Dry
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Stockton's Intake (Daily Mean); Year: 1982; Year Type: Wet
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Stockton's Intake (Daily Mean); Year: 1983; Year Type: Wet
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
NAA
EBC2

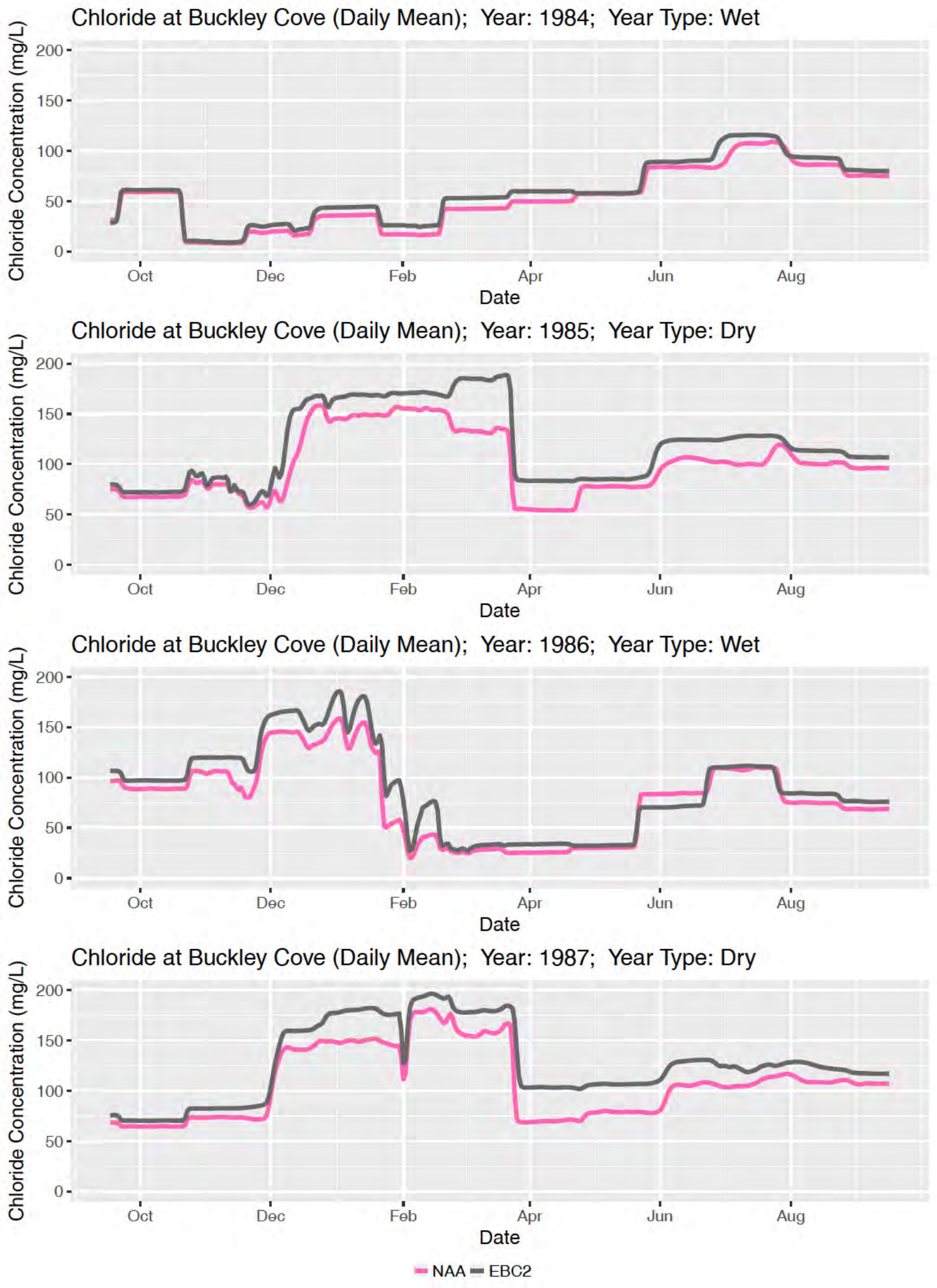

Chloride at Stockton's Intake (Daily Mean); Year: 1984; Year Type: Wet
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Stockton's Intake (Daily Mean); Year: 1985; Year Type: Dry
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Stockton's Intake (Daily Mean); Year: 1986; Year Type: Wet
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Stockton's Intake (Daily Mean); Year: 1987; Year Type: Dry
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
NAA
EBC2

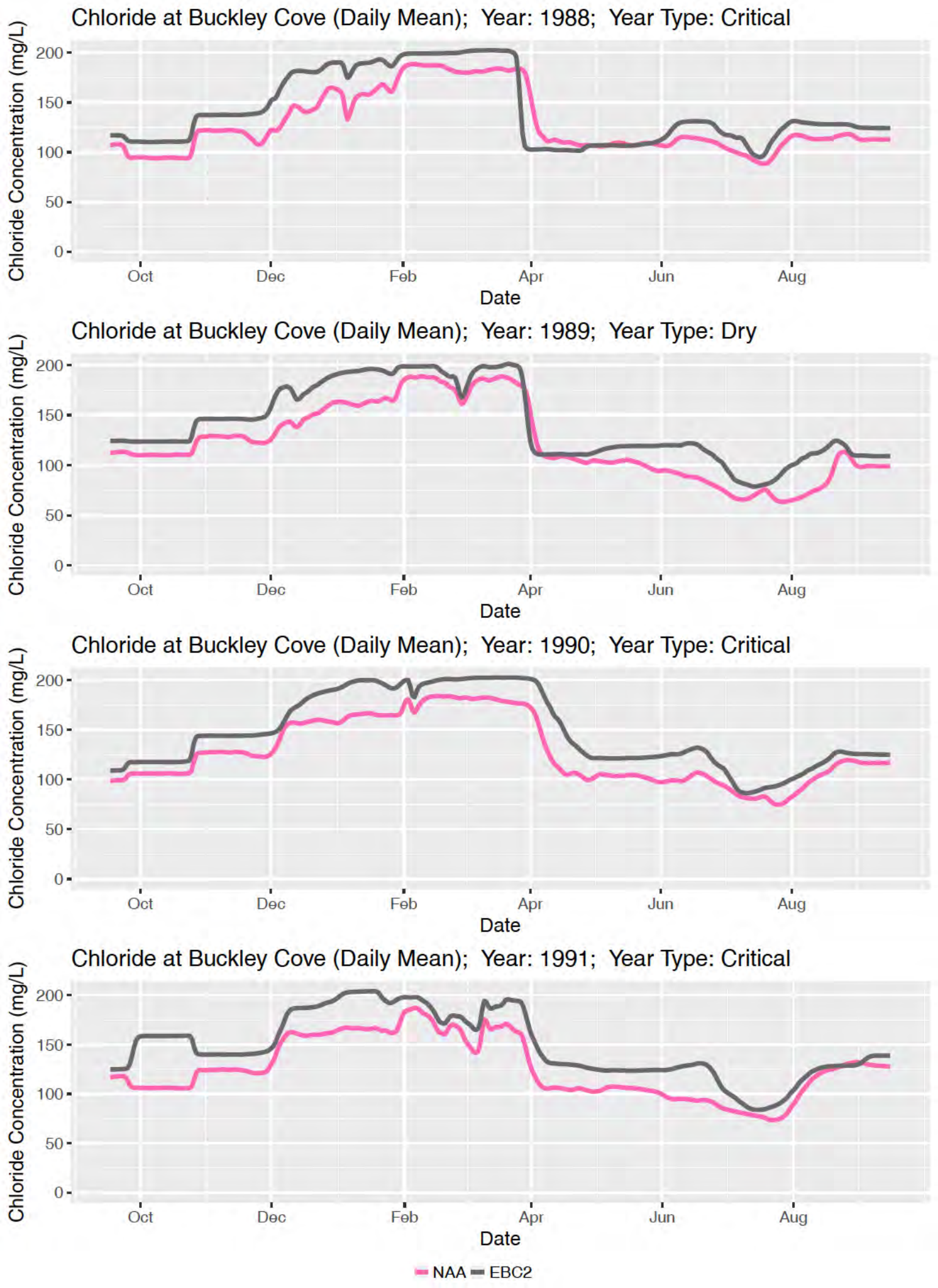

Chloride at Stockton's Intake (Daily Mean); Year: 1988; Year Type: Critical
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Stockton's Intake (Daily Mean); Year: 1989; Year Type: Dry
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Stockton's Intake (Daily Mean); Year: 1990; Year Type: Critical
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Stockton's Intake (Daily Mean); Year: 1991; Year Type: Critical
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
NAA
EBC2


Chloride at Buckley Cove (Daily Mean); Year Type: Critical
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Buckley Cove (Daily Mean); Year Type: Dry
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Buckley Cove (Daily Mean); Year Type: Normal
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Buckley Cove (Daily Mean); Year Type: Wet
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
NAA
EBC2


Chloride at Buckley Cove (Daily Mean); Year: 1976; Year Type: Critical
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Buckley Cove (Daily Mean); Year: 1977; Year Type: Critical
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Buckley Cove (Daily Mean); Year: 1978; Year Type: Normal
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Buckley Cove (Daily Mean); Year: 1979; Year Type: Normal
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
NAA
EBC2


Chloride at Buckley Cove (Daily Mean); Year: 1980; Year Type: Normal
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Buckley Cove (Daily Mean); Year: 1981; Year Type: Dry
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Buckley Cove (Daily Mean); Year: 1982; Year Type: Wet
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Buckley Cove (Daily Mean); Year: 1983; Year Type: Wet
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
NAA
EBC2

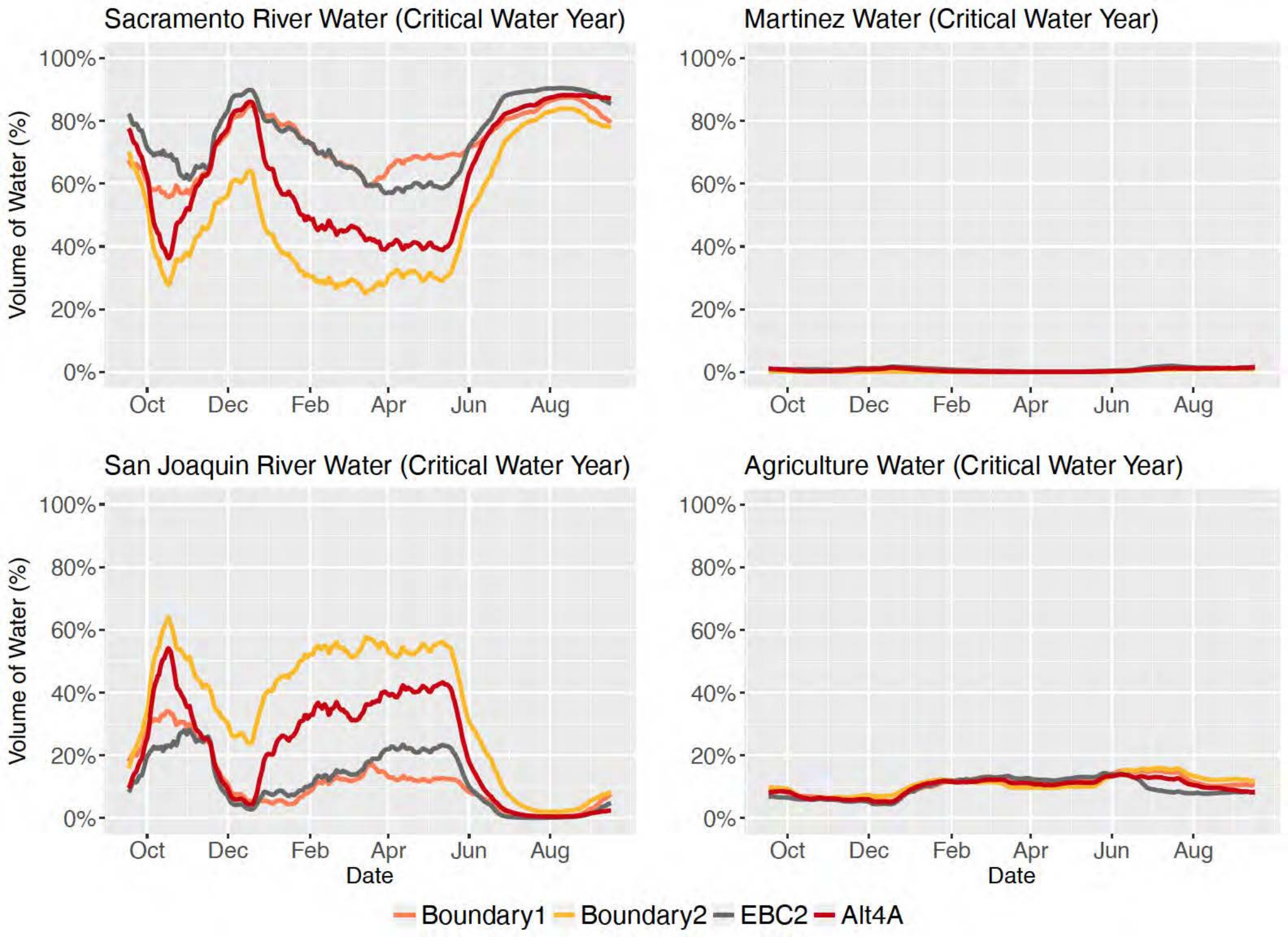

Chloride at Buckley Cove (Daily Mean); Year: 1984; Year Type: Wet
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Buckley Cove (Daily Mean); Year: 1985; Year Type: Dry
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Buckley Cove (Daily Mean); Year: 1986; Year Type: Wet
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Buckley Cove (Daily Mean); Year: 1987; Year Type: Dry
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
NAA
EBC2

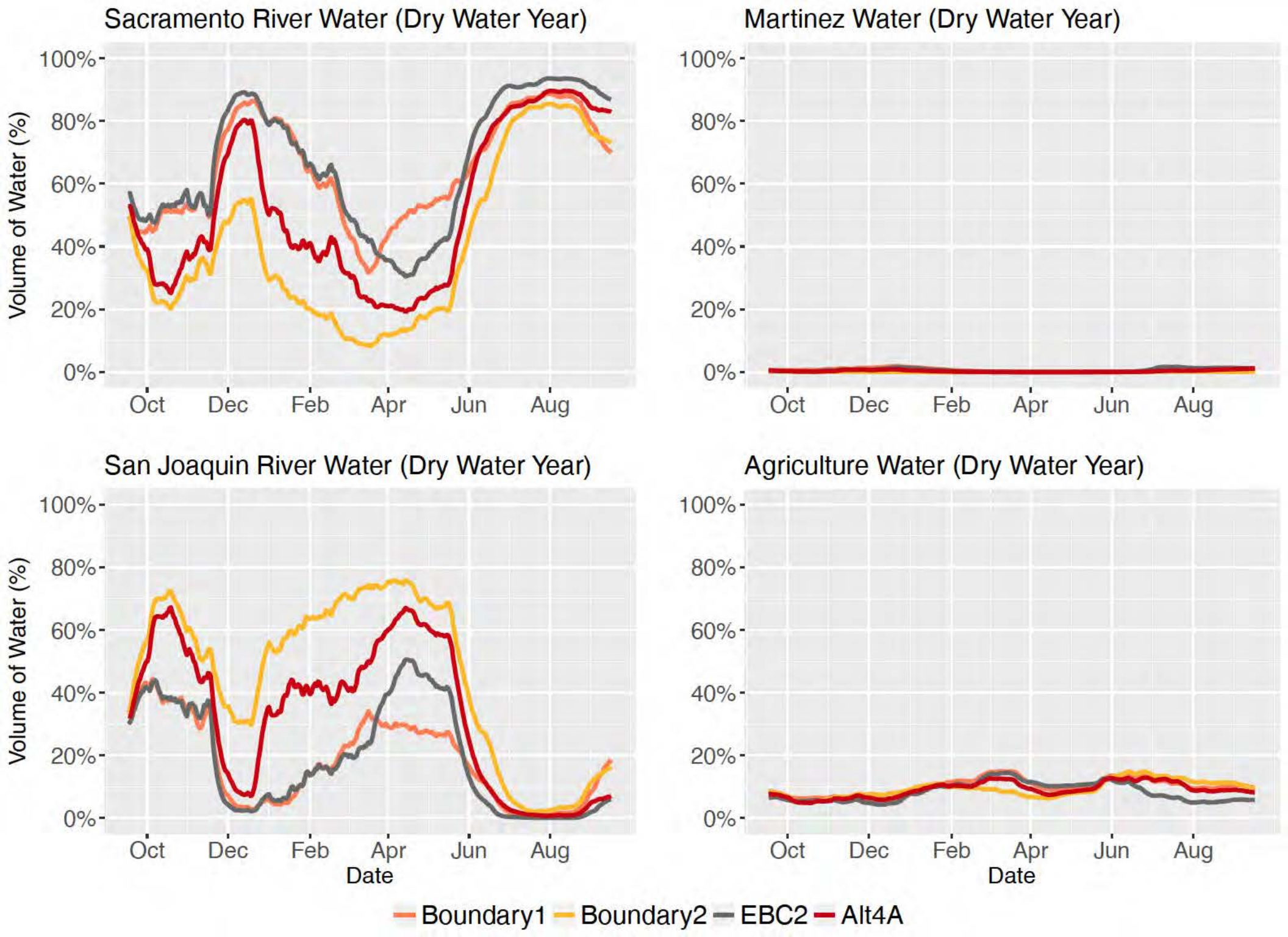

Chloride at Buckley Cove (Daily Mean); Year: 1988; Year Type: Critical
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Buckley Cove (Daily Mean); Year: 1989; Year Type: Dry
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Buckley Cove (Daily Mean); Year: 1990; Year Type: Critical
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Buckley Cove (Daily Mean); Year: 1991; Year Type: Critical
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
NAA
EBC2

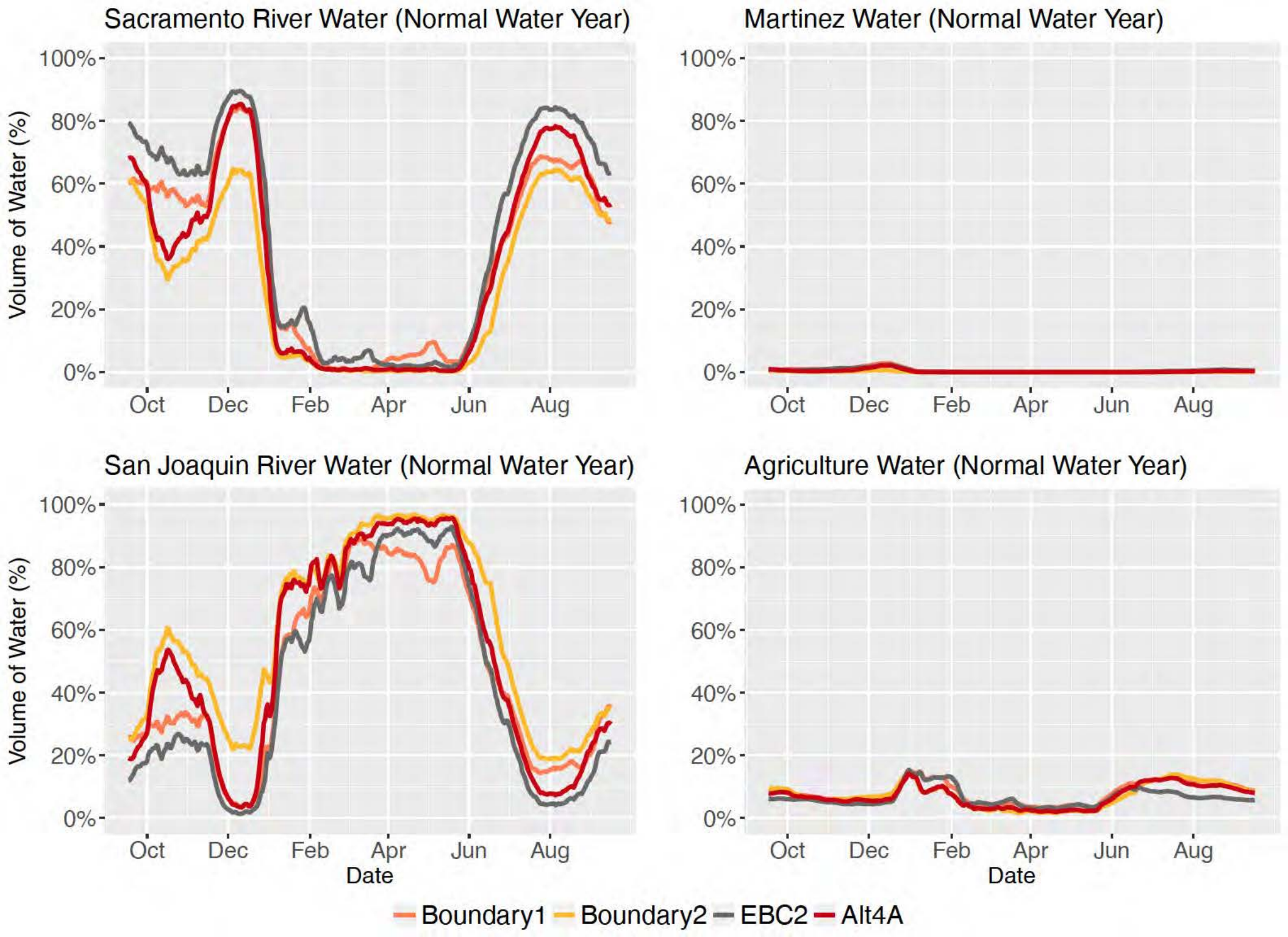
Appendix D

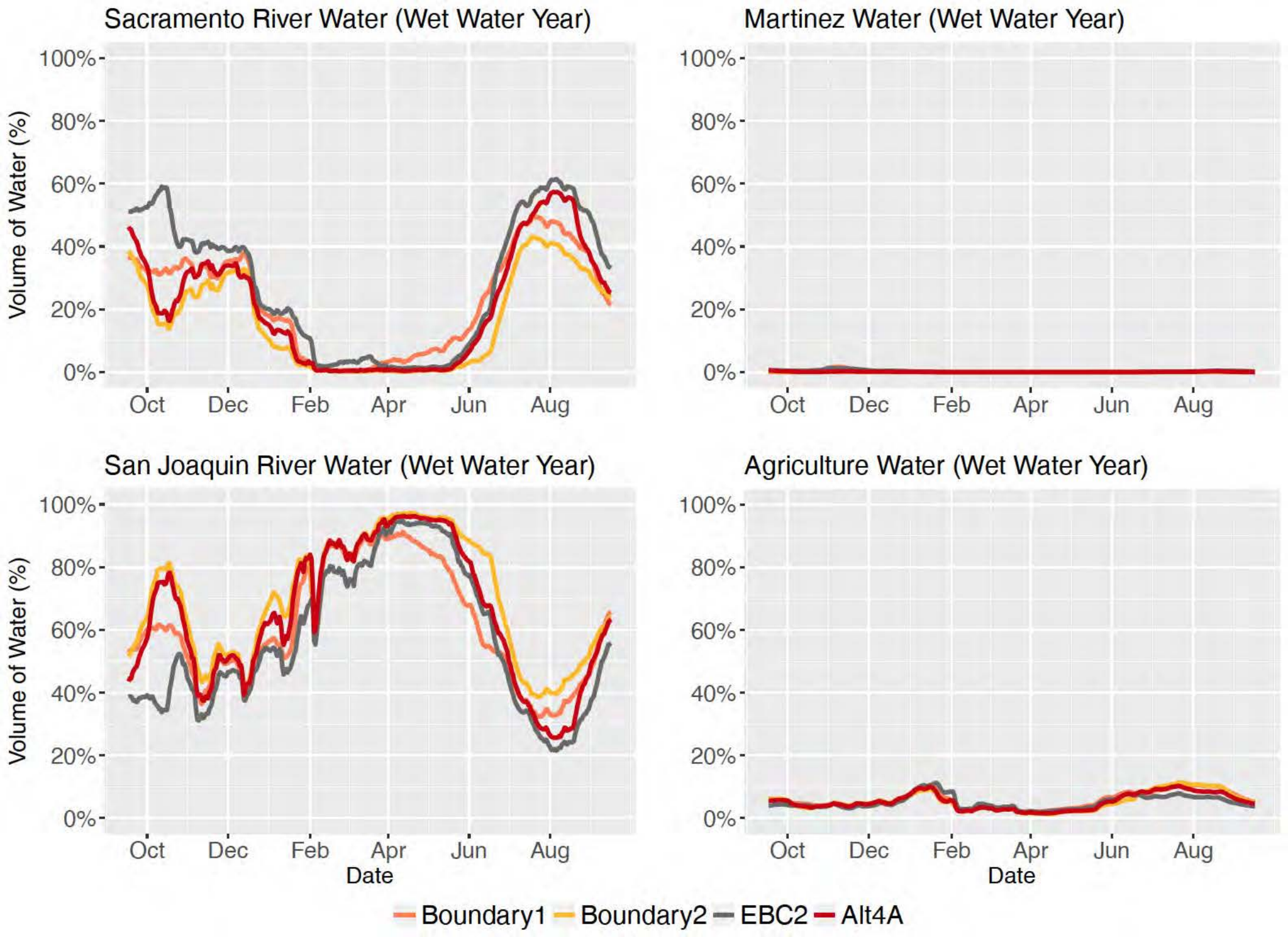
Water source fingerprints under Boundary 1, Boundary 2, and Alternative 4A

Source-water fingerprints at Stockton's Intake

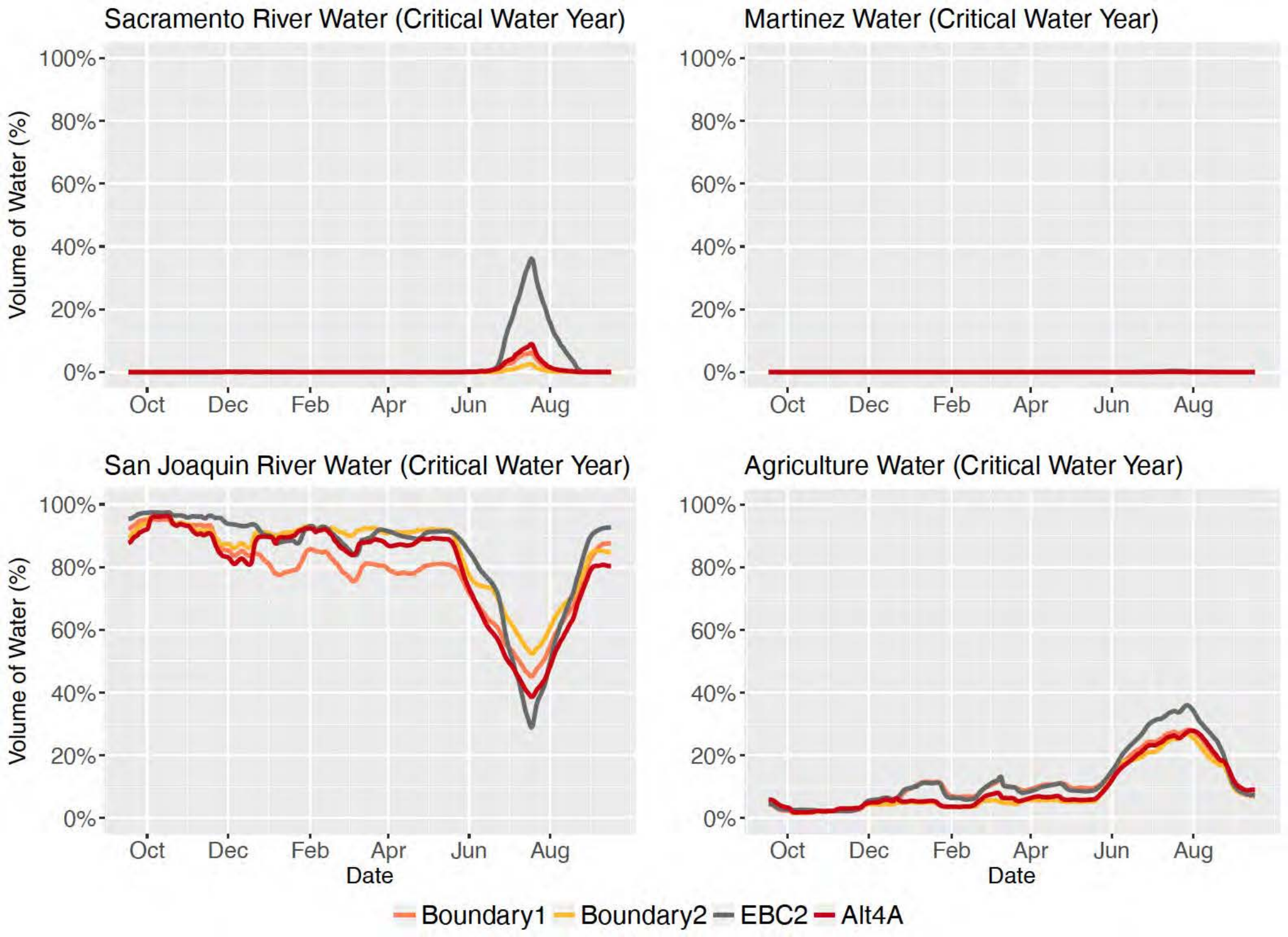

Sacramento River Water (Critical Water Year)
Martinez Water (Critical Water Year)
San Joaquin River Water (Critical Water Year)
Agriculture Water (Critical Water Year)
Volume of Water (%)
100%
80%
60%
40%
20%
0%
Oct
Dec
Feb
Apr
Jun
Aug
Date
Boundary1
Boundary2
EBC2
Alt4A

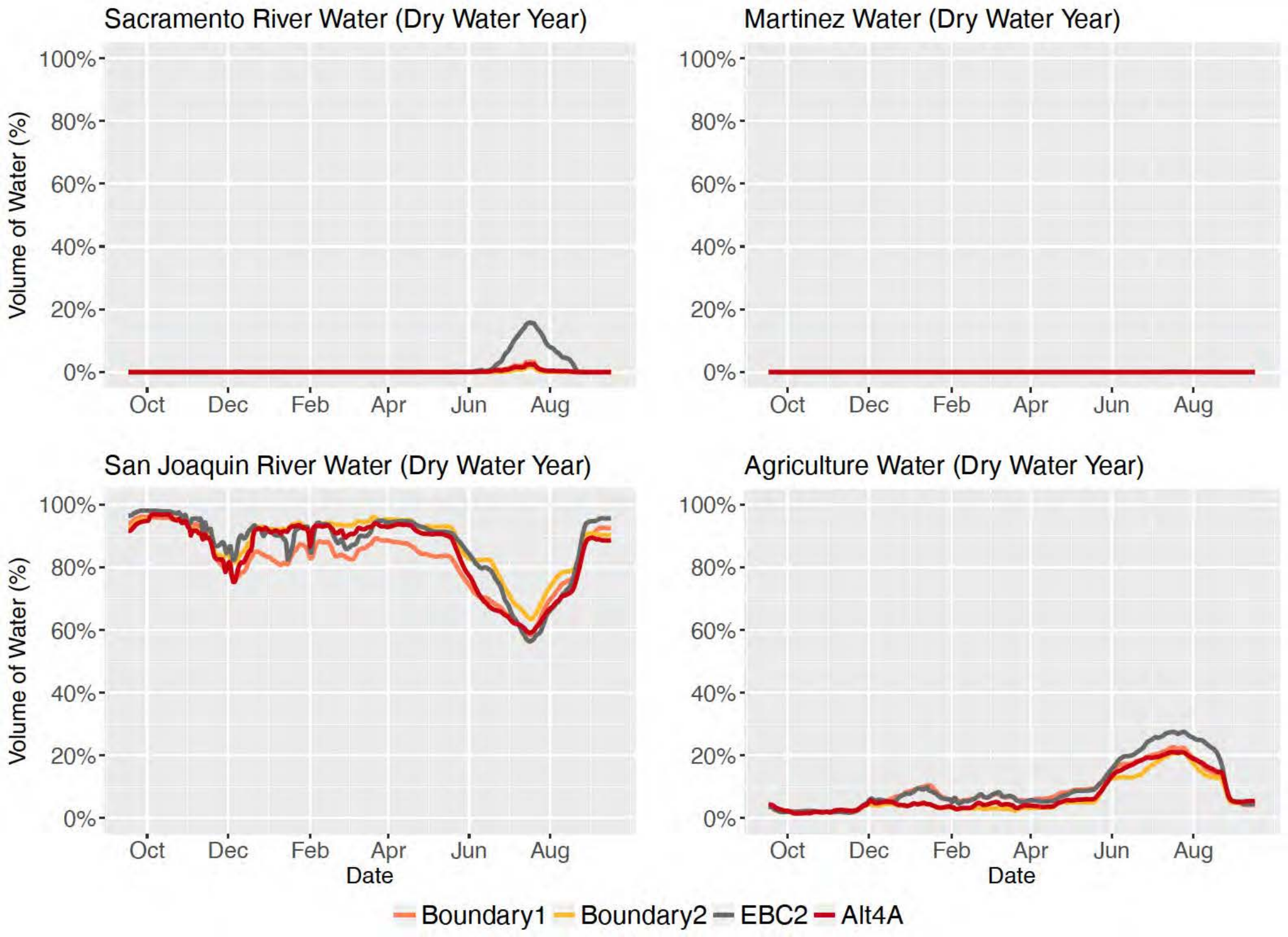

Sacramento River Water (Dry Water Year)
Martinez Water (Dry Water Year)
San Joaquin River Water (Dry Water Year)
Agriculture Water (Dry Water Year)
Volume of Water (%)
100%
80%
60%
40%
20%
0%
Oct
Dec
Feb
Apr
Jun
Aug
Date
Boundary1
Boundary2
EBC2
Alt4A

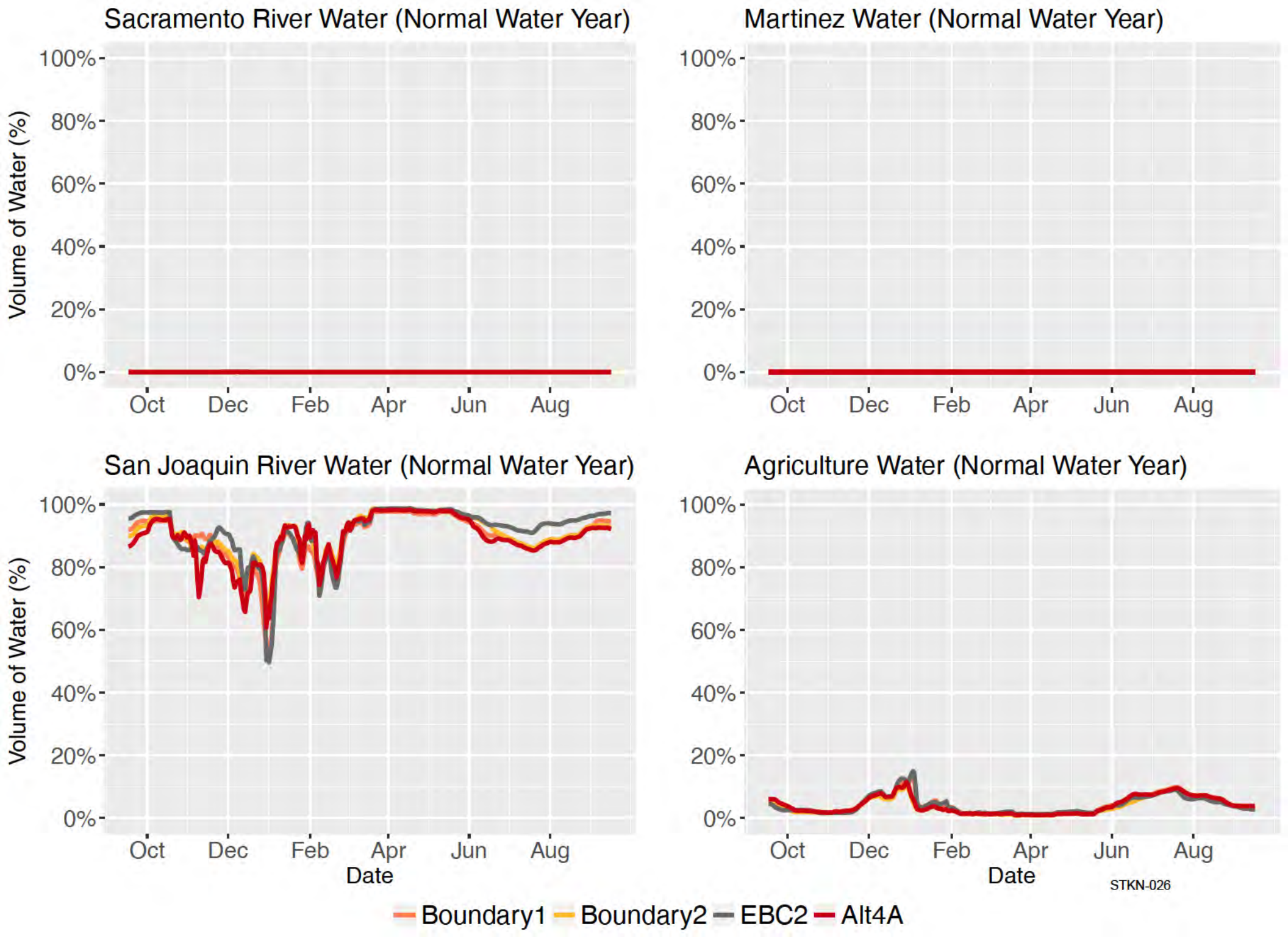

Sacramento River Water (Normal Water Year)
Martinez Water (Normal Water Year)
San Joaquin River Water (Normal Water Year)
Agriculture Water (Normal Water Year)
Volume of Water (%)
100%
80%
60%
40%
20%
0%
Oct
Dec
Feb
Apr
Jun
Aug
Date
Boundary1
Boundary2
EBC2
Alt4A

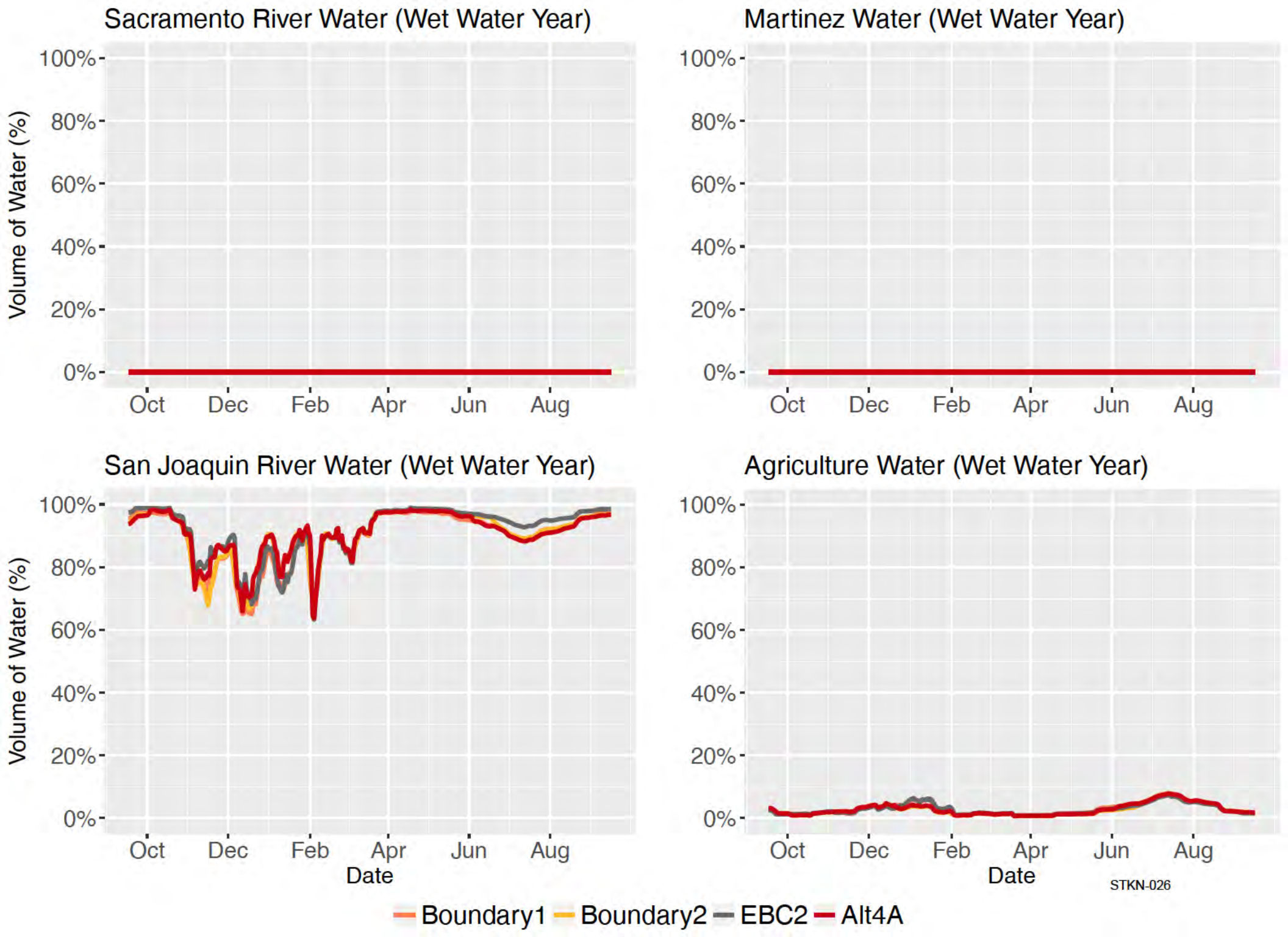

Sacramento River Water (Wet Water Year)
Martinez Water (Wet Water Year)
San Joaquin River Water (Wet Water Year)
Agriculture Water (Wet Water Year)
Volume of Water (%)
100%
80%
60%
40%
20%
0%
Oct
Dec
Feb
Apr
Jun
Aug
Date
Boundary1
Boundary2
EBC2
Alt4A

Source-water fingerprints at Buckley Cove


Sacramento River Water (Critical Water Year)
Martinez Water (Critical Water Year)
San Joaquin River Water (Critical Water Year)
Agriculture Water (Critical Water Year)
Volume of Water (%)
100%
80%
60%
40%
20%
0%
Oct
Dec
Feb
Apr
Jun
Aug
Date
Boundary1
Boundary2
EBC2
Alt4A

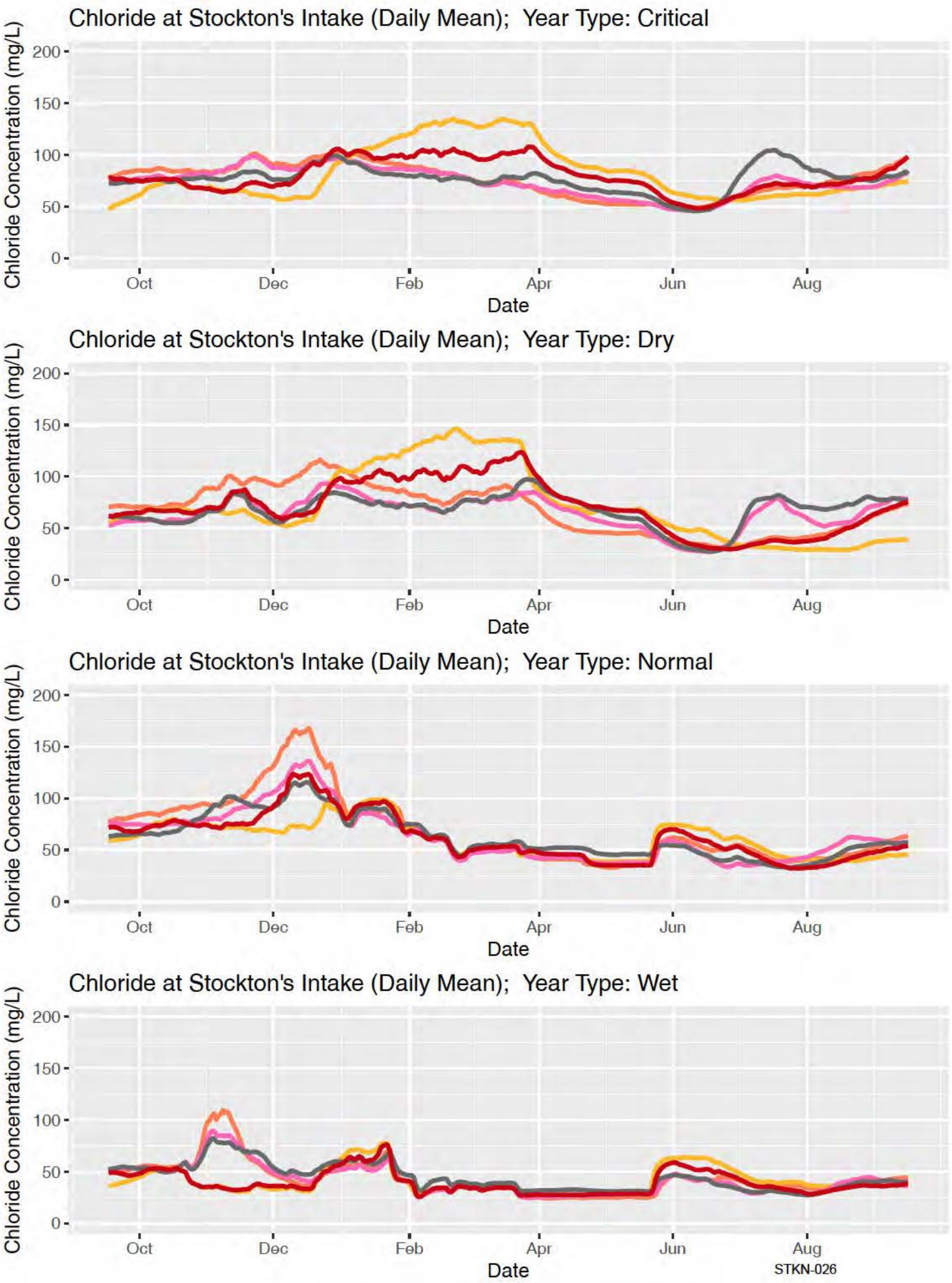

Sacramento River Water (Dry Water Year)
Martinez Water (Dry Water Year)
San Joaquin River Water (Dry Water Year)
Agriculture Water (Dry Water Year)
Volume of Water (%)
100%
80%
60%
40%
20%
0%
Oct
Dec
Feb
Apr
Jun
Aug
Date
Boundary1
Boundary2
EBC2
Alt4A

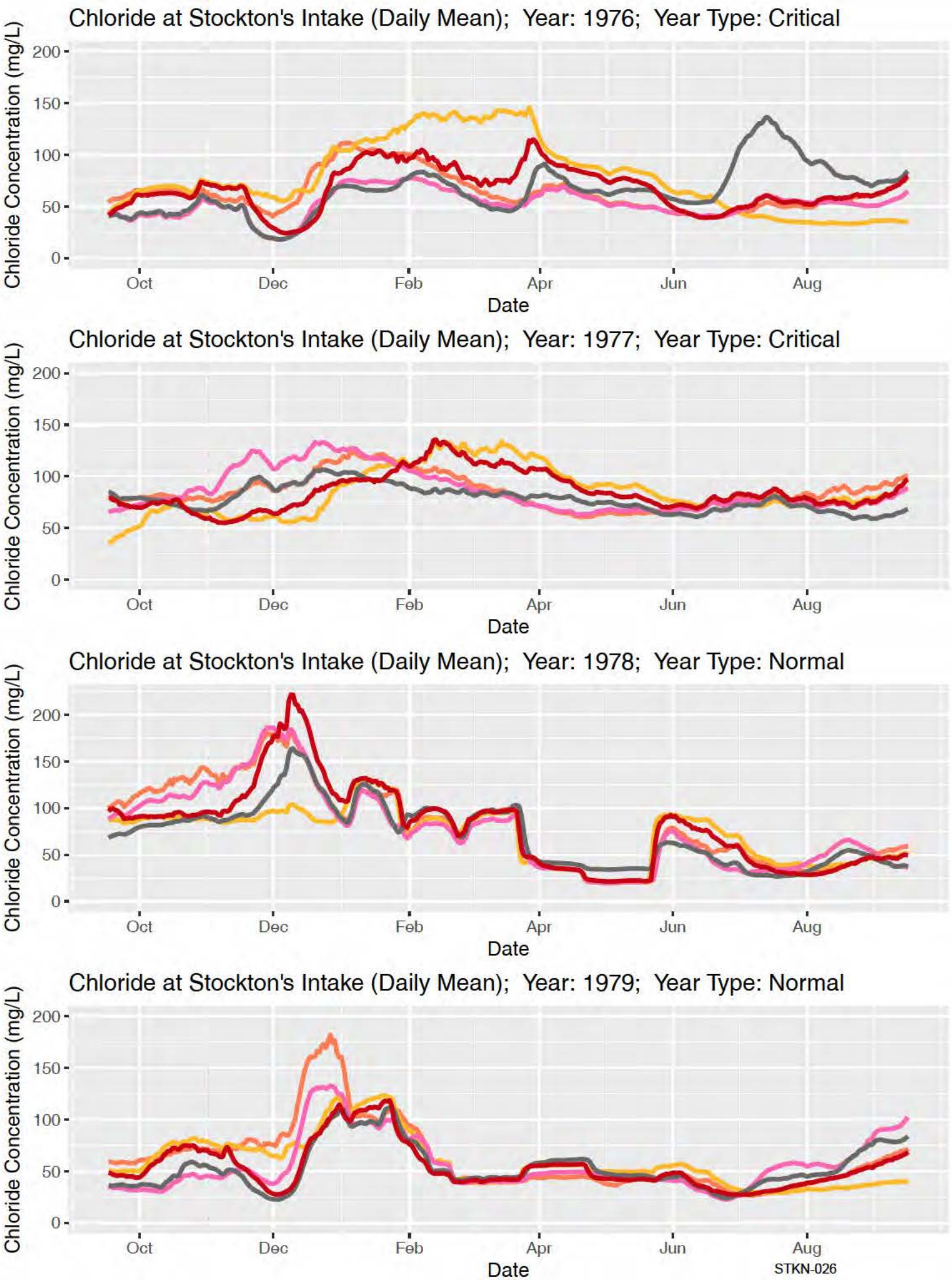

Sacramento River Water (Normal Water Year)
Martinez Water (Normal Water Year)
San Joaquin River Water (Normal Water Year)
Agriculture Water (Normal Water Year)
Volume of Water (%)
100%
80%
60%
40%
20%
0%
Oct
Dec
Feb
Apr
Jun
Aug
Date
STKN-026
Boundary1
Boundary2
EBC2
Alt4A

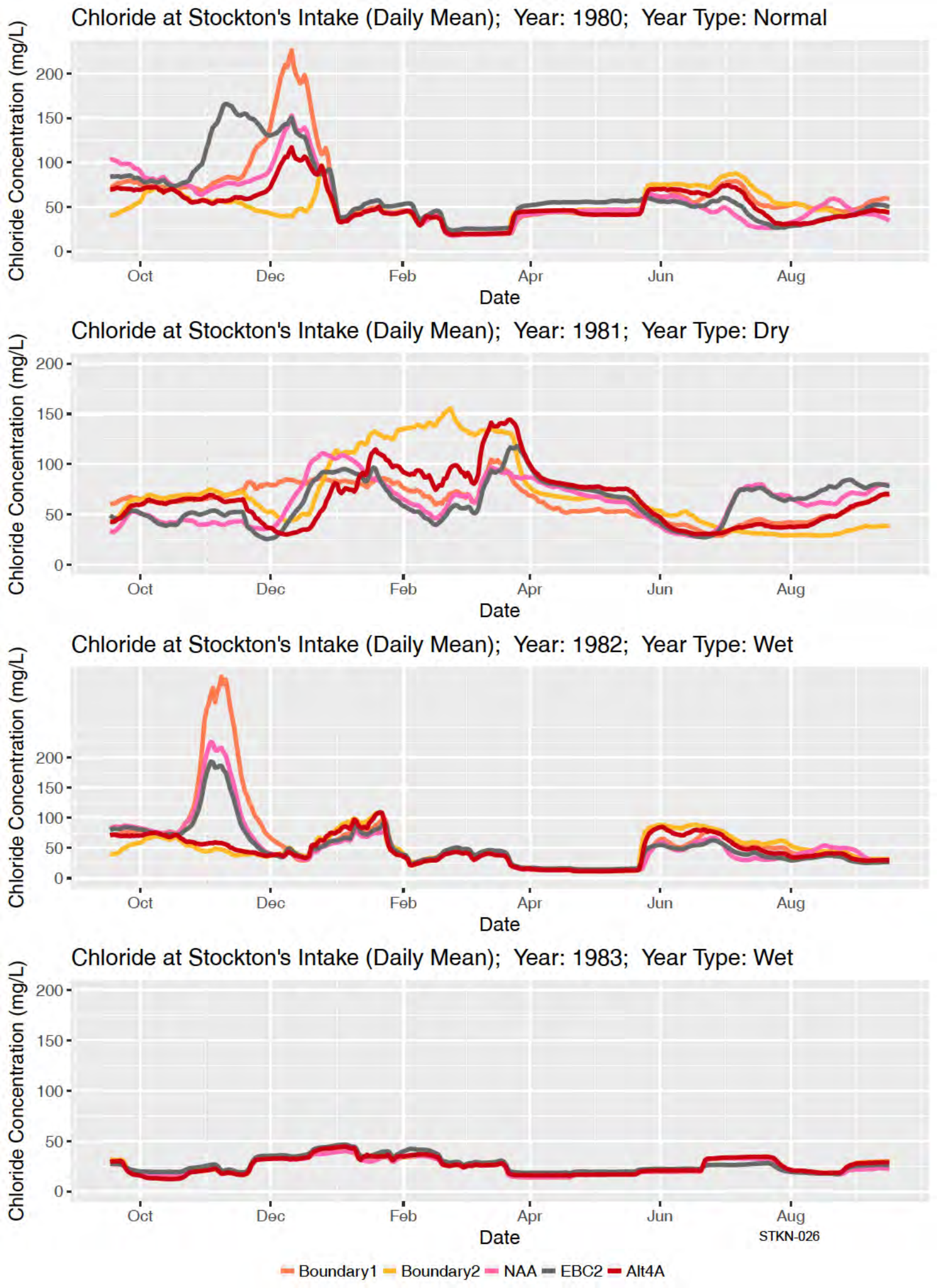

Sacramento River Water (Wet Water Year)
Martinez Water (Wet Water Year)
San Joaquin River Water (Wet Water Year)
Agriculture Water (Wet Water Year)
Volume of Water (%)
100%
80%
60%
40%
20%
0%
Oct
Dec
Feb
Apr
Jun
Aug
Date
STKN-026
Boundary1
Boundary2
EBC2
Alt4A

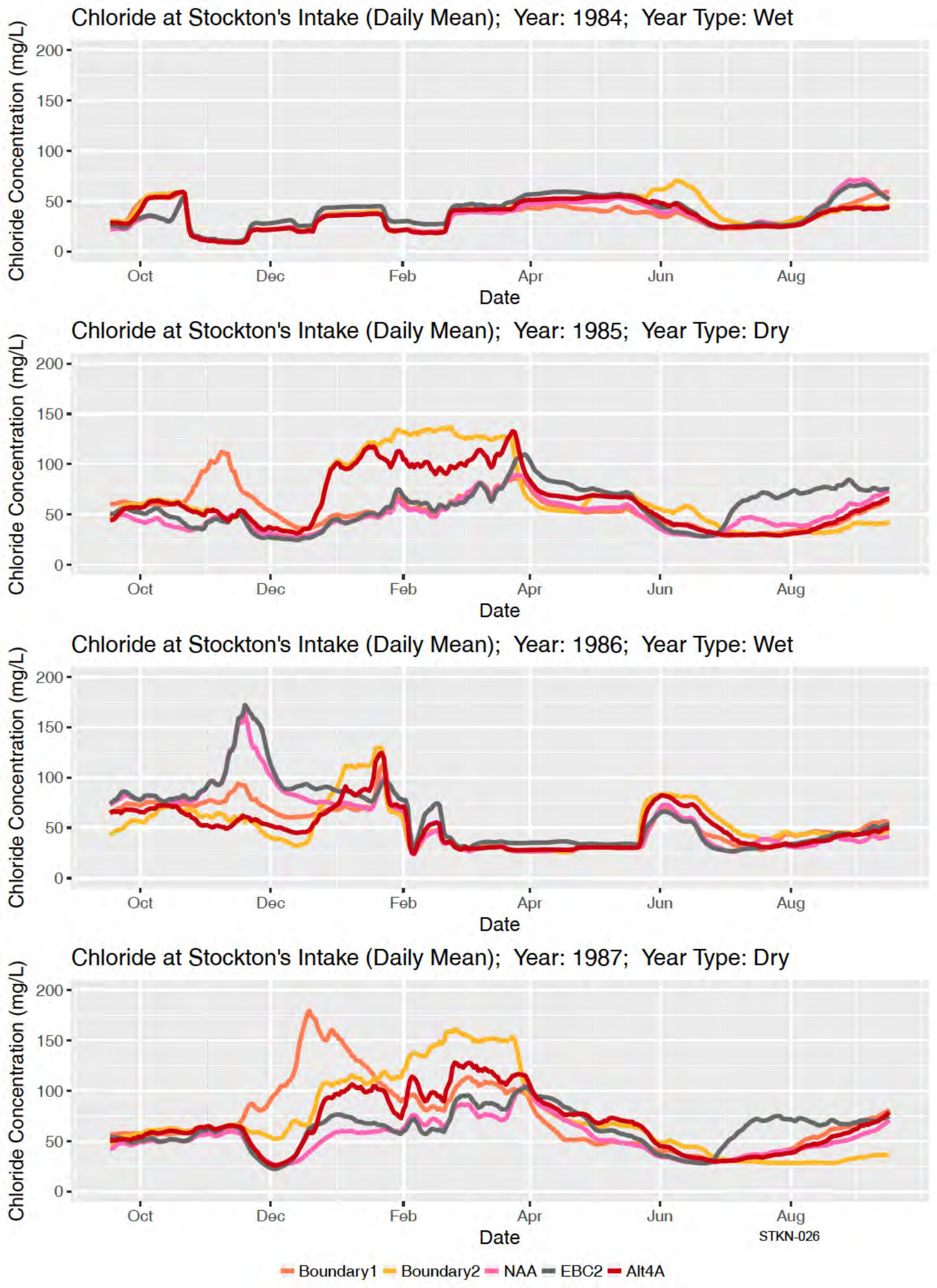
Appendix E

Chloride concentrations under Boundary 1, Boundary 2, and Alternative 4A


Chloride at Stockton's Intake (Daily Mean); Year Type: Critical
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Stockton's Intake (Daily Mean); Year Type: Dry
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Stockton's Intake (Daily Mean); Year Type: Normal
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Stockton's Intake (Daily Mean); Year Type: Wet
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
STKN-026
Boundary1
Boundary2
NAA
EBC2
Alt4A


Chloride at Stockton's Intake (Daily Mean); Year: 1976; Year Type: Critical
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Stockton's Intake (Daily Mean); Year: 1977; Year Type: Critical
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Stockton's Intake (Daily Mean); Year: 1978; Year Type: Normal
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Stockton's Intake (Daily Mean); Year: 1979; Year Type: Normal
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
STKN-026
Boundary1
Boundary2
NAA
EBC2
Alt4A


Chloride at Stockton's Intake (Daily Mean); Year: 1980; Year Type: Normal
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Stockton's Intake (Daily Mean); Year: 1981; Year Type: Dry
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Stockton's Intake (Daily Mean); Year: 1982; Year Type: Wet
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Stockton's Intake (Daily Mean); Year: 1983; Year Type: Wet
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
STKN-026
Boundary1
Boundary2
NAA
EBC2
Alt4A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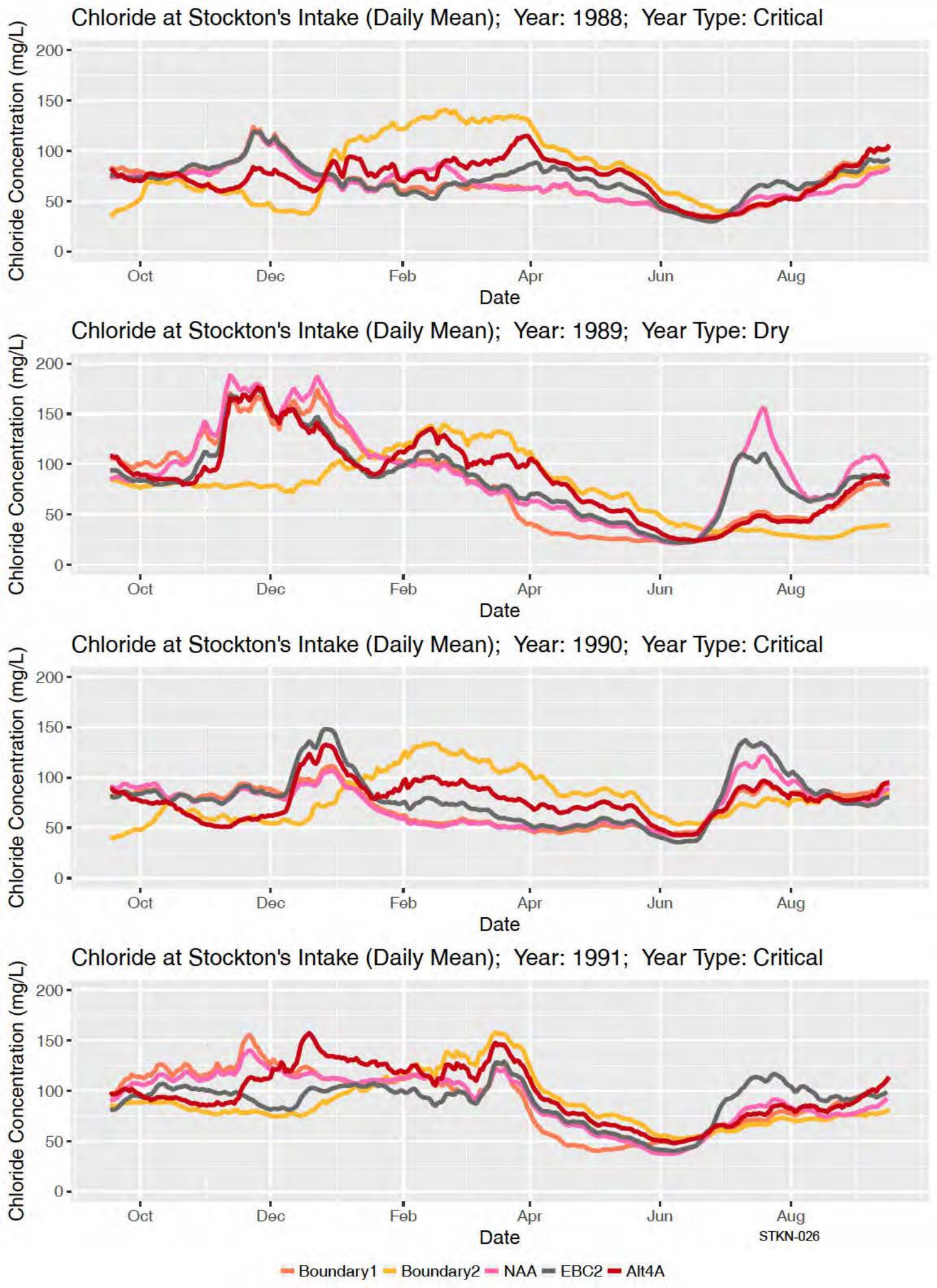
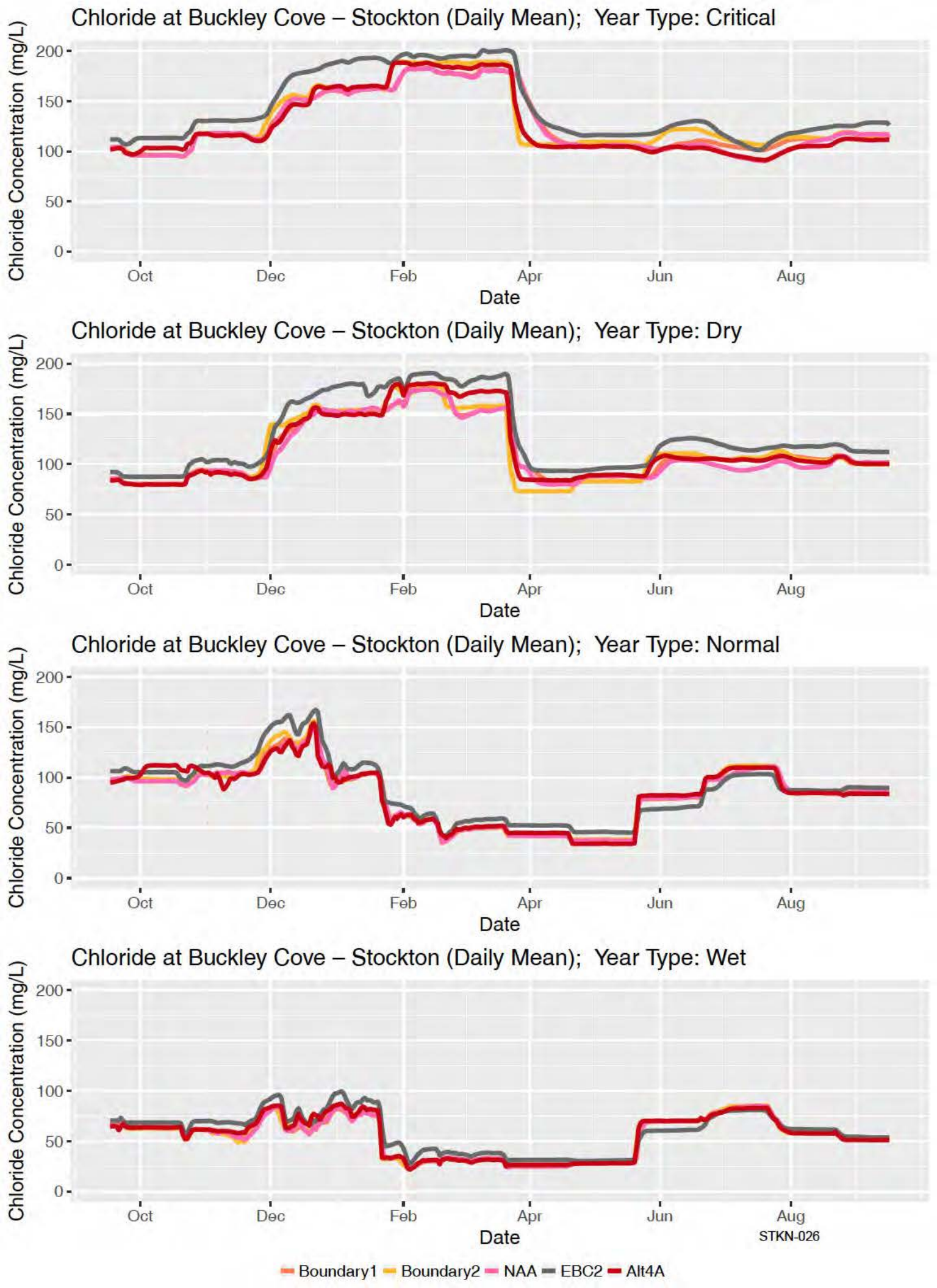
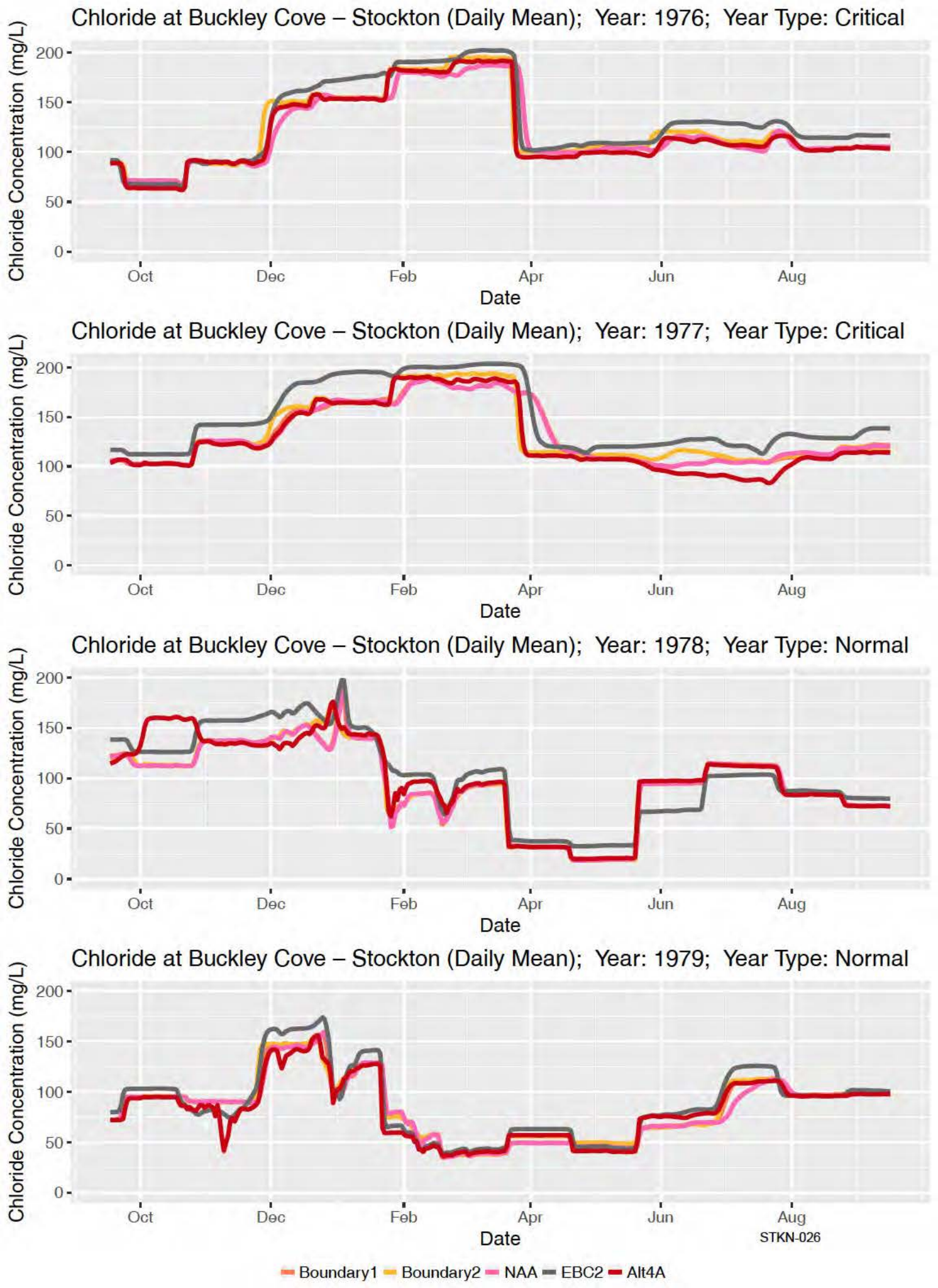
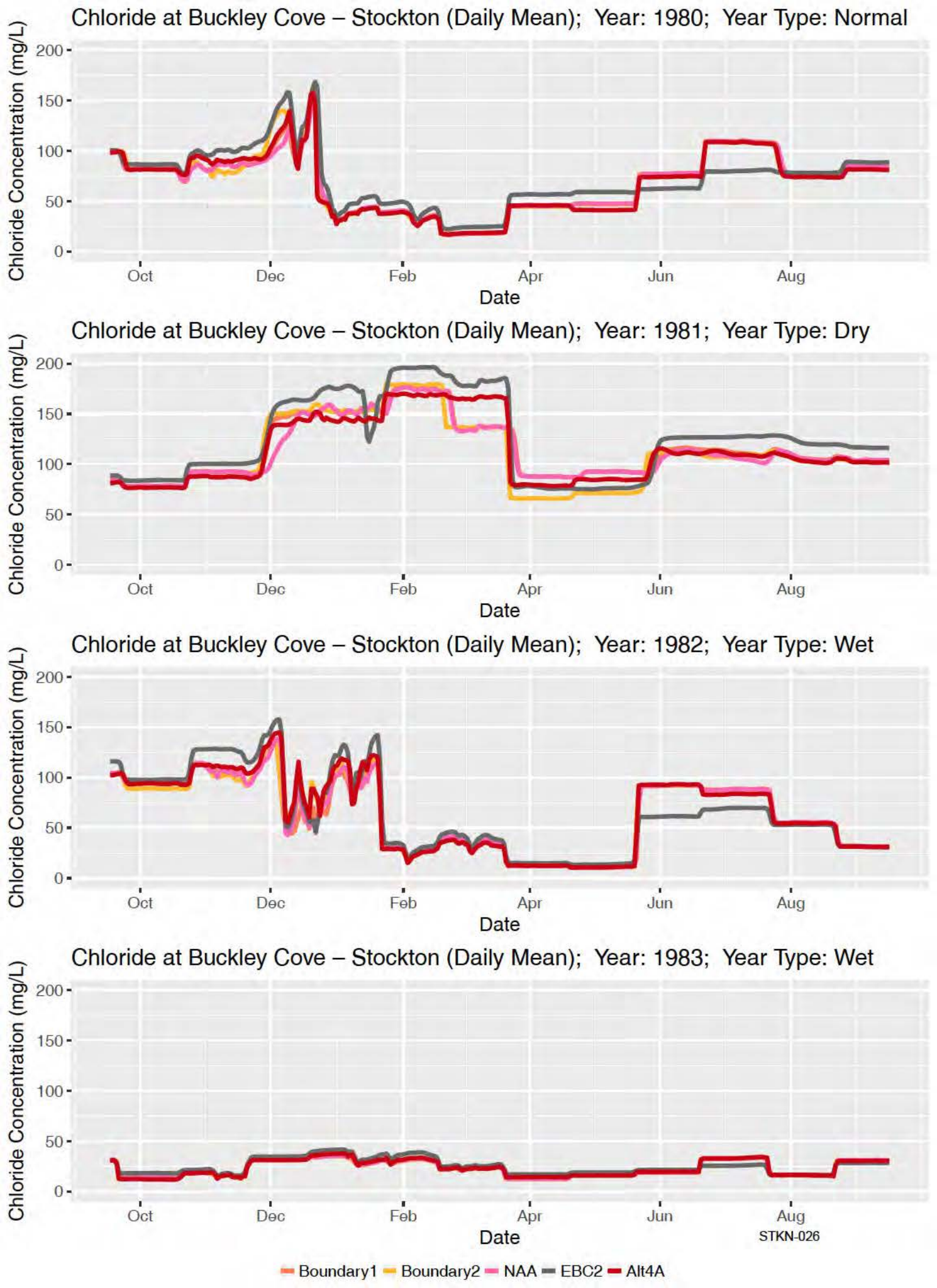
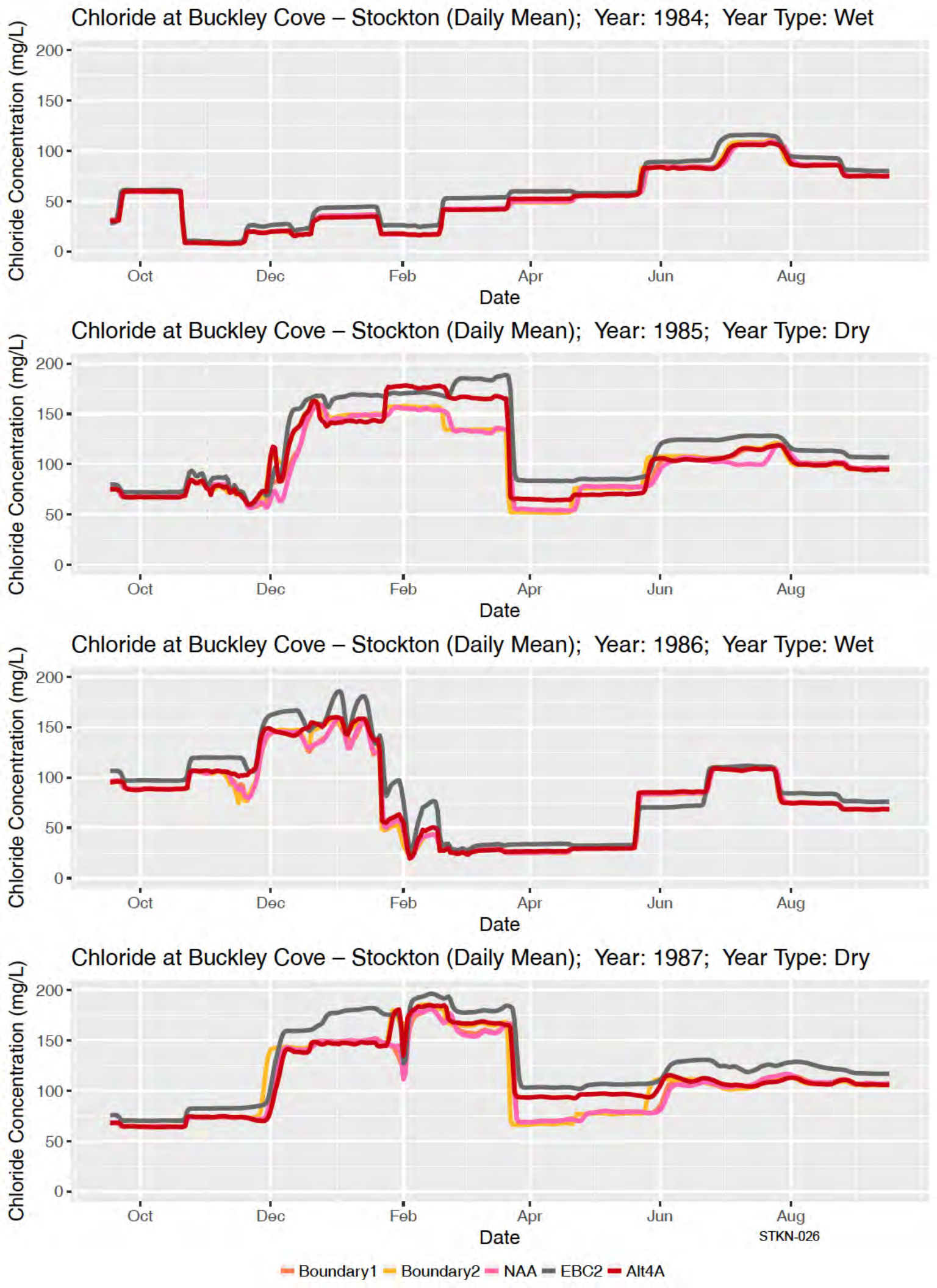
Chloride at Stockton's Intake (Daily Mean); Year: 1985; Year Type: Dry
Chloride at Stockton's Intake (Daily Mean); Year: 1986; Year Type: Wet
Chloride at Stockton's Intake (Daily Mean); Year: 1987; Year Type: Dry
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
STKN-026
Boundary1
Boundary2
NAA
EBC2
Alt4A

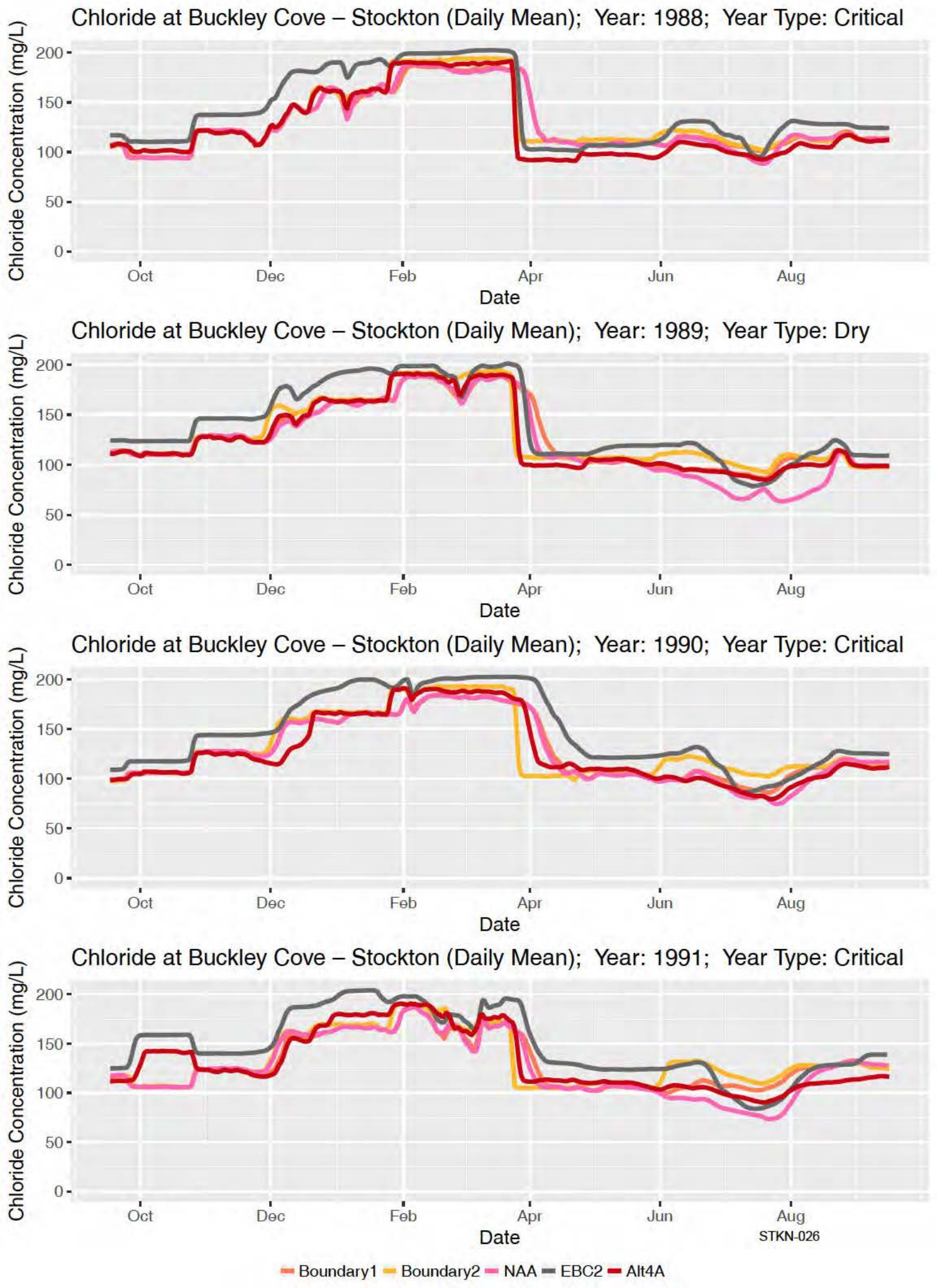

Chloride at Stockton's Intake (Daily Mean); Year: 1988; Year Type: Critical
Chloride at Stockton's Intake (Daily Mean); Year: 1989; Year Type: Dry
Chloride at Stockton's Intake (Daily Mean); Year: 1990; Year Type: Critical
Chloride at Stockton's Intake (Daily Mean); Year: 1991; Year Type: Critical
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
STKN-026
Boundary1
Boundary2
NAA
EBC2
Alt4A


Chloride at Buckley Cove – Stockton (Daily Mean); Year Type: Critical
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Buckley Cove – Stockton (Daily Mean); Year Type: Dry
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Buckley Cove – Stockton (Daily Mean); Year Type: Normal
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Buckley Cove – Stockton (Daily Mean); Year Type: Wet
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
STKN-026
Boundary1
Boundary2
NAA
EBC2
Alt4A


Chloride at Buckley Cove – Stockton (Daily Mean); Year: 1976; Year Type: Critical
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Buckley Cove – Stockton (Daily Mean); Year: 1977; Year Type: Critical
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Buckley Cove – Stockton (Daily Mean); Year: 1978; Year Type: Normal
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Buckley Cove – Stockton (Daily Mean); Year: 1979; Year Type: Normal
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
STKN-026
Boundary1
Boundary2
NAA
EBC2
Alt4A


Chloride at Buckley Cove – Stockton (Daily Mean); Year: 1980; Year Type: Normal
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Buckley Cove – Stockton (Daily Mean); Year: 1981; Year Type: Dry
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Buckley Cove – Stockton (Daily Mean); Year: 1982; Year Type: Wet
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Buckley Cove – Stockton (Daily Mean); Year: 1983; Year Type: Wet
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
STKN-026
Boundary1
Boundary2
NAA
EBC2
Alt4A


Chloride at Buckley Cove – Stockton (Daily Mean); Year: 1984; Year Type: Wet
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Buckley Cove – Stockton (Daily Mean); Year: 1985; Year Type: Dry
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Buckley Cove – Stockton (Daily Mean); Year: 1986; Year Type: Wet
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Buckley Cove – Stockton (Daily Mean); Year: 1987; Year Type: Dry
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
STKN-026
Boundary1
Boundary2
NAA
EBC2
Alt4A


Chloride at Buckley Cove – Stockton (Daily Mean); Year: 1988; Year Type: Critical
Chloride at Buckley Cove – Stockton (Daily Mean); Year: 1989; Year Type: Dry
Chloride at Buckley Cove – Stockton (Daily Mean); Year: 1990; Year Type: Critical
Chloride at Buckley Cove – Stockton (Daily Mean); Year: 1991; Year Type: Critical
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
STKN-026
Boundary1
Boundary2
NAA
EBC2
Alt4A

Appendix F

Calculated residence times for Delta inflows under various operational scenarios

APPENDIX F: Calculated residence times for Delta inflows

Month	Water Year Type	EBC2	NAA	B1	B2	Alt 4A	Percent increase from EBC2 to B1	Percent increase from EBC2 to B2	Percent increase from EBC2 to Alt4A
October	Dry	28	26.6	35.8	34.4	31.6	28%	23%	13%
November	Dry	32.3	32.3	36.5	40.2	38.6	13%	24%	20%
December	Dry	27.6	28.3	30.8	32.3	31.3	12%	17%	13%
January	Dry	31	31.7	32.9	35.9	34.2	6%	16%	10%
February	Dry	27.3	26.9	28.9	29.3	30.7	6%	7%	12%
March	Dry	24.2	24	26.4	26.1	27	9%	8%	12%
April	Dry	22.3	22.8	24.9	24.9	24.9	12%	12%	12%
May	Dry	38.2	39.3	37.1	40	39.2	-3%	5%	3%
June	Dry	36.4	36.9	37.9	40.1	37.8	4%	10%	4%
July	Dry	27.7	28.7	34.4	35.6	34.2	24%	29%	23%
August	Dry	23.2	26.7	31.1	31.8	30.9	34%	37%	33%
September	Dry	27.8	31.2	36.3	35.1	34.3	31%	26%	23%

Month	Water Year Type	EBC2	NAA	B1	B2	Alt 4A	Percent increase from EBC2 to B1	Percent increase from EBC2 to B2	Percent increase from EBC2 to Alt4A
October	Critical	32.7	32.3	39	39	37.1	19%	19%	13%
November	Critical	36.8	37.3	41.2	44.4	41.4	12%	21%	13%
December	Critical	35.5	37	39.7	42.2	38	12%	19%	7%
January	Critical	32.5	33.4	34.7	36.6	33.4	7%	13%	3%
February	Critical	35.6	33.9	36.2	37.1	36.5	2%	4%	3%
March	Critical	36	34.7	36.5	37.4	38.4	1%	4%	7%
April	Critical	36.3	36.4	38	39.2	38.6	5%	8%	6%
May	Critical	48.8	48	47.6	49.6	48.8	-2%	2%	0%
June	Critical	44.7	44.8	45.1	46.4	44	1%	4%	-2%
July	Critical	31.5	35.7	39	39.7	36.2	24%	26%	15%
August	Critical	29.4	34.9	36	37.5	34.5	22%	28%	17%
September	Critical	35.4	39.5	38.4	39.8	36.3	8%	12%	3%

Month	Water Year Type	EBC2	NAA	B1	B2	Alt 4A	Percent increase from EBC2 to B1	Percent increase from EBC2 to B2	Percent increase from EBC2 to Alt4A
October	Normal	31.6	31.6	39.6	40.2	38.1	25%	27%	21%
November	Normal	34.5	35.2	41	44.6	43.1	19%	29%	25%
December	Normal	31	30.9	36.7	38	35.9	18%	23%	16%
January	Normal	13.6	13.6	14.5	14.7	14.4	7%	8%	6%
February	Normal	8.2	8	8.5	8.5	8.6	4%	4%	5%
March	Normal	7.6	7.1	7.6	7.6	7.8	0%	0%	3%
April	Normal	13.9	13.3	14.7	14.7	14.8	6%	6%	6%
May	Normal	20.5	20.6	22.3	22.2	21.8	9%	8%	6%
June	Normal	23.8	25.7	27	28.5	27.5	13%	20%	16%
July	Normal	23.9	25.2	30.5	32.4	30.5	28%	36%	28%
August	Normal	23.8	24.2	32.8	32.4	30.2	38%	36%	27%
September	Normal	25.8	24.9	36.2	33.1	31.8	40%	28%	23%

Month	Water Year Type	EBC2	NAA	B1	B2	Alt 4A	Percent increase from EBC2 to B1	Percent increase from EBC2 to B2	Percent increase from EBC2 to Alt4A
October	Wet	24.1	25.6	34.1	33.4	31.5	41%	39%	31%
November	Wet	19.1	19.8	22.9	23.4	22.8	20%	23%	19%
December	Wet	8	7.5	8	7.8	8	0%	-3%	0%
January	Wet	7.1	6.3	6.7	6.6	6.8	-6%	-7%	-4%
February	Wet	6.2	5.6	5.9	5.9	6.1	-5%	-5%	-2%
March	Wet	4.1	3.8	3.9	3.9	4.1	-5%	-5%	0%
April	Wet	5.7	5.4	5.7	5.6	5.7	0%	-2%	0%
May	Wet	10.2	10.3	11	10.8	10.8	8%	6%	6%
June	Wet	14.1	15.9	17.4	17.7	17.5	23%	26%	24%
July	Wet	16.4	18.7	21.6	22.9	21.8	32%	40%	33%
August	Wet	21.1	22	29.1	29.3	27.1	38%	39%	28%
September	Wet	20.7	20.6	31.3	28.2	25.2	51%	36%	22%

Appendix G

Exponent comment letter for City of Stockton

Exponent®

EXTERNAL MEMORANDUM

TO: Robert Granberg, P.E., City of Stockton
Kelley Taber, Somach Simmons & Dunn

FROM: Susan Paulsen, Ph.D., P.E.

DATE: January 30, 2017

PROJECT: 1607644.000

SUBJECT: Technical Comments on the California WaterFix Project and Associated Final Environmental Impact Report and Environmental Impact Statement (FEIR/EIS)

At the request of the City of Stockton (the City), Exponent is pleased to submit comments on the California WaterFix Project (the Project) and Associated Final Environmental Impact Report/Environmental Impact Statement (FEIR/EIS).

The City retained Exponent to assist in evaluating the WaterFix Project and the associated FEIR/EIS. Exponent has also reviewed the prior comments on the Draft and Recirculated Draft Environmental Impact Report/Environmental Impact Statement (DEIR/EIS, RDEIR/EIS, respectively) submitted by the City. As detailed below, Exponent's analysis of the WaterFix Project and the FEIR/EIS relies on a review of the FEIR/EIS documentation as well as model input and output files for the various alternative operational scenarios that have been provided by the California Department of Water Resources (DWR).[1]

I. Introduction and Summary of Findings

A key concern expressed by the City in its comments on the DEIR/EIS and RDEIR/EIS was DWR's use of model results from a location known as "Buckley Cove" to evaluate water quality at the City's drinking water intake. DWR previously asserted, and the FEIR/FEIS continues to assert, that model results at the Buckley Cove location are representative of water quality at the City's intake location. However, as explained in detail below, Buckley Cove is over eight miles from the City's drinking water intake, and both the composition and quality of water at Buckley Cove differ significantly from the composition and quality of water at the City's intake. For these reasons, model results from Buckley Cove are not representative of and cannot be used to

[1] Exponent has undertaken a diligent effort to identify the components of the FEIR/EIS that are relevant to the City's comments, and we have thoroughly reviewed the FEIR/EIS response to comments and sections/references cited in the response to the City's comments; however, given the size of the FEIR/EIS and the time available to comment, we have not reviewed the entire FEIR/EIS.

accurately assess water quality changes at the City's intake. Because the FEIR/EIS did not evaluate water quality impacts at the location of the City's drinking water intake, Exponent used DWR's model input files and the Delta Simulation Model II (DSM2) to obtain model results to describe water quality impacts at the City's intake location. Exponent has concluded that the Project will result in substantial changes in the source and quality of water present at the City's drinking water intake on the San Joaquin River. Water quality changes relative to existing conditions at the City's intake will result in part from the export from the northern Delta of greater volumes of water, and greater volumes of high quality Sacramento River water. Under most operational scenarios, a greater fraction of the water at the City's intake will come from the San Joaquin River rather than the Sacramento River, and higher salinity and other water quality changes will occur as a result.

Water quality impacts to the City's water supply will result from the implementation of the Project's preferred operational scenario (Alternative 4A), as well as from other scenarios within the operational range of the Project. DSM2 model results show that under the Project's Alternative 4A scenario, the chloride concentration at the City's intake will exceed the City's threshold of 110 mg/L more frequently than under existing conditions. For other operational scenarios, impacts are even greater.[2]

The FEIR/EIS does not disclose the impacts of the project to the City's drinking water supply in several additional ways. Namely, the FEIR/EIS uses an inappropriate existing condition baseline to model water quality impacts in the Delta; it does not disclose water quality changes modeled by DWR over the full operational range of the Project; and, as mentioned previously, it does not model water quality at the City's drinking water intake. In addition, the presentation of only monthly average water quality data in the FEIR/EIS masks salinity increases that occur over shorter time intervals and that must be assessed to evaluate water quality impacts at the City's intake, which operates on an hourly basis, not a monthly average basis. Lastly, the FEIR/EIS does not adequately address potential for increases in *Microcystis* blooms, which are a risk to humans and wildlife. The FEIR uses a whole-Delta analysis approach which does not consider area-specific changes as they relate to beneficial use.

II. Background

The City is located on the San Joaquin River in the southeast Sacramento-San Joaquin Delta (the Delta). The City of Stockton Municipal Utilities Department (COSMUD) serves approximately 55 percent of the total City of Stockton Municipal and Industrial (M&I) demand, with the remaining M&I demand met by the California Water Service Company and San

[2] Due to time limitations associated with the very short review period for the FEIR/EIS, Exponent's technical analysis was limited to chloride and *Microcystis*, as well as changes in the hydrodynamics and residence times of the Delta indicated by the modeling. As noted in the City's comments on the DEIR/EIS and RDEIR/EIS, the City is also concerned about the potential for degradation of its water supply due to WaterFix-related increases in other water quality constituents, such bromide, nitrate and pesticides, and increased temperature, which could affect its compliance with wastewater discharge permit requirements. Based on Exponent's experience, the modeling and evaluation of chloride, and changes in the distribution and residence time of water within the Delta, Exponent would expect degradation for these water quality constituents of concern.

Joaquin County. In 2012, the COSMUD began obtaining a portion of its potable water supply from the San Joaquin River to establish a long-term reliable water supply.[3] Currently, the COSMUD obtains approximately 38 percent of its water supply from the San Joaquin River, with purchased water and groundwater providing the remaining supply. The volume of water extracted from the San Joaquin River is projected to increase over time, such that by 2035 water from the river intake will constitute about 50 percent of the COSMUD's supply. The current operational capacity of the intake is 30 million gallons per day (MGD), and the projected capacity in 2035 is 90 MGD. In 2015, the COSMUD's potable and raw water demand was approximately 26,300 acre-feet/year (ac-ft/yr), while the COSMUD's projected demand in 2035 is expected to be over 40,000 ac-ft/yr. COSMUD's intake pump station facility is located on the San Joaquin River as shown in Figure 1, which also shows the location of Buckley Cove.

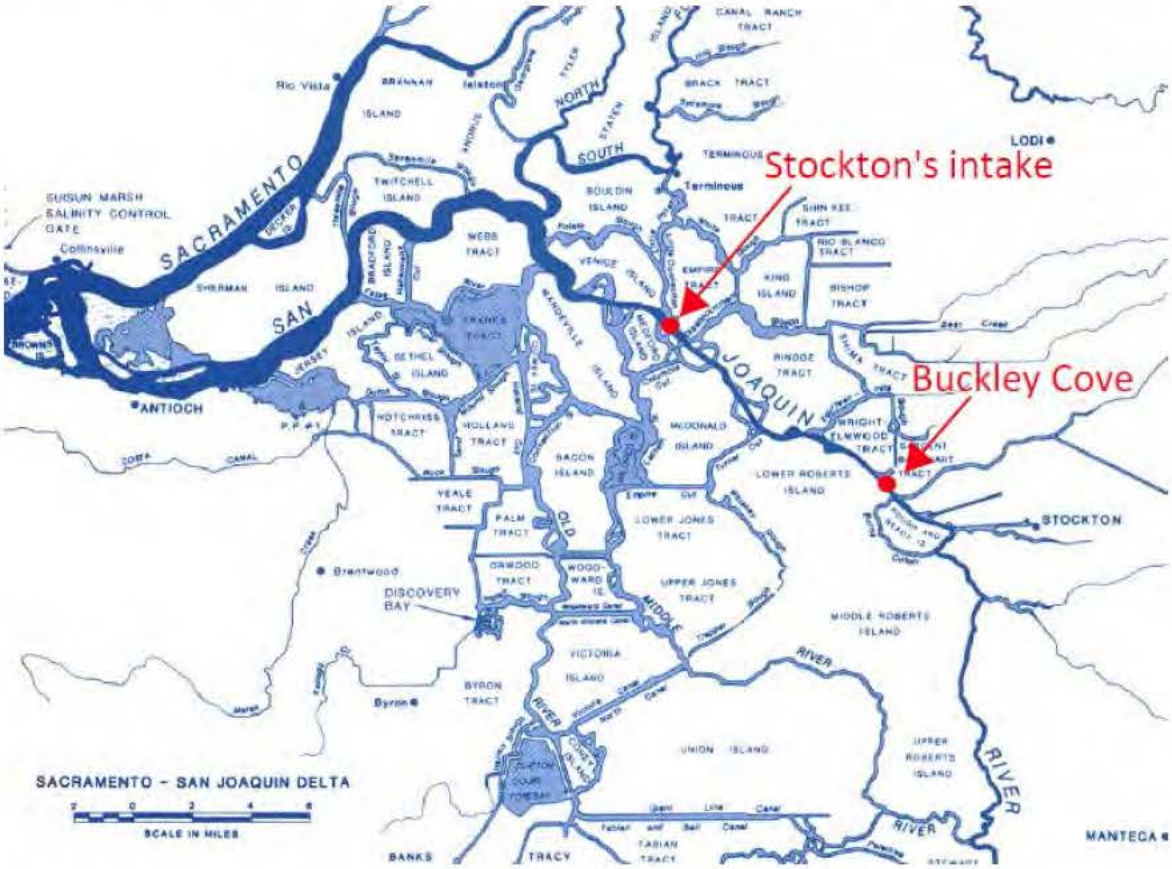


Figure 1. Location of Buckley Cove and Stockton's intake. Map adapted from DWR Sacramento-San Joaquin Delta Atlas (1995), available at http://baydeltaoffice.water.ca.gov/DeltaAtlas/.

[3] Brown and Caldwell. 2016. City of Stockton 2015 Urban Watershed Management Plan. July.

III. Qualifications

I have 25 years of experience with projects involving hydrology, hydrogeology, hydrodynamics, aquatic chemistry, and the environmental fate of a range of constituents. I have knowledge of California water supply issues, including expertise in California's Bay-Delta estuary. My expertise includes designing and implementing field and modeling studies to evaluate groundwater and surface water flows, the source and distribution of water within the Delta, and contaminant fate and transport. I have also designed studies using one-dimensional hydrodynamic models, three-dimensional computational fluid dynamics models, longitudinal dispersion models, and Monte Carlo stochastic models to evaluate flows, water quality, and mixing within the Delta, and I have directed modeling studies and utilized the results of numerical modeling to evaluate surface and ground water flows. My curriculum vitae is provided as Attachment 1.

IV. Methods for Evaluating Impact on the City's Water Supply

The City asked Exponent to evaluate whether the proposed Project diversions will adversely impact the supply and quality of water available to the City from the Delta. In conducting this work, Exponent evaluated model runs performed by DWR, performed DSM2 modeling using DWR's model input files to obtain output not provided by DWR, and reviewed DWR's assessment of the proposed Project. Exponent obtained from DWR the modeling input and output files from DSM2, which was used to simulate hydrodynamics and water quality throughout the Delta for the proposed Project for a range of model conditions and operational scenarios. In addition to describing hydrodynamics and water quality, DSM2 can be used to perform "volumetric fingerprinting" to track inflows to the Delta throughout the model domain. Volumetric fingerprinting can be used to "tag" inflows to the Delta and to determine the source of water within the estuary. Because the model input and output files provided to the public by DWR did not include volumetric fingerprinting results, Exponent used the model input files provided by DWR and DSM2 to perform volumetric source fingerprinting to determine the location and time that flows from various sources entered the Delta. Exponent also used the model to evaluate hydrodynamics, water quality, and source fingerprints at the City's drinking water intake, since DWR did not analyze these quantities at that location. Exponent's analysis was performed for each of the Project scenarios and for the existing condition model run described below.

The salinity of water in the Delta has historically been expressed as electrical conductivity (EC), total dissolved solids (TDS), or chloride. Many salinity measurements in the Delta are made using EC, and EC is widely used as a surrogate for salinity. Guivetchi (1986)[4] derived linear relationships between EC, TDS, and chloride for various locations in the Delta and generated mathematical equations that can be used to convert one type of salinity measurement to another. DSM2 provides salinity as EC which is converted to chloride using these relationships.[5] For the

[4] Guivetchi, K. 1986. Salinity Unit Conversion Equations. Memorandum. California Department of Water Resources. June 24, 1986. Accessed at: http://www.water.ca.gov/suisun/facts/salin/index.cfm.

[5] See http://www.water.ca.gov/suisun/facts/salin/index.cfm for additional details.

City, the relationship used to convert EC to chloride for all water years was as follows: chloride [mg/L] = -28.9 + (0.23647*EC [µmhos/cm]). Thus, at the City's intake location, a chloride concentration of 110 mg/L (ppm) is assumed to correspond to an EC of approximately 587 µS/cm.

DSM2 produces data on 15-minute intervals. The time period modeled in DSM2 for most WaterFix analyses spans water year (WY) 1975–WY 1991; however, the model results from WY 1975 are considered model "spin-up" time and are excluded from analyses. Exponent's analyses are based on the 16-year record from WY 1976 to WY 1991.

Additionally, hydrology in the Delta varies from year to year. Water years in the Delta, defined as October through September of the following year, are classified as wet, above normal, below normal, dry, or critical. DWR determines the water year type by calculating a water year index number, which accounts for both the hydrology of the current year and the previous year's index.[6] By this classification system, the water years modeled in DSM2 by DWR fall into the following categories:

- Critical: 1976, 1977, 1988, 1990, 1991
- Dry: 1981, 1985, 1987, 1989
- Below Normal: 1979
- Above Normal: 1978, 1980
- Wet: 1982, 1983, 1984, 1986

Because there is only one Below Normal water year in the modeled record, Exponent combined results for the Below Normal year with model results for Above Normal water years for the purposes of analyzing the WaterFix model runs; the water year type for water years 1978–1980 is referred to from here forward as "Normal." In some analyses, data are averaged by water year type. This is done by aggregating data from those specific months or water year types and calculating an average.

In this analysis, source water fingerprints were used to determine both the location and time at which freshwater flows entered the Delta. Five inflows are typically considered in DSM2 for fingerprinting purposes: the Sacramento River, the San Joaquin River, east-side streams, agricultural return flows, and flows from the Bay at Martinez. For a given date and location, DSM2 was used to calculate the percentage contribution from each of the respective inflow sources.

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[6] Water years in the Delta, defined as October through September of the following year, are classified as wet, above normal, below normal, dry, or critical. DWR determines the water year type by calculating a water year index number, which accounts for both the hydrology of the current year and the previous year's index. Water year classifications were obtained from the California Data Exchange Center, accessed at http://cdec.water.ca.gov/cgi-progs/iodir/WSIHIST.

Because the water quality of the various water sources to the Delta differs, source water fingerprints provide information to explain and interpret water quality data within the Delta. The EC of freshwater inflows to the Delta is lower than that of water that enters the estuary from San Francisco Bay, which includes seawater. The Sacramento River and east side streams are typically the freshest (i.e., have the lowest salinity), while the San Joaquin River and agricultural return flows have higher salinity. Tidal inflows to the Delta at Martinez have the highest salinity levels, as they include seawater in all but the largest flood flows. For example, in 2015, average measured EC in the Sacramento River at Freeport was 168 µS/cm (equivalent to a TDS of 103 mg/L[7]), while the average EC in the San Joaquin River at Vernalis was 595 µS/cm (343 mg/L TDS). The average EC at Martinez (downstream boundary of Delta) was 26,384 µS/cm (17,882 mg/L TDS). By contrast, the salinity of seawater is approximately 50,000 µS/cm (35,000 mg/L TDS).[8,9]

DSM2 has been widely used by DWR and others to analyze the source of water within the Delta for various time periods and conditions, and for both observed and hypothetical conditions (e.g., to evaluate the impacts of potential operational changes). Source water fingerprints are presented in FEIR/EIS Appendix 8D for various locations in the Delta under different modeled scenarios; however, there are no source fingerprints in Appendix 8D for Stockton's intake.

Exponent produced volumetric fingerprints for both Buckley Cove and the City's intake under the range of Project operational scenarios presented in the FEIR/EIS. Those scenarios included existing biological conditions 1 (EBC1, which includes current sea levels and excludes the Fall X2 requirement[10]), a no action alternative (NAA), Boundary 1, Boundary 2, and the preferred Project Alternative 4A. Exponent also evaluated the existing biological conditions 2 model run (EBC2, which includes current sea levels and the Fall X2 requirement).

Exponent evaluated modeled salinity data at Buckley Cove and the City's intake under the EBC2, NAA, Boundary 1, Boundary 2, and Alternative 4A scenarios. The modeled salinity data were used to evaluate the effects of the Project on the water quality conditions at the City's intake in the San Joaquin River. The City typically employs a chloride threshold of 110 mg/L at the intake for diverting water that is useable for M&I supply; if the chloride concentration exceeds 110 mg/L, the City must generally use an alternative water supply, such as purchased water or groundwater. Because the City is able to turn its intake on and off over relatively short timescales, Exponent evaluated the number of one-hour intervals (added together and reported

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[7] EC to TDS conversions were calculated using the method of Guivetchi 1986, which presented salinity conversion factors for various locations in the Delta.

[8] Salinity (EC) data were obtained from CDEC at http://cdec.water.ca.gov/.

[9] See Attachment 2: Exponent (2016). Report on the Effects of the Proposed California WaterFix Project on Water Quality at the City of Brentwood. Exhibit Brentwood-102 of the WaterFix Change Petition Proceedings. August 30, 2016.

[10] Fall X2 is defined as the distance in kilometers from the Golden Gate Bridge to the point where salinity on the bottom is 2 parts per thousand (ppt). DWR and U.S. Bureau of Reclamation (Reclamation) are required to provide sufficient outflow during fall months to establish the X2 position at specified locations to improve habitat for Delta smelt.

in terms of "equivalent" days) that the water in the San Joaquin River exceeded 110 mg/L chloride under various water year types and operational scenarios. Specifically, Exponent averaged the 15-minute DSM2 output to calculate hourly average chloride concentrations and compared hourly concentrations to the threshold value. The number of hourly averaged data points below the 110 mg/L chloride threshold were summed, converted to days (i.e., 24 one-hour intervals below the threshold became one "equivalent" day), and averaged by water year type.

V. Findings

These water quality and water supply evaluations are organized into eight distinct findings, presented below.

1. The FEIR/EIS Does Not Evaluate Water Quality at Stockton's Intake

The FEIR does not assess the expected water quality impacts at the City's drinking water supply intake from operation of the Project. Rather, the FEIR/EIS discusses model results describing water quality at Buckley Cove in the San Joaquin River and purports to use model results from Buckley Cove to assess the range of water quality impacts expected at the City's water supply intake;[11] however, the City's intake is located more than eight miles downstream of Buckley Cove, and a number of sloughs and waterways join the San Joaquin River downstream of Buckley Cove. These sloughs and waterways (see Figure 1) carry water from the Mokelumne River and other sources to the San Joaquin River. For this reason, water supply and water quality conditions are significantly different at the City's drinking water intake than at Buckley Cove.

As described in the Methods section of these comments, Exponent conducted DSM2 trials to evaluate the "source fingerprints" of water at Buckley Cove and at the City's drinking water intake. These results indicate that water at Buckley Cove has a markedly different composition than water at the City's intake. For example, source water fingerprints describing existing conditions (NAA and EBC2 scenarios) in Figure 2, show that Sacramento River water is present at the City's intake throughout the year in concentrations ranging from 30 percent (in April) to more than 90 percent (in July, August, and December). The San Joaquin River constitutes between 0 and 50 percent of the water at the City's intake, and agricultural drainage constitutes between 5 and 15 percent (Figure 2). In contrast, water at Buckley Cove comprises primarily 45 to nearly 100 percent San Joaquin River water during all months of dry water years (Figure 3) with small contributions from agricultural return flows (up to 30 percent on average) and Sacramento River water (up to 20 percent on average) in the summer months. During October to

[11] The FEIR/EIS states, "For municipal intakes located in the Delta interior, assessment locations at Contra Costa Pumping Plant No. 1 and Rock Slough are taken as representative of Contra Costa's intakes at Rock Slough, Old River and Victoria Canal, and the assessment location at Buckley Cove is taken as representative of the City of Stockton's intake on the San Joaquin River" (FEIR/EIS, p. 8-165).

May, 80 to 95 percent of the water at Buckley Cove originates from the San Joaquin River. During May to September, the San Joaquin River fraction falls to approximately 50 percent, with up to 30 percent agricultural drainage and 20 percent Sacramento River water.

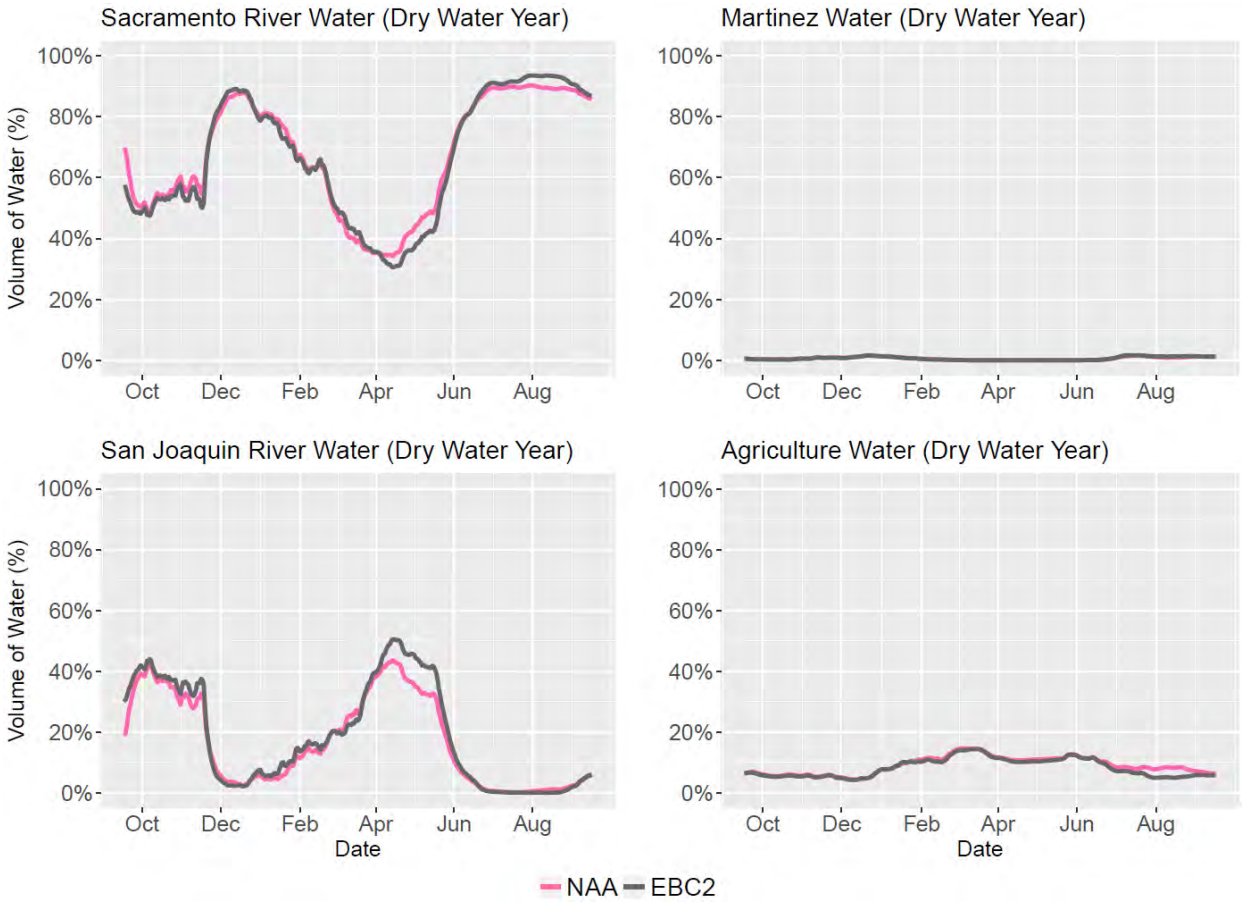

Figure 2. Source water fingerprint at Stockton's intake under the NAA and EBC2 baseline conditions during dry water years (1981, 1985, 1987, and 1989)

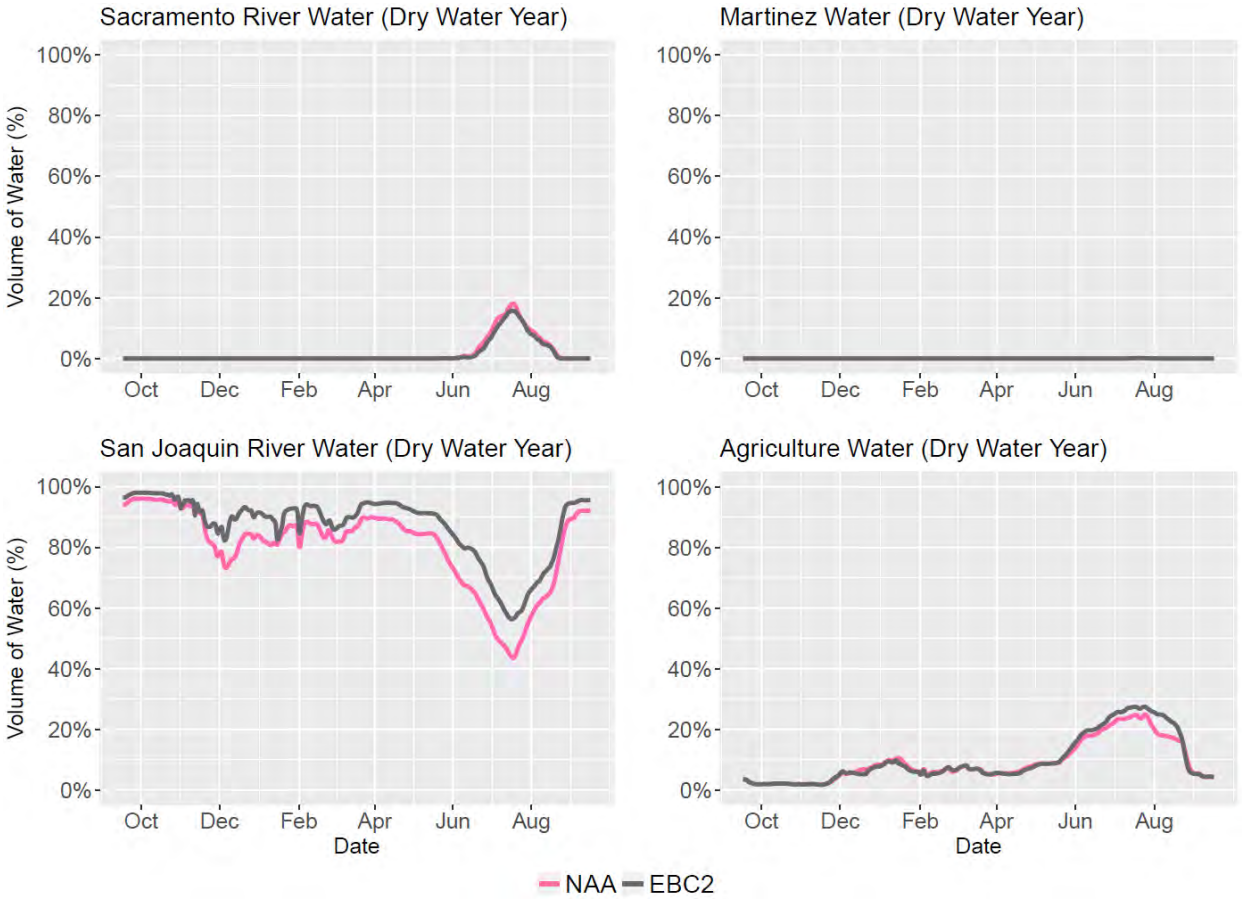

Figure 3. Source water fingerprint at Buckley Cove under the NAA and EBC2 baseline conditions during dry water years (1981, 1985, 1987, and 1989)

The differences in source water make-up between Buckley Cove and the City's intake are observed under all water year types. In nearly every water year during the modeled period (1976 to 1991), the modeled percentage of Sacramento River water at the City's intake (up to 95 percent) was significantly greater than at Buckley Cove (up to 40 percent) (Figure 4). Source fingerprints at the City's intake and Buckley Cove for all other water year types are presented in Attachment 3.

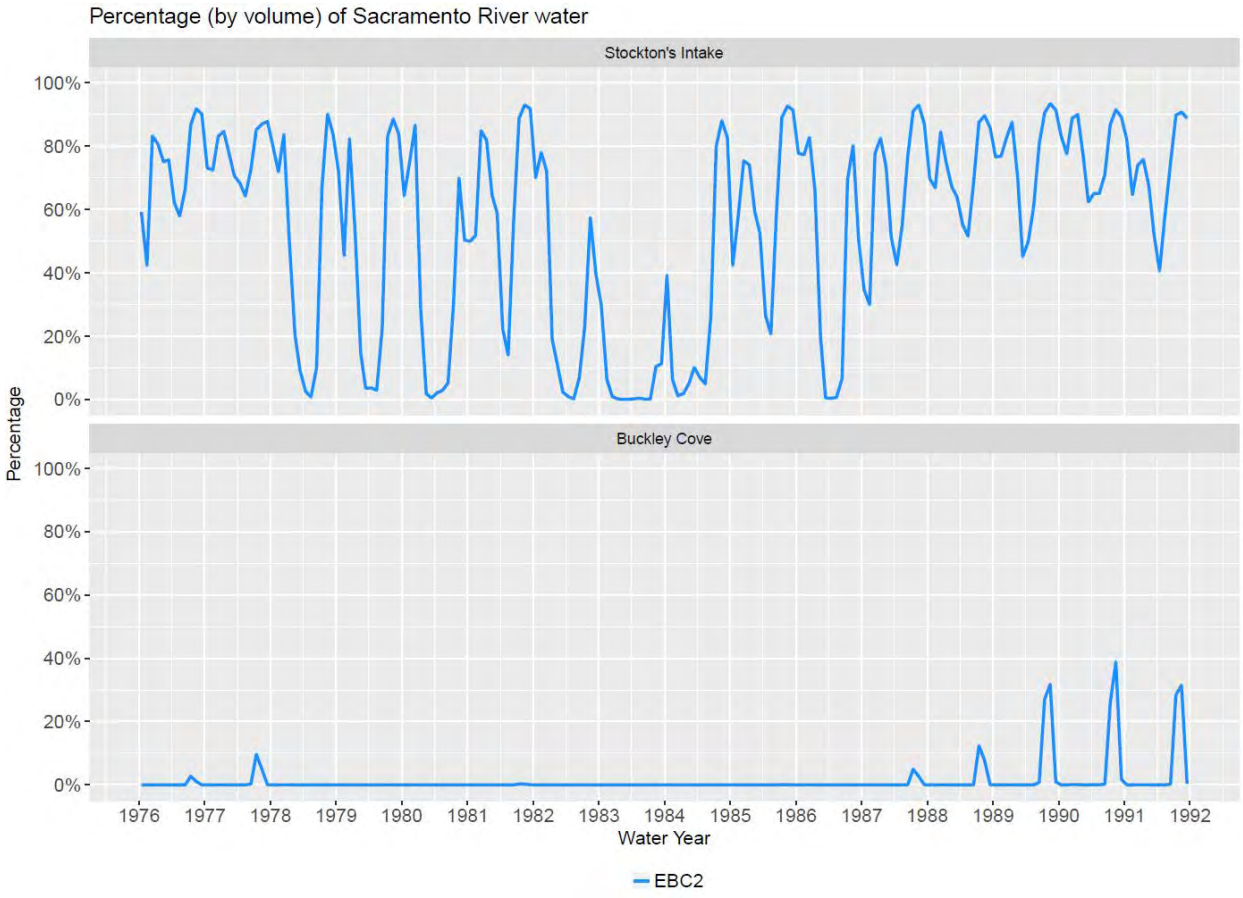

Figure 4. Percentage (by volume) of Sacramento River water at Stockton's intake (top panel) and Buckley Cove (bottom panel) from 1976 to 1991 under existing condition (EBC2)

Water quality is also notably different at the City's intake than at Buckley Cove. As discussed in the methods section above, the yearly average salinity of the San Joaquin River is higher (343 mg/L TDS in 2015) than the Sacramento River (103 mg/L TDS in 2015); because the Sacramento River represents a larger fraction of the water at the City's intake (up to 90 percent in July, August, and December), the salinity at the City's drinking water intake is generally lower than at Buckley Cove. Figure 5 and Figure 6 show the average simulated chloride concentration at the City's intake and at Buckley Cove, respectively, during dry water years under the EBC2 baseline. During dry water years, the average chloride concentration at the City's intake varies from 25 mg/L during June to 100 mg/L during March (Figure 5). In contrast, the average chloride concentration at Buckley Cove varies from approximately 80 mg/L during October to 180 mg/L during February and March (Figure 6). Chloride concentration model results for other water year types are presented in Attachment 4.

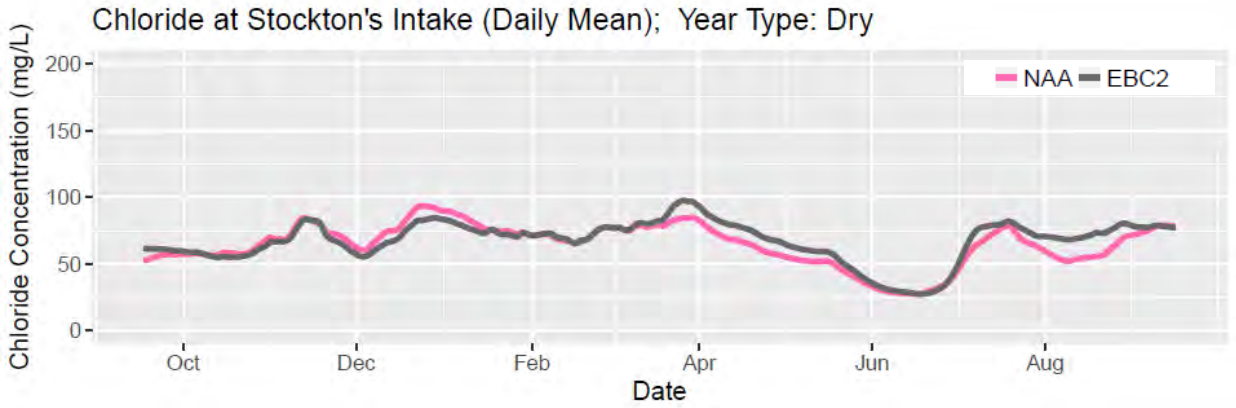

Figure 5. Simulated concentration of chloride at the City's intake during dry water year under baseline conditions NAA and EBC2

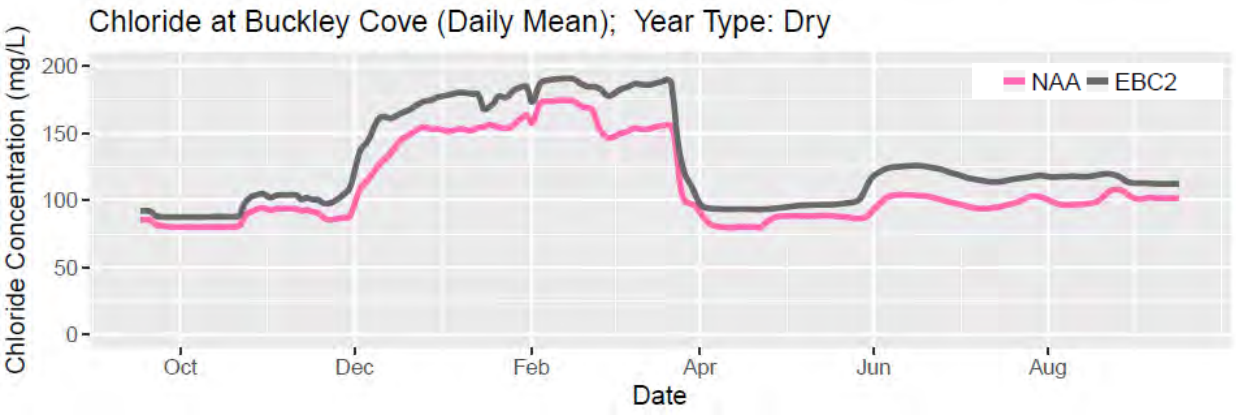

Figure 6. Concentration of chloride at the Buckley Cove during a dry water year under baseline conditions NAA and EBC2

Although the FEIR/EIS asserts that water quality conditions at Buckley Cove are representative of Stockton's water supply, perhaps due to the close proximity of Buckley Cove to the City proper, this conclusion is erroneous. DWR's response to the City's comment pointing out the discrepancy states that "the effects of alternatives at the locations assessed are considered representative of the effects of the alternatives in various portions of the Delta as a whole," and DWR asserts that water quality conditions at Buckley Cove are representative of the "eastern Delta, where the City's intake is located."[12] As discussed above, this assumption in the FEIR/EIS is incorrect, as the conditions at Buckley Cove and within other portions of the eastern Delta interior can vary significantly from the City's intake location. As a result, water quality data modeled at Buckley Cove do not represent the range of impacts that are expected at the City's water supply intake under the proposed Project.

[12] FEIR/EIS, RECIRC Comment Responses Letters 2400-2499, pp. 156–157.

2. The FEIR/EIS Model Scenarios do not Describe Existing Conditions or Use the Appropriate Baseline for the Impact Analysis

The FEIR/EIS model utilizes the EBC1 existing condition to evaluate Project impacts under the preferred Alternative 4A scenario; however, this baseline is flawed and inappropriate as it does not include the Fall X2 provision of the 2008 U.S. Fish and Wildlife Service Biological Opinion (2008 BiOp) that governs CVP/SWP operations.[13] Failing to include the Fall X2 provision in EBC1 increases the modeled salinity of the existing condition, which in turn makes the water quality impacts of Alternative 4A appear less significant than they would with the appropriate baseline. Because the 2008 BiOp presents the requirement to manage Delta outflows and operate water storage and releases to achieve the Fall X2 provision, the existing condition evaluated to assess Project impacts should reflect operations conducted to meet this requirement. DWR previously released modeling that utilized a baseline condition designed to meet Fall X2: the EBC2 scenario, presented in the 2013 Revised Administrative Draft; however, the 2013 DEIR/EIS, the 2015 RDEIR/EIS, and the 2016 FEIR/EIS use only the EBC1 scenario.

Table 1 shows that the number of days existing source water at Stockton's intake exceeds a chloride concentration of 110 mg/L is greater under the EBC1 scenario than under the EBC2 scenario for most water year types. For example, the average number of days in a dry water year that the chloride concentration at the City's intake exceeds 110 mg/L is 58 under the EBC1 baseline and 31 under the EBC2 scenario (Table 1). Thus, the baseline water quality condition used by DWR in the FEIR/EIS (EBC1) is more saline as a result of the failure to operate to Fall X2 conditions. Because the EBC2 scenario more appropriately represents an accurate baseline condition by adhering to the Fall X2 requirement, Exponent has evaluated Project impacts using the EBC2 baseline condition.

By failing to use the EBC2 scenario as the existing conditions scenario, the FEIR/EIS does not accurately disclose the magnitude of water quality impacts that would occur from the Project relative to existing conditions.

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[13] On p. 4-6, the FEIR/EIS states that the Fall X2 salinity requirement was not included in the existing condition baseline since "[a]s of spring 2011, when a lead agency technical team began a new set of complex computer model runs in support of this EIR/EIS, DWR determined that full implementation of the Fall X2 salinity standard as described in the 2008 USFWS BiOp was not certain to occur within a reasonable near-term timeframe because of a recent court decision and reasonably foreseeable near-term hydrological conditions. As of that date, the United States District Court has not yet ruled in litigation filed by various water users over the issue of whether the delta smelt BiOp had failed to sufficiently explain the basis for the specific location requirements of the Fall X2 action, and its implementation was uncertain in the foreseeable future."

After the U.S. District Court's ruling in March 2011 that the BiOp insufficiently explained the basis for Fall X2 location requirements, in March 2014—almost three years before the issuing of the FEIR/EIS—the Ninth Circuit U.S. Court of Appeals overturned the District Court's ruling, finding that the BiOp *did* sufficiently explain the basis of the specific Fall X2 location requirements (*San Luis vs. Jewell*, Case No. 11-15871). Thus, the pending litigation referred to in the FEIR/EIS has long since been resolved, and the Fall X2 requirements should have been included (together with the other BiOp requirements that were included) in the baseline existing condition.

Table 1. Number of days that water at Stockton's intake exceeds 110 mg/L chloride under three modeled baseline scenarios according to water year type

	No. of days per year that water at Stockton's intake exceeds a chloride threshold of 110 mg/L		
Water Year Type	EBC1 Existing Condition **Does not** include Fall X2 **No** sea-level rise	EBC2 Existing Condition **Includes** Fall X2 **No** sea-level rise	NAA baseline condition **Includes** Fall X2 **15-cm** sea-level rise
Critical	50	35	50
Dry	58	31	36
Normal	44	36	44
Wet	11	11	11

3. The FEIR/EIS Does Not Fully Characterize the Entire Range of Expected Project Operations or Associated Water Quality Impacts.

The FEIR/EIS does not characterize the water quality and water supply impacts that would be expected over the full range of the Project's proposed operational scenarios. The FEIR/EIS does not fully evaluate the water quality impacts of Boundary 1 or Boundary 2, which are representative of proposed operations of the Project, as DWR has indicated in testimony to the State Water Resources Control Board (SWRCB) in the WaterFix water rights change petition proceedings.[14] In the water rights proceedings, DWR disclosed that under its intended Adaptive Management and Monitoring Program (AMMP) Project diversion and conveyance facility operations could fall anywhere from the Boundary 1 scenario (characterized by low Delta outflow and high exports) to the Boundary 2 scenario (characterized by high Delta outflow). The FEIR/EIS assessed more than 18 different Project alternatives (Alternatives 1A, 1B, 1C, 2A, 2B, 2C, 3, 4, 5, 6A, 6B, 6C, 7, 8, 9, 4A, 2D, and 5A); Alternative 4 was also evaluated as Alternatives H1 through H4. DWR has stated that Boundary 1 and Boundary 2 are operational scenarios that fall outside the range of H1 to H4; according to DWR, Boundary 1 impacts can be assessed by examining impacts from Alternatives 1A and 3, while Boundary 2 impacts can be assessed by examining impacts from Alternatives 4H3+ and 8.[15] Table 2 shows operational scenarios that were released by the DWR in various model files in support of the Project and reviewed by Exponent. Although this list is not an exhaustive list of all files released by DWR,

[14] The FEIR/EIS states that "operation of the future conveyance facility under a possible adaptive management range represented by Boundary 1 and Boundary 2 will be consistent with the impacts discussed for the range of alternatives considered in this document" (FEIR/EIS, p. 3-288) and "Boundaries 1 and 2 were presented to the State Water Board during the water rights petition process as a means to represent a potential range of operations that could occur as a result of the proposed Adaptive Management Program" (FEIR/EIS, p. 5E-1).

[15] The FEIR/EIS states that "[c]onsistent with the goals of this analysis, the nature and severity of the impacts generally fall within the range of impacts disclosed under Alternatives 1A and 3 for Boundary 1, Alternative 4H3, Alternative 4H3+, and Alternative 8 for Boundary 2" (FEIR/EIS, p. 5E-170).

it points to the number and types of operational scenarios that were assessed and released by DWR over time.

Table 2. Exponent's record of model files released by the California Department of Water Resources in support of the California WaterFix Project

Accompanying Document	Model Files Acquired by Exponent
March 2013 Revised Administrative Draft BDCP	EBC1, EBC2, NAA (ELT, LLT), all Project alternatives, including Alternative 4 (H1, H2, H3, H4) at LLT and ELT
2013 Draft EIR/EIS	EBC1, NAA (ELT, LLT), all Project alternatives, including Alternative 4 (H1, H2, H3, H4) at LLT and ELT
2015 RDEIR/SDEIS	Updated 2013 Draft EIR/EIS model files and sensitivity analyses released. Alternative 4A (or H3+) introduced as the preferred alternative but not modeled
Draft BA model files (released January 2016, before document release)	NAA (ELT), Preferred Alternative (Alternative 4A)
Final FEIR/EIS model files (released March 2016, before document release)	NAA (ELT), Alternative 2D, Alternative 4A, Alternative 5A
WaterFix Petition (May 2016)	B1, B2, NAA, H1, H2, H3, H4

B1 = Boundary 1
B2 = Boundary 2
EBC1 = existing baseline condition without the Fall X2 standard
EBC2 = existing baseline condition including the Fall X2 standard
ELT = early long term (i.e., 2025 with 15 cm of sea level rise)
LLT = later long term (i.e., 2060 with 45 cm of sea level rise)
NAA = no action alternative

Alternatives 1A, 1B, 1C, 2A, 2B, 2C, 3, 4, 5, 6A, 6B, 6C, 7, 8, and 9 were found to have significant adverse impacts with respect to chloride concentrations at the Contra Costa Pumping Plant #1 (FEIR/EIS Figure 8-0a). Only Alternatives 4A, 2D, and 5A were found to have no significant impact/no adverse effects (FEIR/EIS Figure 8-0a). Thus, operation of the Project to Boundaries 1 and 2, which DWR states are represented by scenarios 1A, 3, and 8, would also have significant/adverse impacts.

Although Appendix 5E of the FEIR/EIS contains a highly generalized summary of modeling DWR performed to evaluate the water quality impacts of Boundary 1 and Boundary 2 (including salinity), these impacts are not assessed in the same comprehensive manner that the preferred Alternative 4A and other alternatives (including Alternatives 1A, 1B, 1C, 2A, 2B, 2C, 3, 4, 5, 6A, 6B, 6C, 7, 8, 9, 4A, 2D, and 5A) were assessed (see FEIR/EIS Chapter 8). (In addition, the Boundary 1 and Boundary 2 scenarios are not presented in the Executive Summary for the FEIR/EIS, including FEIR/EIS Table ES.4.2, which summarizes the findings for eighteen (18) individual scenarios, and finds that chloride impacts for scenarios 1A, 1B, 1C, 2A, 2B, 2C, 3, 4, 5, 6A, 6B, 6C, 7, 8, 9 are both "significant and unavoidable (any mitigation not sufficient to render impact less than significant)" and "adverse." In contrast with the information presented in Chapter 8 of the FEIR/EIS, Appendix 5E presents water quality results for a more limited number of Delta locations, for fewer water quality constituents, and in much less detail.

The model results of Appendix 5E were also not used to make the final impact assessment of the Project.[16]

4. The Water Quality Impacts of Alternative 4A at the City's Intake are Significant.

As noted in Finding 1, the FEIR/EIS does not evaluate the impacts of any of the Project alternatives, including Alternative 4A, the preferred alternative, at the location of the City's intake. DSM2 results show the impact of Alternative 4A on the City's water source make-up and water quality is markedly different from either existing conditions (EBC2) or the future no action alternative (NAA).

Modeling demonstrates that under Alternative 4A, the volume of higher quality Sacramento River water at the City's intake is expected to decrease substantially relative to the existing baseline condition (EBC2), while the volume of more saline and lower quality San Joaquin River water and agricultural flows is expected to increase. For example, during February of dry water years, DSM2 indicates the volume of Sacramento River water at the City's intake decreases from an average of 65 percent under EBC2 to 45 percent under Alternative 4A (Figure 7). During October of dry water years, on average the composition of water at the intake decreases from 55 percent Sacramento River water under EBC2 to 30 percent under Alternative 4A (Figure 7). The percentage of San Joaquin River water increases concomitantly at the City's intake. During February of dry water years, for example, the volume of San Joaquin River water increases from 15 to 40 percent (EBC2 to Alternative 4A); during October of dry years, the volume increases from 40 to 65 percent (EBC2 to Alternative 4A) (Figure 7). The volume of Sacramento River water at the City's intake also decreases under Alternative 4A for all other water year types. The water source fingerprints under the various operational scenarios for all water year types are presented in Attachment 5.

[16] Appendix 5E comprises additional modeling requested by the State Water Board for the Boundary scenarios and an additional scenario, "Scenario 2." The impact determinations made in Chapter 8 are specific to each Alternative presented in the main body of the text (i.e., 1A, 1B, 1C, 2A, 2B, 2C, 3, 4, 5, 6A, 6B, 6C, 7, 8, 9, 4A, 2D, and 5A) and do not include the Boundary scenarios.

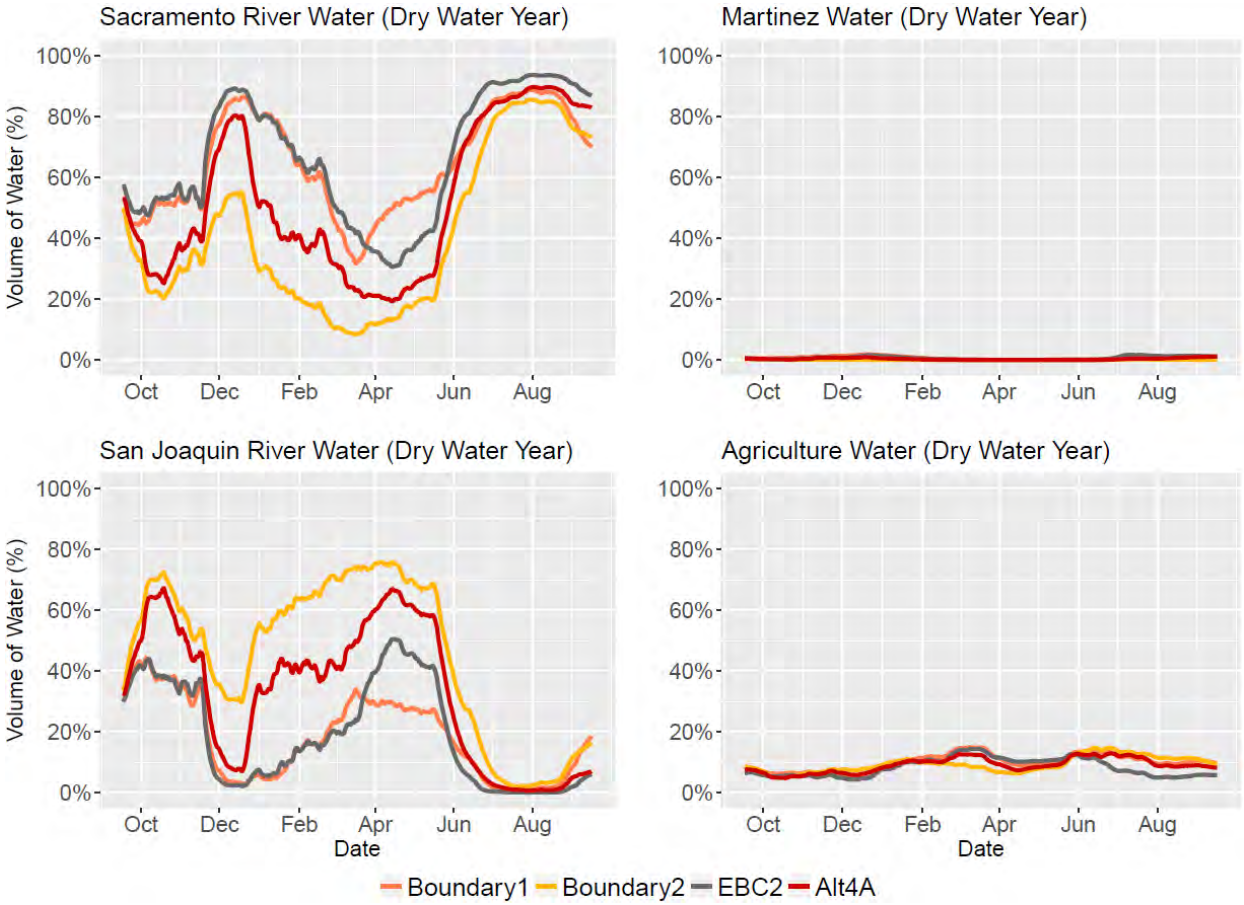

Figure 7. Source water fingerprint at Stockton's intake under the proposed California WaterFix Project scenarios during dry water year years (1981, 1985, 1987, and 1989)

Water quality impacts at the City's intake will also be significant under the Project's preferred operational scenario Alternative 4A. DSM2 results show that the number of days that chloride will exceed the City's 110 mg/L threshold during critical water years will increase from 35 days under EBC2 to 53 days under Alternative 4A (Table 3). Similarly, the number of days that chloride will exceed the 110 mg/L during dry years is simulated to increase from 31 days per year under EBC2 to 58 days per year under Alternative 4A (Table 3). This difference represents up to a 87 percent increase in the number of days that water in the San Joaquin River at the City's intake will not be useable to the City (see dry water year, Table 3). Table 4 shows the number of days per year that water at the City's intake exceeds 110 mg/L chloride for every year during the 16-year model period (1976 to 1991).

Table 3. Number of equivalent days that water at Stockton's intake *exceeds* 110 mg/L chloride under various modeled baseline scenarios according to water year type

Water Year Type	No. of days water at Stockton's intake exceeds chloride threshold of 110 mg/L					Percentage increase from EBC2 to B1	Percentage increase from EBC2 to B2	Percentage increase from EBC2 to Alt4A
	EBC2	NAA	B1	B2	Alt 4A			
Critical	35	50	47	75	53	35%	112%	52%
Dry	31	36	46	77	58	49%	151%	87%
Normal	36	44	57	18	32	60%	-49%	-11%
Wet	11	11	8	4	2	-28%	-61%	-79%

Table 4. Number of equivalent days that water at Stockton's intake *exceeds* 110 mg/L chloride under various modeled baseline scenarios for each water year between 1976 and 1991

Water ear	Water Year Type	Total Days	No. of days water at Stockton's intake exceeds chloride threshold of 110 mg/L					Percentage increase from EBC2 to B1	Percentage increase from EBC2 to B2	Percentage increase from EBC2 to Alt4A
			EBC2	NAA	B1	B2	Alt 4A			
1976	Critical	366	25	0	11	87	25	-55%	248%	-1%
1977	Critical	365	9	76	56	71	57	513%	685%	526%
1978	Normal	365	45	82	105	24	72	131%	-46%	60%
1979	Normal	365	12	29	33	31	18	171%	150%	45%
1980	Normal	366	50	23	34	1	6	-32%	-98%	-88%
1981	Dry	365	12	14	5	82	38	-58%	602%	223%
1982	Wet	365	20	23	30	4	4	49%	-82%	-81%
1983	Wet	365	0	0	0	0	0	NA	NA	NA
1984	Wet	366	0	0	0	0	0	NA	NA	NA
1985	Dry	365	7	1	7	76	42	-8%	921%	469%
1986	Wet	365	26	20	4	15	7	-86%	-42%	-74%
1987	Dry	365	11	6	63	81	44	465%	627%	291%
1988	Critical	366	15	10	18	88	22	19%	487%	44%
1989	Dry	365	93	125	109	71	107	17%	-24%	15%
1990	Critical	365	54	24	11	57	37	-79%	5%	-32%
1991	Critical	365	75	139	143	72	129	92%	-3%	72%
Summary	(all)		455	572	627	759	606	38%	67%	33%

Chloride concentrations at the City's intake for dry water years (average of 1981, 1985, 1987, and 1989) are displayed graphically in Figure 8 for various operational and baseline scenarios. From January through April the Alternative 4A scenario results in higher chloride than EBC2, NAA, and Boundary 1 scenarios. In fact, chloride concentrations appear to exceed the 110 mg/L threshold towards the end of February, and through most of March, during which times the EBC2 and NAA scenarios simulate chloride concentrations around 90 mg/L. The DSM2-simulated chloride concentrations at the City's intake under the various operational scenarios are provided in Attachment 6 for all water year types and during every year in the modeled period (1976 to 1991).

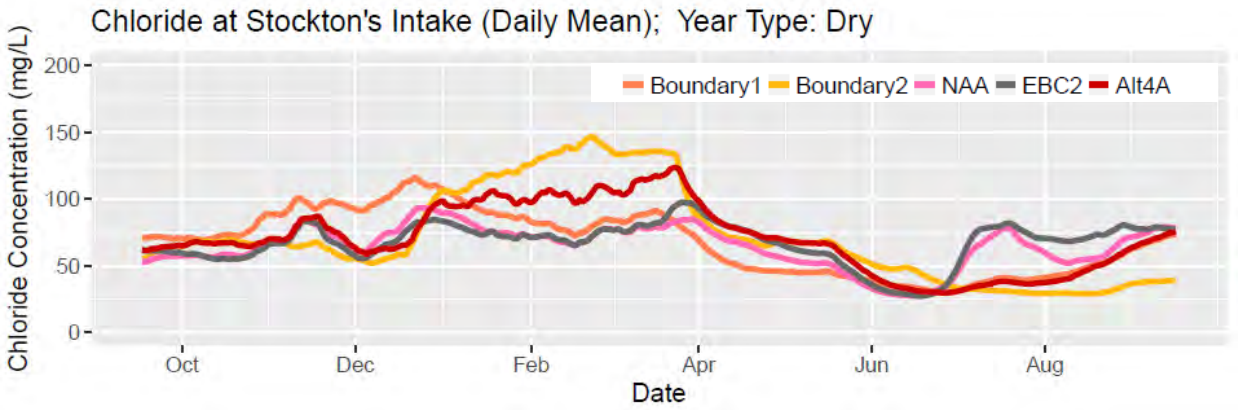

Figure 8. Concentration of chloride at Stockton's intake under various operational scenarios during dry water years (1981, 1985, 1987, and 1989)

5. The Water Quality Impacts of the Full Range of Operational Scenarios (Boundary 1 and Boundary 2) at Stockton's Intake are Significant.

The FEIR/EIS does not evaluate the full range of potential Project operational scenarios on the water source make-up and water quality at the City's intake. As discussed in Finding 3 above, DWR testified in the 2016 SWRCB water rights change petition hearings that Boundary 1 and Boundary 2 represent the range of potential Project operational outcomes that may result from implementation of the AMMP. Boundary 1 (characterized by a high volume of exported water) and Boundary 2 (characterized by high Delta outflow) represent a broad range of potential Project operations that is substantially different from any alternative evaluated in any of the Project environmental documents (DEIR/EIS, RDEIR/EIS, FEIR/EIS)[17] and a broad range of potential impacts to the City's water supply that should have been evaluated fully within one of the draft environmental documents and circulated for public review and comment.

[17] Model results show more water will be exported from the Delta under the B1 scenario than scenario Alternative 4A in all but critical water years. During wet and normal years, Boundary 1 results in 622 thousand acre-feet (TAF) and 638 TAF of additional exports, respectively. Note that Boundary 1 and Boundary 2 are presented in a highly generalized fashion in Appendix 5E of the FEIR/EIS, but water quality impacts were not evaluated for the City's intake, and the impacts of these two scenarios were not presented in detail or included in the summary impact tables in either the Executive Summary of the FEIR/EIS or in Chapter 8.

To evaluate the potential impacts due to the broad operational ranges that DWR has indicated are possible, Exponent compared the source of water and water quality at the City's intake for the boundary scenarios to the preferred Alternative 4A and to the existing condition (EBC2). This analysis demonstrates that the source of the water at the City's intake, and the fraction of Sacramento River water, will change significantly relative to Alternative 4A, in all year types, if Scenario Boundary 2 is implemented (see Figure 7 and Attachment 5). Changes for Scenario Boundary 2 relative to Alternative 4A are most pronounced during dry and critical water years. For example, in December of a dry water year, operation to Boundary 2 parameters would decrease the amount of Sacramento River water at the intake from 80 percent (Alternative 4A) to 55 percent (Boundary 2) (Figure 7). Operation to Boundary 2 would also increase the volume of lower quality San Joaquin River water relative to Alternative 4A and existing conditions (EBC2) during all water year types (Figure 7 and Attachment 5).

The number of days per year the chloride concentration at the City's intake exceeds the 110 mg/L usability threshold would also be greater under the Boundary 1 scenario than existing baseline EBC2 during normal (57 and 36 for Boundary 1 and EBC2), dry (46 and 31), and critical years (47 and 35) (Table 3). The number of days per year the chloride threshold is exceeded would be greater under the Boundary 2 scenario than EBC2 during dry (77 and 31 for Boundary 2 and EBC2) and critical years (75 and 31) (Table 3). Not only do the Boundary 1 and Boundary 2 operational scenarios generate water quality and source water changes that are significantly different from each other, they also generate impacts that are significantly different from the preferred Alternative 4A.

Figure 8 shows that during a dry water year under Boundary 2 operation, the 110 mg/L threshold would most frequently be exceeded from January to April and chloride concentrations up to 150 mg/L are simulated to occur. Compared to Alternative 4A, operating to the Boundary 1 scenario during a dry water year would cause higher chloride concentrations at the City's intake during the months of September through December; and operating to the Boundary 2 scenario would cause chloride concentrations to increase during the months of January through March (Figure 8). Compared to existing conditions (EBC2), operating to Alternative 4A during a dry water year causes chloride concentrations at the City's intake to increase during the months of January through March, May, October, and November (Figure 8). Thus, there are sizable impacts to the City's water quality during the operations of Project scenarios Boundary 1, Boundary 2, and Alternative 4A. These impacts have not been properly evaluated or disclosed in the FEIR/EIS.

6. By Presenting Water Quality Results as Monthly or Long-term Averages, the FEIR/EIS Does Not Adequately Describe Water Quality Changes that will be caused by the Project.

As shown in Finding 4, above, operating the Project to the preferred Alternative 4A will cause salinity to increase substantially at the City's intake. Although Chapter 8 of the FEIR/EIS shows the projected impact of Alternative 4A at various locations in the Delta (but not at the City's intake), the water quality data are presented as monthly average concentrations of EC and

chloride.[18] Monthly average chloride concentrations cannot be used to evaluate the impacts of the proposed Project on drinking water intakes within the Delta. Long-term average concentrations by definition cannot show shorter-term changes in salinity and water quality levels, and have the effect of masking substantial increases that will adversely affect Delta water users, including the City. Thus, even if the locations evaluated in the FEIR/EIS were representative of conditions at the City's intake, the decision to present water quality data in terms of long-term monthly average concentrations masks the substantial adverse changes in water quality that will occur.

The FEIR/EIS's justification for its use of long-term average concentrations is inadequate and inaccurate.[19] Because water intake operations are typically managed on an hourly or sub-hourly basis, hourly or sub-hourly chloride concentrations are needed for drinking water operators to understand the impacts on their operations. DSM2 offers the best available tool for assessing impacts to drinking water operations on a time scale relevant to operations (i.e., daily concentrations), and it is well-established that the DSM2 is suited to simulate the tidally driven hydrodynamics of the Delta, which are, in part, the cause of water quality changes over daily or sub-daily timescales. Although the model is not intended to be used in a predictive fashion, the use of the model's daily (or hourly, or sub-hourly) average concentration output can be employed for comparing and contrasting various operational scenarios. This comparison provides appropriate and valuable information for gauging water quality impacts to the City's intake.

Although the FEIR/EIS did not assess chloride impacts at the City's intake, impacts at Buckley Cove were assessed. Figure 9 is an excerpt of Table Cl-70 from Appendix 8G of the FEIR/EIS (p. 8G-84) which shows the change in average chloride concentration under Alternative 4A relative to the NAA and EBC1 baselines. The change in chloride concentrations in the table is reported as a monthly average concentration. As shown in Figure 9 (FEIR/EIS Table Cl-70), the maximum reported change in chloride at Buckley Cove relative to the NAA during the month of March is 9 mg/L; however, DSM2 model output evaluated by Exponent under this scenario

[18] The DSM2 model produces output data at 15-minute intervals. For example, the DSM2 model provides a modeled electrical conductivity (used to calculate chloride levels) values for each 15-minute interval in the 16-year modeled record (water years 1976-1991). DWR has aggregated the 15-minute model output data to calculate long-term monthly averages, which was done by first averaging data from each individual month at a specific location, and second, by averaging all data for that month over the full 16-year simulation period. For example, the 16 values of the monthly average chloride concentration for all the months of March at Buckley Cove were averaged to generate the average chloride concentration at Buckley Cove for the month of March (and the same process was followed for other months).

[19] FEIR/EIS Master Response 14 (pp. 1-123 to 1-124) states, "Given the models used and the associated limitations in interpreting the output, utilizing a shorter time step than monthly average for assessing water quality changes at the City of Antioch and CCWD's intakes would not result in a more accurate assessment of effects of the Project on salinity-related parameters (i.e., EC, chloride, bromide) or organic carbon. While there would be days within a month in which parameter concentrations/levels at a given location would be higher than the monthly average at that location (just as there would be days when it is lower), given the modeling limitations, comparing alternatives and baselines based on the monthly average at those locations is considered appropriate for the purposes of NEPA and CEQA."

shows that the change in chloride concentration in March at Buckley Cove can be much greater than 9 mg/L. For example, the difference in chloride concentration at Buckley Cove (between Alternative 4A and NAA) during March of 1981 (a dry water year) is over 25 mg/L (Figure 10).

DWR's use of long-term average monthly concentrations in the FEIR/FEIS serves to mask increases in chloride concentrations that may occur under various operational scenarios and is inappropriate for assessing water quality impacts in the Delta. The use of daily average salinity is more appropriate for evaluating water quality impacts.

Table Cl-70. Period average change in chloride concentrations (mg/L) for Alternative 4A ELT relative to existing conditions and the No Action Alternative ELT. Calculation of chloride concentrations was based on EC-chloride relationship.

Chloride			OCT		NOV		DEC		JAN		FEB		MAR		APR		MAY		JUN		JUL		AUG		SEP		Annual Avg. Change	
Alt 4A ELT	Location	Period [1]	Ex. Cond.	No Act. ELT	Ex. Cond.	No Act. ELT	Ex. Cond.	No Act. ELT	Ex. Cond.	No Act. ELT	Ex. Cond.	No Act. ELT	Ex. Cond.	No Act. ELT	Ex. Cond.	No Act. ELT	Ex. Cond.	No Act. ELT	Ex. Cond.	No Act. ELT	Ex. Cond.	No Act. ELT	Ex. Cond.	No Act. ELT	Ex. Cond.	No Act. ELT	Ex. Cond.	No Act. ELT
Delta Interior	Moke. R. (SF) at Staten Island	ALL	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
			(3%)	(3%)	(3%)	(2%)	(1%)	(1%)	(5%)	(4%)	(4%)	(4%)	(5%)	(4%)	(3%)	(3%)	(0%)	(1%)	(0%)	(1%)	(3%)	(3%)	(2%)	(1%)	(1%)	(1%)	(3%)	(2%)
		DROUGHT	0	0	0	0	0	0	1	1	0	1	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0
			(2%)	(2%)	(1%)	(1%)	(-0%)	(1%)	(4%)	(3%)	(1%)	(3%)	(1%)	(3%)	(-0%)	(1%)	(0%)	(1%)	(0%)	(1%)	(5%)	(4%)	(2%)	(-1%)	(1%)	(0%)	(1%)	(2%)
	SJR at Buckley Cove	ALL	-6	0	-12	-1	-22	4	-21	3	-13	6	-10	5	-16	-6	-9	1	-6	4	-7	7	-11	6	-12	-1	-12	2
			(-8%)	(0%)	(-11%)	(-1%)	(-15%)	(4%)	(-13%)	(3%)	(-9%)	(5%)	(-7%)	(4%)	(-18%)	(-7%)	(-12%)	(2%)	(-6%)	(5%)	(-7%)	(7%)	(-10%)	(6%)	(-11%)	(-1%)	(-11%)	(2%)
		DROUGHT	-14	0	-18	-1	-33	2	-32	6	-14	12	-12	9	-32	-12	-14	3	-22	7	-11	15	-15	18	-17	0	-20	5
			(-11%)	(-0%)	(-13%)	(-1%)	(-20%)	(2%)	(-15%)	(4%)	(-6%)	(6%)	(-5%)	(5%)	(-19%)	(-3%)	(-12%)	(3%)	(-17%)	(7%)	(-9%)	(17%)	(-12%)	(20%)	(-12%)	(-0%)	(-13%)	(4%)
	Franks Tract	ALL	-60	-41	-125	-97	-67	-44	-32	-30	-10	-6	2	3	5	5	2	3	3	2	-49	-32	-44	-32	-29	-20	-34	-24
			(-32%)	(-24%)	(-54%)	(-48%)	(-32%)	(-24%)	(-24%)	(-23%)	(-16%)	(-10%)	(5%)	(8%)	(15%)	(16%)	(5%)	(9%)	(6%)	(5%)	(-38%)	(-28%)	(-29%)	(-23%)	(-15%)	(-11%)	(-28%)	(-22%)
		DROUGHT	-38	-52	-98	-112	-41	-40	-22	-35	-11	-15	2	1	5	6	7	5	9	0	-86	-61	-55	-24	31	18	-25	-25
			(-17%)	(-21%)	(-36%)	(-39%)	(-15%)	(-15%)	(-12%)	(-18%)	(-15%)	(-20%)	(6%)	(1%)	(18%)	(19%)	(22%)	(14%)	(22%)	(1%)	(-42%)	(-33%)	(-24%)	(-12%)	(13%)	(7%)	(-16%)	(-17%)
	Old R. at Rock Slough	ALL	-35	-22	-96	-76	-60	-40	-26	-29	-7	-2	4	7	2	4	-1	2	5	5	-36	-23	-39	-29	-22	-17	-26	-18
			(-23%)	(-16%)	(-51%)	(-45%)	(-33%)	(-25%)	(-21%)	(-21%)	(-10%)	(-4%)	(9%)	(15%)	(4%)	(9%)	(-2%)	(4%)	(12%)	(13%)	(-35%)	(-26%)	(-31%)	(-25%)	(-14%)	(-11%)	(-24%)	(-16%)
		DROUGHT	-15	-25	-75	-92	-37	-34	-16	-33	-12	-13	2	5	5	8	7	7	9	4	-89	-49	-54	-29	20	12	-19	-20
			(-8%)	(-13%)	(-35%)	(-40%)	(-16%)	(-15%)	(-9%)	(-18%)	(-13%)	(-14%)	(4%)	(8%)	(9%)	(16%)	(18%)	(17%)	(24%)	(8%)	(-43%)	(-35%)	(-28%)	(-17%)	(10%)	(6%)	(-14%)	(-15%)

Figure 9. Excerpt of Table Cl-70 from Appendix 8G of the FEIR/EIS (p. 8G-84) showing the change in average chloride concentration under Alternative 4A relative to the NAA and EBC1 baselines

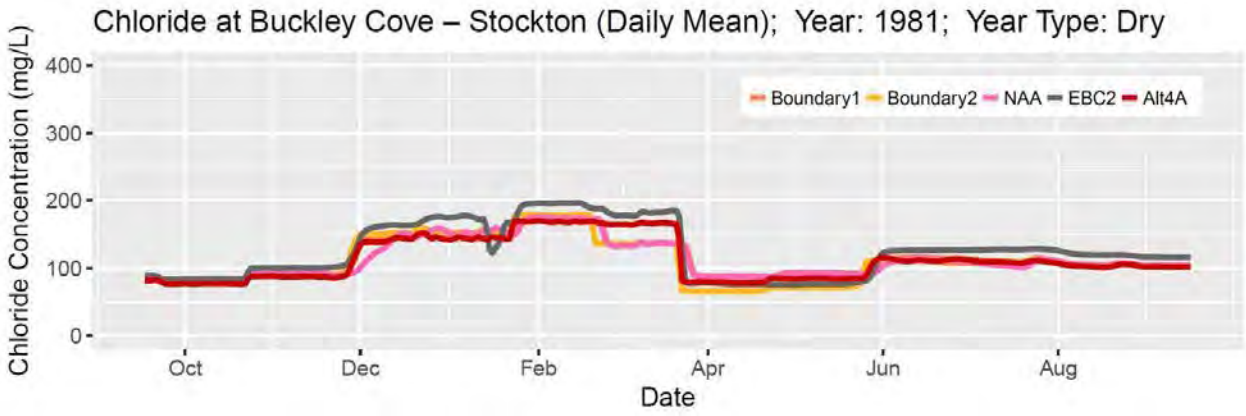

Figure 10. Concentration of chloride at Buckley Cove under various operational scenarios during water year 1981

7. The AMMP Remains Undefined in the FEIR/EIS and Does not Present a Clear Method or Rationale for Managing WaterFix Operations

The AMMP remains almost wholly undefined in the FEIR/EIS and offers only a broad description of program objectives and the program's conceptual framework. The AMMP is intended to be a project management strategy that allows for wide flexibility in determining the rates, volumes, and timing of water diversion operations from the Sacramento River, and which is expected to be a central component of the Project. As described in Finding 3, above, DWR has indicated that Project operations may vary within a very wide range of operations, from Scenario B1 to Scenario B2; however, DWR has provided almost no documentation in the FEIR/EIS or within other documents to describe how Project operations will be managed under the AMMP.

Instead, DWR states that "detailed monitoring and research plans *will be developed* that identify specific metrics and protocols" (FEIR/EIS p. 3-26, emphasis added) which should govern the AMMP. The FEIR/EIS also states that the AMMP may serve as a means to change Project operations beyond permitted limits.[20] The specific metrics and protocols by which the Project operations will be managed will determine the impacts of the proposed Project but thus far have not been developed or described. The FEIR/EIS also does not describe which agencies or personnel will be responsible for the research plans, operational protocols, and metric evaluation, or what the respective authorities and limits of the agencies will be.

[20] The FEIR/EIS (p. 3-287) states that "[t]he collaborative science effort is expected to inform operational decisions within the ranges established by the biological opinion and 2081b permit for the proposed Project. However, if new science suggests that operational changes may be appropriate that fall outside of the operational ranges evaluated in the biological opinion and authorized by the 2081b permit, the appropriate agencies will determine, within their respective authorities, whether those changes should be implemented."

The little information that is provided on the AMMP in the FEIR/EIS focuses on water supply and water quality outcomes that impact fish survival, rather than those that impact M&I water supply. On page 3-283 of the FEIR/EIS, DWR states that "Under the current BiOps and future operations under California WaterFix, a 'real-time operations' (RTO) mechanism will allow for adjustments of water operations, within established conditions … to benefit covered fish species." The AMMP does not describe efforts or protocols to protect water quality for M&I beneficial uses, does not include metrics, standards, or boundaries that will be used to evaluate water quality impacts, and does not describe any measures that may be implemented to address or mitigate water quality degradation. The fact that water quality apparently will not be considered to protect drinking water beneficial uses within the AMMP leads to still more uncertainty regarding the potential impacts of the proposed Project on the City.

8. Increased *Microcystis* Growth May Result from the Project.

Increases in *Microcystis* blooms are a concern in the Delta, as these cyanobacteria are known to produce toxic chemicals called microcystins, which are a risk to humans, livestock and wildlife. Microcystins can be present outside the cells of the cyanobacteria, and may not be completely removed via standard water treatment or boiling.[21] To evaluate the possibility of increased risk from this organism, the FEIR/EIS attempted to categorize all proposed project alternatives on a relative scale.

Overall, the factors known to control *Microcystis* growth in the Delta that are identified in the FEIR/EIS seem consistent with the state of the science. An increase in temperature and a decrease in flow rates were identified as the two most important influences on *Microcystis* growth in the Delta, with smaller potential impacts from changes in turbidity and nutrient concentrations.[22] However, the FEIR/EIS provides only a qualitative analysis of the potential impact of each proposed alternative on the likelihood that an increase in *Microcystis* blooms may occur. No detail is given on the criteria used to generate these results, which include a numerical rating proportional to the extent of the predicted impact, and which are presented on a whole-delta basis.[23] The use of a whole-Delta approach is inappropriate, as it does not consider area-specific changes as they relate to beneficial uses. On a whole-Delta basis, it would be possible to maintain a constant frequency of *Microcystis* blooms, while increasing ecological and human health risk, simply by altering the likely locations or timing of the blooms such that blooms are likely to be present at or near a drinking water intake for a longer period of time or more frequently.

In particular, the changes in temperature, flow rate (which is related to residence time), and turbidity in areas of drinking water intakes, including the City's intake, need to be specifically considered. It is established that lower streamflows that result in higher residence times

[21] U.S. EPA (United States Environmental Protection Agency). 2015. Health Effects Support Document for the Cyanobacterial Toxin Microcystins. EPA 820R15102, Washington, DC; June, 2015. Available from: http://water.epa.gov/drink/standards/hascience.cfm.

[22] FEIR/EIS p. 8-196 through 8-197.

[23] FEIR/EIS Figure 8.0-b.

correlate with an increased likelihood of blooms in the Delta.[24] All of the proposed Alternatives evaluated result in an increase in predicted summer mean residence times for all subregions of the Delta, with the exception of Suisun Marsh.[25] Although the FEIR/EIS specifically notes that under proposed Alternative 4A, "residence times may increase in parts of the southern and central Delta,"[26] Alternative 4A is not ranked as more likely to contribute to *Microcystis* blooms than the No Action Alternative (NAA).[27] The reasoning behind this conclusion is not presented.

Likewise, because studies have shown a sharp increase in the likelihood of *Microcystis* blooms in the Delta based on only moderate increases in temperature (from a likelihood of 10% at 20ºC to 50% at 25ºC[28]), the effect of temperature at locations throughout the Delta should be addressed explicitly in the FEIR/EIS. It is important to examine both the relative increases and decreases in temperature at specific locations, and also the absolute temperature predictions in relation to known thresholds (e.g., *Microcystis* blooms can occur when temperatures are greater than 19ºC[29]).

In summary, the FEIR/EIS conclusions regarding *Microcystis* are not fully explained and appear to be unfounded, and some factors, such as temperature, are not addressed fully. Given the increase in the residence time of water within the Delta that is predicted to occur as a result of the WaterFix Project, the likelihood of *Microcystis* blooms can be expected to increase.

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[24] Lehman, P. W., K. Marr, G. L. Boyer, S. Acuna, and S. J. Teh. 2013. Long-Term Trends and Causal Factors Associated with *Microcystis* Abundance and Toxicity in San Francisco Estuary and Implications for Climate Change Impacts. *Hydrobiologia* 718: 141–158.

[25] FEIR/EIS Table 8-60a.

[26] See FEIR/EIS at p. 8-980. Additionally, Exponent has previously demonstrated that residence times in the interior Delta will increase under certain WaterFix alternatives, including the Boundary 1 scenario, as a result of the diversion both of more water and of more Sacramento River water, which otherwise would have entered the Delta and increased the rate at which flushing of the Delta occurs. See Section 6C of Attachment 2.

[27] FEIR/EIS Figure 8.0-b.

[28] Mioni, C. 2012. What Controls Harmful Algal Blooms and Toxicity in the Sacramento-San Joaquin Delta? Research Summaries, California Sea Grant College Program, U.C. San Diego. Available: http://escholarship.org/uc/item/3qf633v9.

[29] Lehman, P. W., K. Marr, G. L. Boyer, S. Acuna, and S. J. Teh. 2013. Long-Term Trends and Causal Factors Associated with *Microcystis* Abundance and Toxicity in San Francisco Estuary and Implications for Climate Change Impacts. *Hydrobiologia* 718: 141–158.

Attachment 1

Curriculum vitae of
Susan C. Paulsen, Ph.D., P.E.

Exponent®

Susan C. Paulsen, Ph.D., P.E.
Principal Scientist & Practice Director

Professional Profile

Dr. Susan Paulsen is a Principal Scientist and the Director of Exponent's Environmental and Earth Sciences practice. Dr. Paulsen has 24 years of experience with projects involving hydrodynamics, aquatic chemistry, and the environmental fate of a range of constituents. She has provided expert testimony on matters involving the Clean Water Act and state water quality regulations, and she also provides scientific and strategic consultation on matters involving Superfund (CERCLA) and Natural Resources Damages (NRD). She has expertise designing and implementing field and modeling studies of dilution and analyzing the fate and transport of organic and inorganic pollutants, including DDT, PCBs, PAHs, copper, lead, and selenium, in surface and groundwater and in sediments.

Dr. Paulsen has designed and implemented field studies in reservoir, river, estuarine, and ocean environments using dye and elemental tracers to evaluate the impact of pollutant releases and treated wastewater, thermal, and agricultural discharges on receiving waters and drinking-water intakes. Dr. Paulsen has designed and managed modeling studies to evaluate transport and mixing, including the siting and design of diffusers, and has evaluated water quality impacts of stormwater runoff, irrigation, wastewater and industrial process water treatment facilities, and desalination brines. Dr. Paulsen has extensive knowledge of California water supply issues, including expertise in California's Bay-Delta estuary, the development of alternative water supplies, and integration of groundwater basins into supply and storage projects.

Dr. Paulsen has designed studies using one-dimensional hydrodynamic models (including DSM2 and DYRESM), three-dimensional CFD modeling, longitudinal dispersion modeling, and Monte Carlo analysis. Dr. Paulsen has participated in multi-disciplinary studies of the fate and transport of organic and inorganic pollutants, including DDT, PCBs, PAHs, copper, lead, selenium, and indicator bacteria in surface waters, groundwaters, and/or sediments. She has worked on matters involving both CERCLA and NRDA, including several involving the fate and transport of legacy pollutants, and she has evaluated the impacts of oil-field operations on drinking-water aquifers.

Dr. Paulsen has broad expertise with water quality regulation through the Clean Water Act and state regulations in California, Washington, Hawaii, and other states, and has worked on temperature compliance models, NPDES permitting, permit compliance and appeals, third-party citizens' suits, and TMDL development. She has evaluated the importance of background and natural sources on stormwater and receiving-water quality and the development of numeric limits for storm flows and process-water discharges. Dr. Paulsen is the author of multiple reports describing the history and development of water quality regulations and has provided testimony on regulatory issues, water quality, and water rights.

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Ph.D., Environmental Engineering Science, California Institute of Technology, 1997
M.S., Civil Engineering, California Institute of Technology, 1993
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Selected Publications and Presentations

Byard JL, Paulsen SC, Tjeerdema RS, Chiavelli D. DDT, Chlordane, Toxaphene and PCB Residues in Newport Bay and Watershed: Assessment of Hazard to Wildlife and Human Health. Reviews of Environmental Contamination and Toxicology 2015; 235.

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http://www.boeing.com/assets/pdf/aboutus/environment/santa_susana/water_quality/tech_reports/2007_background/2007_background_report.pdf.

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Paulsen SC, List EJ. Tracing discharges in ocean environments using a rare earth tracer. Presented at the 27th IAHR Congress, San Francisco, CA, August 1997.

Prior Experience

- Various positions including President, Flow Science Incorporated, Pasadena, California, 1997–2014
- Consultant to Flow Science Incorporated, Pasadena, California, 1994–1997
- Staff Engineer, Dames & Moore, Civil Design Group, San Francisco, California, 1990-1992
- Graduate Research and Teaching Assistant, Hydrologic Transport Processes and Fluid Mechanics, California Institute of Technology, Pasadena, California, 1993–1997
- Research Engineer, Fraunhofer Institute for Atmospheric Environmental Research, Garmisch-Partenkirchen, Germany (West), 1989
- Instructor, Technical Communications Program (joint Business School/School of Engineering program), Stanford University, Stanford, CA, 1989–1990

Professional Affiliations

- American Society of Civil Engineers—ASCE
- Member, National Ground Water Association

Depositions (last 4 years)

Robert Bruncati and Maureen Bruncati v. Billy Wayne Andrews, Jr., et al., Case No. CIVDS1309044, in the Superior Court of the State of California, County of San Bernardino, San Bernardino District. August 24, 2015, and September 8, 2015.

City of Cerritos, et al., v. Water Replenishment District of Southern California, Case No. BS128136, in the Superior Court of the State of California, County of Los Angeles. November 24, 2014.

The Boeing Company et al. v. State of Washington, Department of Ecology, Appeal of the 2010 Industrial Stormwater General Permit, Pollution Control Hearings Board, State of Washington. Case No. 09-140. 2011.

Puget Soundkeeper Alliance v. BNSF Railway Co., Case No. C09-1087-JCC, in the United States District Court, Western District of Washington at Seattle. 2011.

Trials and Hearings (last 4 years)

Robert Bruncati and Maureen Bruncati v. Billy Wayne Andrews, Jr., et al., Case No. CIVDS1309044, in the Superior Court of the State of California, County of San Bernardino, San Bernardino District. 2015.

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Attachment 2

Exponent (2016). Report on the Effects of the Proposed California WaterFix Project on Water Quality at the City of Brentwood. Exhibit Brentwood-102 of the WaterFix Change Petition Proceedings. August 30, 2016.

Exponent®

Report on Effects of the Proposed California WaterFix Project on Water Quality at the City of Brentwood

Exhibit Brentwood-102

STKN-026

Report on Effects of the Proposed California WaterFix Project on Water Quality at the City of Brentwood

Exhibit Brentwood-102

Prepared for

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August 30, 2016

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Acronyms and Abbreviations

AMMP	Adaptive Management and Monitoring Program
BA	biological assessment
BDCP	Bay Delta Conservation Plan
BiOp	biological opinion
cfs	cubic feet per second
City	City of Brentwood
CVP	Central Valley Project
D-1641	SWRCB Water Rights Decision 1641
Delta	Sacramento-San Joaquin Bay-Delta
DSM	Delta Simulation Model
DWR	California Department of Water Resources
E/I	Exports to inflows ratio
EBC	Existing Biological Condition
EC	electrical conductivity
ECCID	East Contra Costa Irrigation District
EIR	environmental impact report
EIS	environmental impact statement
FEIR	final environmental impact report
M&I	municipal and industrial
maf	million acre feet
NAA	No Action Alternative
NDD	North Delta Diversion
NMFS	National Marine Fisheries Service
OMR	Old and Middle Rivers
POD	point of diversion
PP#1	Contra Costa Canal at Pumping Plant #1
RDEIR	recirculated draft environmental impact report
Reclamation	U.S. Bureau of Reclamation
SDEIS	supplemental draft environmental impact statement
SWP	State Water Project
SWRCB	California State Water Resources Control Board
TDS	total dissolved solids
TUCP	Temporary Urgency Change Petition
USFWS	U.S. Fish and Wildlife Service
WaterFix	California WaterFix Project
WQO	water quality objective
WY	water year

1. Introduction

My name is Susan Paulsen and I am a Registered Professional Civil Engineer in the State of California (License # 66554). My educational background includes a Bachelor of Science in Civil Engineering with Honors from Stanford University (1991), a Master of Science in Civil Engineering from the California Institute of Technology ("Caltech") (1993), and a Doctor of Philosophy (Ph.D.) in Environmental Engineering Science, also from Caltech (1997). My education included coursework at both undergraduate and graduate levels on fluid mechanics, aquatic chemistry, surface and groundwater flows, and hydrology, and I served as a teaching assistant for courses in fluid mechanics and hydrologic transport processes. A copy of my *curriculum vitae* is included as Exhibit Brentwood-101.

My Ph.D. thesis was entitled, "A Study of the Mixing of Natural Flows Using ICP-MS and the Elemental Composition of Waters," and the major part of my Ph.D. research involved a study of the mixing of waters in the Sacramento-San Joaquin Bay-Delta (the Delta). I collected composite water samples at multiple locations within the Delta and used the elemental "fingerprints" of the three primary inflow sources (the Sacramento River, the San Joaquin River, and the Bay at Martinez), together with the elemental "fingerprints" of water collected at two interior Delta locations (Clifton Court Forebay and Franks Tract) and a simple mathematical model, to establish the patterns of mixing and distribution of source flows within the Delta during the 1996–1997 time period. I also directed model studies to use the chemical source fingerprinting to validate the volumetric fingerprinting simulations using Delta models (including the Fischer Delta Model and the Delta Simulation Model [DSM]).

I currently am a Principal and Director of the Environmental and Earth Sciences practice of Exponent, Inc. ("Exponent"). Prior to that, I was the President of Flow Science Incorporated in Pasadena, California, where I worked for 20 years, first as a consultant (1994–1997) and then as an employee in various positions, including President (1997–2014). I have 25 years of experience with projects involving hydrology, hydrogeology, hydrodynamics, aquatic chemistry, and the environmental fate of a range of constituents. I have knowledge of California water supply issues, including expertise in California's Bay-Delta estuary. My expertise

includes designing and implementing field and modeling studies to evaluate groundwater and surface water flows and contaminant fate and transport. I have designed studies using one-dimensional hydrodynamic models, three-dimensional computational fluid dynamics models, longitudinal dispersion models, and Monte Carlo stochastic models, and I have directed modeling studies and utilized the results of numerical modeling to evaluate surface and groundwater flows.

I have designed and implemented field studies in reservoir, river, estuarine, and ocean environments using dye and elemental tracers to evaluate the impact of pollutant releases and treated wastewater, thermal, and agricultural discharges on receiving waters and drinking-water intakes. I have also designed and managed modeling studies to evaluate transport and mixing, including the siting and design of diffusers, the water quality impacts of stormwater runoff, irrigation, wastewater and industrial process water treatment facilities, desalination brines and cooling water discharges, and groundwater flows. I have designed and directed numerous field studies within the Delta using both elemental and dye tracers, and I have designed and directed numerous surface water modeling studies within the Delta.

My testimony provides comments on the California Department of Water Resources' (DWR) and U.S. Bureau of Reclamation's (Reclamation) joint petition to the California State Water Resources Control Board (SWRCB) to amend their existing water rights permits to allow new water diversions under the State Water Project (SWP) and Central Valley Project (CVP) (collectively, the Projects). Specifically, I evaluated whether the proposed diversions, which will operate under the California WaterFix Project (WaterFix), will have an impact on the supply and quality of water available to Brentwood, which uses fresh water from the Delta for potable municipal supply. This testimony presents my analysis and technical comments on the impact of the WaterFix project on the supply of fresh water available to Brentwood. Specifically, the proposed WaterFix operations under various diversion Scenarios were evaluated to determine if the quality of water diverted by Brentwood will be negatively impacted. I reviewed DWR's assessment of the proposed project to determine if their evaluation sufficiently characterizes the range of expected water quality impacts on the City.

This testimony presents three Opinions in response to the SWRCB's Notice of Petition: DWR's evaluation of the proposed WaterFix project is inadequate (Opinion 1); WaterFix will result in substantial changes in Delta hydrodynamics and degradation of Delta water quality (Opinion 2); compliance with water quality standards is likely to become more challenging in the future and WaterFix will degrade the water quality the City's water supply (Opinion 3). The bases for these opinions and supporting documentation are provided herein.

2. Background

In October 2015, the SWRCB issued a Notice of Petition that the DWR and Reclamation were seeking to add three new points of water diversion/rediversion (POD and PORD, respectively) to their water rights permits as part of WaterFix implementation (Exhibit Brentwood-103). The WaterFix Project, as described in the Recirculated Draft Environmental Impact Report (RDEIR)/Supplemental Draft Environmental Impact Statement (SDEIS), is identified as Alternative 4A, the California Environmental Quality Act preferred alternative.[1] The WaterFix Project includes water conveyance facilities consisting of three new water diversion intakes along the Sacramento River between Clarksburg and Courtland and the construction of two twin concrete tunnels (30 miles long, 40 ft in diameter) to convey water from the new points of diversion to the existing pumping facilities near Tracy (Exhibit Brentwood-103).

The DWR and Bureau of Reclamation filed a petition with the SWRCB on August 26, 2015 (with an addendum and errata submitted on September 16, 2015) to change their water rights by adding three PODs in the Sacramento River to allow conveyance of water through the tunnels (labeled "CWF [California WaterFix] Intake 2," "CWF Intake 3," and "CWF Intake 5" in Enclosure C of the SWRCB Notice of Petition; Exhibit Brentwood-103). CWF Intakes 2 and 3 will be located between Clarksburg and Hood on the east bank of the Sacramento River, while CWF Intake 5 will be located further south on the east bank between Hood and Courtland. Each intake is designed to have a withdrawal capacity of 3,000 cubic feet per second (cfs), which yields a maximum diversion capacity of 9,000 cfs from the Sacramento River under the WaterFix Project. Currently, the DWR and Bureau of Reclamation divert water from the Delta only at the Banks Pumping Station, Clifton Court Forebay Intake, and the Jones Pumping Plant. The petition seeks to change DWR permits 16478, 16479, 16481, 16482 for the SWP and Reclamation permits 11315, 11316, 12721, 12722, 12723, 11967, 11968, 11969, 11971, 11973, and 12364 for the CVP (Exhibit SWRCB-1; Exhibit Brentwood-103). The SWRCB must evaluate the potential effects on legal users of water and on the environment associated with the

[1] The RDEIR/SDEIS can also be identified as Exhibit SWRCB-3.

proposed new diversion points in the Sacramento River before taking any action on the proposed new points of diversion (Exhibit Brentwood-103).

The DWR and Bureau of Reclamation have stated in their petition and WaterFix project documents that diversions from the Sacramento River will be "greatest" during wetter periods and "lowest" during drier periods (Exhibit SWRCB-1). Although the magnitude of the seasonal diversions has not been precisely specified in the petition and a wide range of values was assumed in modeling conducted by DWR, the petition indicates that approximately half of the total Delta diversions will occur at the new Sacramento River diversion points, while the other half will remain at the existing pumping stations in the South Delta (i.e., Banks Pumping Plant and Jones Pumping Plant) (Exhibit SWRCB-1; Exhibit Brentwood-103). The DWR and Bureau of Reclamation generally state that the construction of the water conveyance tunnels and new points of diversion will afford the agencies greater flexibility in managing and transporting water to various pumping stations and users through varying hydrologic cycles, user demands, and environmental conditions (Exhibit SWRCB-1; Exhibit Brentwood-103). While the DWR submitted an environmental impact report (EIR) for the Bay Delta Conservation Program (BDCP, the predecessor to the California WaterFix) and issued a RDEIR/SDEIS for the WaterFix Project, the agency has not submitted a final EIR for WaterFix (Exhibit SWRCB-3). The RDEIR/SDEIS was available for public review and comment from July 10, 2015 to October 30, 2015, and the City of Brentwood submitted comments on the RDEIR/SDEIS, which we attach and incorporate by reference (Exhibit Brentwood-104).

Exponent was retained by the City of Brentwood to assist in its evaluation of the California WaterFix Project. Our analysis of the impacts of the WaterFix Project relies in part on our analysis of the modeling of Alternative 4A, which was modeled in 2015 and 2016; model runs provided to protestants by DWR in May 2016; and modeling of "existing conditions" (without project scenario) conducted in 2013.

3. Methods

Our analysis of the impacts of the WaterFix project relied in part on our analysis of modeling performed in support of the Petition (i.e., the No Action Alternative [NAA] and project operations Scenarios Boundary 1, Boundary 2, H3, and H4) and existing condition model runs EBC1 and EBC2, which were performed in 2013. DWR used the Delta Simulation Model II (DSM2) to simulate hydrodynamics and water quality throughout the Delta for a range of model conditions and operational scenarios; these model results were released in May 2016 via download from DWR.

a. DSM2 Modeling and Volumetric Fingerprinting

Throughout the development of the BDCP, and now the California WaterFix (WaterFix), DWR used the DSM2 model to analyze and describe conditions within the Delta for the proposed project. DSM2 is a one-dimensional (with branched-channels) tidal hydrodynamic model used to simulate stage and tidal flows, water quality, and particle tracking in the Delta. The model was developed by DWR (Exhibit Brentwood-105). The model domain extends to the Sacramento River at I Street to the north and to the San Joaquin River at Vernalis to the south, and the model includes inflows from east-side streams (the Cosumnes, Mokelumne, and Calaveras Rivers). The downstream (western) boundary is located at Martinez.

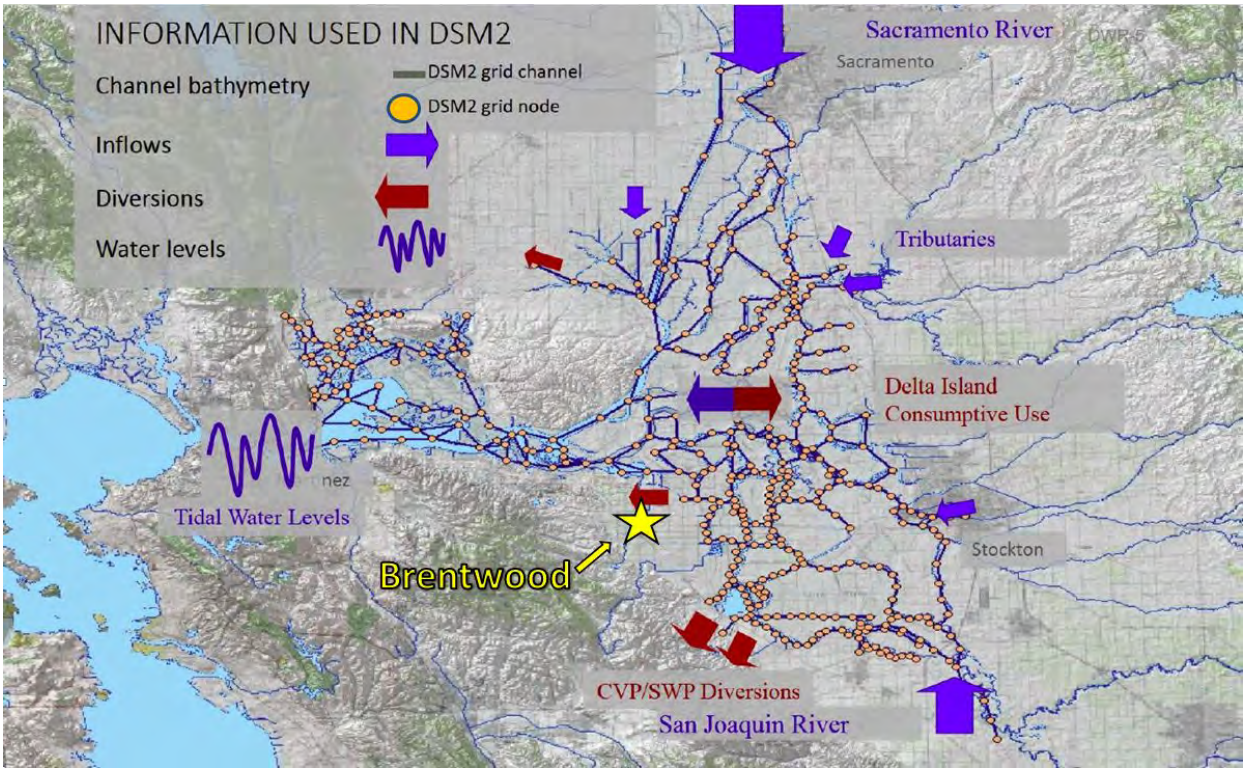

Figure 1. DSM2 model domain showing the grid nodes and channels. The City of Brentwood is shown in addition to primary inflows and diversions. (Source: Exhibit DWR-4 page 10, modified to show the general location of the City of Brentwood).

The DSM2 model has three separate components: HYDRO, QUAL, and PTM. HYDRO simulates flows in the channels defined in the DSM2 grid stage (water surface elevation) and tidal forcing at the downstream model boundary (Martinez). QUAL simulates the concentrations of conservative (i.e., no decay or growth) variables, such as EC (electrical conductivity, a measure of salinity), and non-conservative (decay or growth) variables, such as temperature and turbidity, given the inflows and tidal flows in the Delta channels simulated by HYDRO. The particle tracking model (PTM) simulates mixing and transport of neutrally buoyant (suspended) particles based on the channel geometry and tidal flows simulated by HYDRO. The model results (model output) provided by DWR in May 2016 included hydrodynamic and water quality information.

In addition to hydrodynamics and water quality modules, the DSM2 model can be used to perform "volumetric fingerprinting" to track inflows to the Delta throughout the model domain. Volumetric fingerprinting can be used to "tag" inflows to the Delta and determine the source of

water within the interior of the estuary. Because the model input and output files provided to the public by DWR did not include volumetric fingerprinting results, Exponent used the model input files provided by DWR and the DSM2 model to perform volumetric fingerprinting to determine the location and time that flows from various sources entered the Delta; this analysis was performed for EBC2, NAA, and B1 Scenarios. The DSM2 modules used for the analyses and fingerprinting presented in this report include HYDRO and QUAL. Exponent's fingerprinting results are described in Opinion 2.

As noted above, DWR released new modeling for the WaterFix Project in May 2016. DWR had previously released DSM2 modeling analyses and results for the existing (no project) condition and for the Project (or prior iterations of the project) in association with the 2013 Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS), the 2015 RDEIR/SDEIS, the 2016 Draft Biological Assessment (BA), and model runs that were intended to represent the WaterFix Project for the 2016 final EIR (FEIR). The modeling files were obtained from:

- 2013 EIR/EIS: Received (date unknown) from DWR (the EBC2 model run was included in these model results)
- 2015 RDEIR/SDEIS (updates and sensitivity files): Received September 9, 2015 from DWR (B.G. Heiland)
- EBC1 model run: Downloaded September 30, 2015 from DWR (B.G. Heiland)
- 2016 Draft BA: Downloaded February 2, 2016 from Reclamation (Michelle Banonis)
- 2016 FEIR model runs: Downloaded March 4, 2016 from DWR (B.G. Heiland) (note that the FEIR itself is not yet available)

The DSM2 model produces data on 15-minute intervals that can be exported easily to various formats for post-processing. The time period modeled in DSM2 for most WaterFix and BDCP analyses spans from water year (WY) 1975–WY 1991; however, the model results from WY 1975 are considered model "spin-up" time and are excluded from analyses. The analyses in this report are based on the 16-year record from WY 1976–WY 1991. The scenarios evaluated in the

May 2016 modeling performed in support of the WaterFix petition include operational Scenarios H3 and H4, Boundary 1, Boundary 2, and the NAA. Descriptions of these various scenarios are presented by DWR in Exhibit DWR-5.

b. Residence Time in the Delta

Residence time is a measure of the amount of time that water spends within a system; residence time is a function of the amount of water present in the system and the flow rate of water into or out of the system. The residence time can be estimated as follows:

$$Residence\ time = \frac{Volume\ of\ water}{Flow\ rate\ into\ system} = \frac{Volume\ of\ water}{Flow\ rate\ out\ of\ system}$$

During high flow conditions, residence times are shorter, while during low flow (drought) conditions, residence times are longer. Exponent's analysis of residence time is included in Opinion 2.

c. Water Year Type Classification

Hydrology in the Delta varies from year to year. Water years in the Delta, defined as October through September of the following year, are classified as wet, above normal, below normal, dry, or critical. DWR determines the water year type by calculating a water year index number, which accounts for both the hydrology of the current year and the previous year's index[2]. By this classification system, the water years modeled in DSM2 by DWR fall into the following categories:

- Critical: 1976, 1977, 1988, 1990, 1991
- Dry: 1981, 1985, 1987, 1989
- Below Normal: 1979
- Above Normal: 1978, 1980

[2] Water year classifications from CDEC, accessed at http://cdec.water.ca.gov/cgi-progs/iodir/WSIHIST. Also, see Exhibit Brentwood-106.

- Wet: 1982, 1983, 1984, 1986

Because there is only one Below Normal water year in the modeled record, Exponent combined results for the Below Normal year with model results for Above Normal water years for the purposes of analyzing the WaterFix model runs; the water year type for water years 1978-1980 is referred to from here forward as "Normal." In some analyses, data are averaged by month or by water year type. This is done by aggregating data from those specific months or water year types and calculating an average. For example, the daily average chloride concentration during March of dry water years was calculated by sorting the DSM2 model results into bins such that the simulated salinity values for each day in March from years 1981, 1985, 1987, and 1989 were grouped and could then be averaged.

In addition, we relied upon DWR's water year classifications for the entire period of record, as summarized in Brentwood-106.

d. D-1641 Water Quality Objectives for Municipal and Industrial Beneficial Uses

SWRCB Water Right Decision 1641 (D-1641) (Exhibit SWRCB-21) establishes water quality objectives (WQOs) in the Delta for various beneficial uses. As discussed in Opinion 3, DSM2 results were used to evaluate compliance of the different modeled scenarios and baseline conditions with the D-1641 WQOs for municipal and industrial (M&I) beneficial uses.

D-1641 uses two chloride thresholds to define WQOs for M&I beneficial uses at various locations as shown in Table 1. Compliance was evaluated for each modeled scenario at Contra Costa Canal at Pumping Plant #1 (PP#1) for both the 150 mg/L and 250 mg/L thresholds. Results are discussed in Opinion 3.

Table 1. WQOs for M&I beneficial uses as specified in D-1641.

Compliance Location	Parameter	Description	Water Year Type	Time Period	Value
Contra Costa Canal at Pumping Plant #1 **or** San Joaquin River at Antioch Water Works Intake	Chloride (Cl-)	Maximum mean daily 150 mg/L Cl- for at least the number of days shown during the Calendar Year [in the "Value" column]. Must be provided in intervals of not less than two weeks duration.	W		240 days
			AN		190 days
			BN		175 days
			D		165 days
			C		155 days
Contra Costa Canal at Pumping Plant #1, **and** West Canal at Mouth of Clifton Court Forebay, **and** Delta-Mendota Canal at Tracy Pumping Plant, **and** Barker Slough at North Bay Aqueduct Intake, **and** Cache Slough at City of Vallejo Intake	Chloride (Cl-)	Maximum mean daily (mg/L)	All	Oct-Sep	250 mg/L Cl-

e. D-1641 Water Quality Objectives Applicable to Total Exports

D-1641 includes a limitation on exports that is expressed in terms of the ratio of total exports out of the Delta (E) to total inflows to the Delta (I). The combined export rate (E) for this objective is defined in D-1641 as the Clifton Court Forebay inflow rate (minus Byron-Bethany Irrigation District diversions from Clifton Court Forebay) plus the export rate of the Tracy pumping plant and is calculated as a three-day running average.

The total inflow (I) to the Delta is defined in D-1641 as the sum of mean daily flows from the Sacramento River inflows at Freeport, the San Joaquin River inflows at Vernalis, the eastside streams (Mokelumne, Cosumnes, and Calaveras Rivers), the Sacramento Regional Treatment Plant average daily discharge from the previous week, the mean daily flow from the Yolo

Bypass for the previous day, and other miscellaneous flows (combined mean daily flow from Bear Creek, Dry Creek, Stockton Diverting Canal, French Camp Slough, March Creek, and Morrison Creek). Delta inflows are summed and evaluated as a 14-day running average.

Exponent calculated exports and inflows to the Delta for the purposes of this analysis from DSM2 model results with minor variations from the method specified in D-1641. Sacramento Regional Wastewater Treatment Plant flows and miscellaneous flows were omitted for our analysis, as these flows are small relative to the other flows specified in D-1641 and are not expected to change the analysis results significantly. Delta inflows were calculated as 14-day running averages, while Delta exports were calculated as three-day running averages. Criteria specified in D-1641 limit Delta exports to 35% of Delta inflow between February and June (i.e., export-to-inflow [E/I] ratio < 0.35 from February-June) and to 65% of Delta inflow between July and January (i.e., E/I < 0.65 from July-January). There are some exceptions to these general rules[3] that were not considered in this analysis.

Because some WaterFix project scenarios will increase the total amount of water exported from the Delta, the E/I ratio will change for these scenarios. Consistent with D-1641's definition of "E" as total exports and "I" as total inflows, Exponent evaluated the E/I ratio for the WaterFix scenarios as:

$$\left[\frac{E}{I}\right]_{D-1641} = \frac{Banks + Jones + NDD\ Exports}{Sacramento + San\ Joaquin + Cosumnes + Calaveras + Mokelumne + Yolo\ inflows} \qquad \text{Eqn. 1}$$

However, it appears DWR and Reclamation are proposing this method of calculation be modified in light of exports from the North Delta Diversion (NDD). Specifically, the Draft BA (Exhibit SVWU-1) states,

> *"The D-1641 export/inflow (E/I) ratio calculation was largely designed to protect fish from south Delta entrainment. For the PA [Preferred Alternative], Reclamation and DWR propose that the NDD be excluded from the E/I ratio calculation. In other words,*

[3] See Exhibit SWRCB-21, pp. 186–187.

Sacramento River inflow is defined as flows downstream of the NDD and only south Delta exports are included for the export component of the criteria."[4]

By this proposed method of calculation, both total inflows and total exports would be reduced by the volume of water exported from the NDD:

$$\left[\frac{E}{I}\right]_{CWF,modified} = \frac{Banks + Jones\ Exports}{(Sacramento - NDD\ Exports) + San\ Joaquin + Cosumnes + Calaveras + Mokelumne + Yolo\ inflows} \quad \text{Eqn. 2}$$

From a mathematical perspective, subtracting the NDD exports from both the numerator and denominator of equation (1) to produce equation (2) reduces the calculated E/I ratio such that the E/I ratio is less restrictive under the new proposed calculation method. Exponent is not aware of whether this modified calculation method would constitute a change in water quality standards or whether the SWRCB would approve of such a calculation method. Thus, Exponent calculated the E/I ratio using both calculation methods and using the DSM2 model output provided by DWR. The results of Exponent's E/I calculations are included in Opinion 3.

f. Salinity Conversions

The salinity of water in the Delta has historically been expressed as electrical conductivity (EC), total dissolved solids (TDS), or chloride. Many salinity measurements in the Delta are made using EC because the analysis is more cost-effective and quicker than measuring TDS or chloride, and an EC measurement can be taken *in situ,* making it useful for grab sampling or continuous monitoring. EC is thus widely used as a surrogate for salinity (Brentwood-117). Guivetchi (1986) also derived linear relationships between EC, TDS, and chloride, generating mathematical equations for various locations in the Delta that can be used to convert one type of salinity measurement to another. The DSM2 model provides salinity as EC, which is converted to chloride using these relationships.[5]

[4] See Exhibit SVWU-1 (Draft BA), pp. 3–80.

[5] See http://www.water.ca.gov/suisun/facts/salin/index.cfm for additional details. Location ROLD21 was used for salinity conversions based on proximity to Brentwood's intake.

In general, the salinity of the Sacramento River is low, about 100 mg/L TDS; the salinity of water in the eastside streams is also low, typically less than 100 mg/L TDS. The EC (salinity) of freshwater inflows to the Delta is lower than that of sea water or water from San Francisco Bay. For example, in 2015, averaged measured EC in the Sacramento River at Freeport was 168 µS/cm (equivalent to TDS of 103 mg/L using the method of Guivetchi 1986) and ranged from approximately 109 to 281 µS/cm (TDS from 72 to 163 mg/L). Average EC in the San Joaquin River at Vernalis was 595 µS/cm (343 mg/L TDS), ranging from 99 to 1323 µS/cm (48 to 776 mg/L TDS), and average EC at Martinez (downstream boundary of Delta) was 26,384 µS/cm (17,882 mg/L TDS), ranging from 11,501 to 47,204 µS/cm (7440 to 32,490 mg/L TDS) (CDEC, data accessed online 1-6-15, Figure 4-8). By contrast, the salinity of seawater is approximately 50,000 µS/cm (35,000 mg/L TDS).

4. Delta Hydrodynamics

The Delta is the transition zone between the San Francisco Bay and its watershed, which is a 16.3-million-hectare (62,900-square-mile) basin that occupies roughly 40% of California's land area (Exhibit Brentwood-107). The Delta is fed by fresh water from the Sacramento River and San Joaquin River basins and east-side streams and is connected to the San Francisco Bay through Suisun and San Pablo Bays (Figure 2). The Sacramento River (and Yolo Bypass) provide approximately 60% to 80% of total inflow to the Delta (depending on hydrologic (water) year type), the San Joaquin River provides about 13% to 17% of total inflow, and the east-side streams, including the Calaveras, Cosumnes, and Mokelumne Rivers, constitute approximately 3% to 4% of total inflow (Exhibits Brentwood-108, Brentwood-109). The total annual inflow to the Delta during an average precipitation year is approximately 25 million acre-ft (maf) (Exhibit Brentwood-109), but inflows vary significantly during wet or dry years.

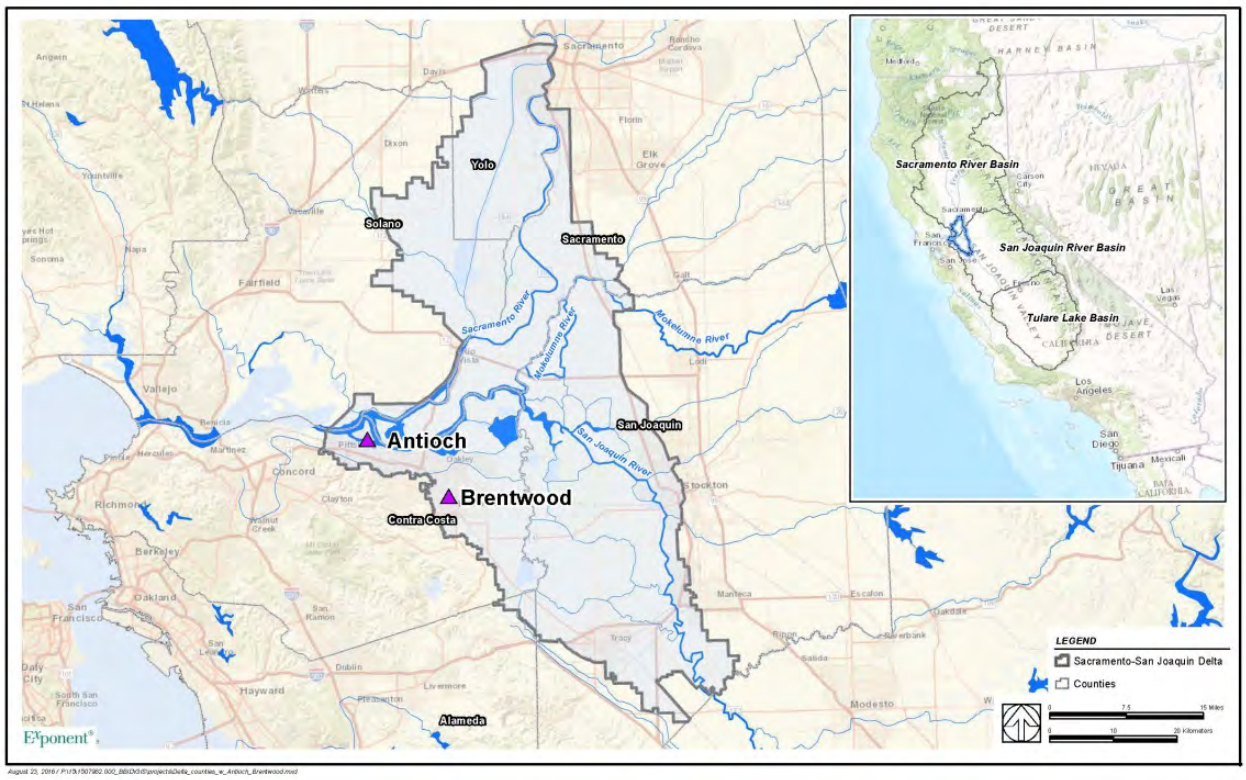

Figure 2. Overview of the Sacramento-San Joaquin Delta showing the approximate location of the City of Brentwood. The City of Antioch is also shown.

The salinity of water within the Delta results from the balance of freshwater flows into the Delta and higher salinity water that enters the Delta from the west as a result of tidal action. At the western boundary of the Delta, water typically has salinity levels that are intermediate between freshwater and ocean water. The salinity at the western Delta boundary results from the mixing of saltwater that enters San Francisco Bay through the Golden Gate from the Pacific Ocean and freshwater flows from both the Delta and stream and river flows that enter San Francisco Bay west of the Delta. Freshwater outflow from the Delta typically meets higher salinity water at an interface near Suisun Marsh; however, the location of this transitional zone is not fixed but rather fluctuates depending on freshwater flows and tidal action.

Salinity in the western Delta is also a function of both season and water year type. Salinity levels in the western Delta are typically low in the winter and spring months, when river outflows are higher as a result of winter rains and spring snowmelt, and higher in summer and fall months. During wet years, the Delta is dominated by fresh water flows, and in very wet

years the saltwater-freshwater interface may be pushed into San Francisco Bay to the west of the Delta. During dry years, river flows are lower than in wet years, and the saltwater-freshwater interface may extend into the Delta.

It is important to note that even if there was no freshwater inflow into the Delta, water would be present in the Delta, as the bottom elevation of most Delta channels is below sea level—i.e., even if there were no freshwater flows into the system, water from San Francisco Bay would flow into the system, and water would be present. As noted by DWR,

> *"Because the Delta is open to the San Francisco Bay complex and the Pacific Ocean and its channels are below sea level, it never has a shortage of water. If the inflow from the Central Valley is insufficient to meet the consumptive needs of the Delta, saline water from the bay fills the Delta from the west. Thus, the local water supply problem in the Delta becomes one of poor water quality, not insufficient quantity."*[6]

Variations in hydrology also have a significant impact on the salinity and water quality of the Delta. Multiple drought periods have occurred over the last century and have served to decrease fresh water outflows and increase salinity intrusion farther east into the Delta.

a. Residence Time

As mentioned in Section 3b, residence time is a measure of the amount of time that water spends within a system and is a function of the amount of water present in the system and the flow rate of water into or out of the system. Residence time is a function of many different factors and processes, and changes in residence time as a result of changes in Delta flow management are one determinant of water quality in the Delta. Jassby and Cloern (2000) (Exhibit Brentwood-107) estimated that the waterways within the Delta have a surface area of approximately 230 million m^2 (57,000 acres, or 2.5 billion ft^2) and a water depth ranging from less than 1 m (3.3 ft) to greater than 15 m (49 ft). Assuming an average depth of 6 m (20 ft), the volume of water in the Delta at any point in time would be about 1.4 billion m^3 (1.2 million

[6] Exhibit Brentwood-110

acre-feet). Assuming a mean inflow of 1700 m^3/s (1.37 acre-feet/s or 60,000 cfs) during the winter and 540 m^3/s (0.44 acre-feet/s, or 19,000 cfs) during the summer (Brentwood-108, 1968-1995), the average residence time of water in the Delta would be approximately 10 days during the winter and 30 days during the summer.

DWR has used modeling to perform more detailed estimates of residence time. Specifically, DWR calculated the residence time of fresh water in the Delta between 1990 and 2004 using DSM2 PTM simulations to track water that entered the system at Freeport (on the Sacramento River) and at Vernalis (on the San Joaquin River) (Exhibits Brentwood-111, Brentwood-112, Brentwood-113). The residence time was defined as the number of days required for 75% of the particles injected over a 24-hour period at a specific location (e.g., Freeport) to leave or be removed from Delta channels. The particles were assumed to have left Delta channels when they passed (i.e., were detected) at the following locations: SWP and CVP pumps, Contra Costa Water District and North Bay Aqueduct intakes, Delta island diversions, and the Sacramento River at Chipps Island. Mierzwa et al. (Exhibits Brentwood-111 and Brentwood-112) determined the average 75% particle residence time for each month (e.g., every February, every October) between 1990 and 2004 and then calculated a long-term mean for each month with those averages. The monthly average residence times of Sacramento River inflows ranged from an average of 16 days during February (minimum of 3 days and maximum of 38 days) to 51 days during October (minimum of 37 days and maximum of 74 days). Monthly average residence times for San Joaquin River flows ranged from an average of 16 days during January (minimum of 6 days and maximum of 38 days) to 33 days during April (minimum of 8 days and maximum of 54 days). As expected, residence times were longer during dry years than during wet years; minimum residence times during the study period for Sacramento inflows occurred during 1997 and 1998, which were wet years, while maximum residence times occurred during 1992, a critically dry year.

5. Opinion 1: DWR's evaluation of the proposed project is inadequate.

a. The evaluation uses a flawed and inappropriate baseline.

Prior documents and model runs released by DWR utilized two model scenarios, EBC1 and EBC2, to simulate existing conditions; however, DWR's petition to the SWRCB did not include or evaluate water quality for an existing condition scenario. Rather, DWR presents only the NAA to represent "baseline conditions." The NAA scenario represents a future condition and includes about 15 cm of sea level rise but no new facilities.

The appropriate baseline condition for evaluating the impacts of the proposed WaterFix Project is the existing condition. As detailed in Exhibit Brentwood-104, Exponent, on behalf of the City, previously evaluated both the EBC1 and EBC2 existing condition model scenarios and found the EBC2 scenario to capture salinity within the Delta most accurately. I am unaware of any additional model runs conducted by DWR to evaluate hydrodynamics and water quality within the Delta for current conditions; since the existing condition does not involve project operations, the EBC2 model scenario is, to my knowledge, the best available model run to simulate the existing condition. In my experience, there is no precedent for using a future condition, such as the NAA, in isolation as a baseline for evaluating the impacts of a proposed project on other legal users of water. Furthermore, and as described below, the NAA scenario generally exhibits higher salinity at the City's water source than EBC2 under some conditions. If the NAA is used as a "baseline" scenario, the effect is to make some of the water quality impacts of the WaterFix project appear to be less significant than they actually are.

To assess the impact of using the NAA instead of the EBC2 scenario as the baseline in general terms, the daily average chloride concentrations were calculated for these two model runs and for the 16-year simulation period. The average chloride concentration at Contra Costa Pumping

Plant #1 (PP#1) [7] in the EBC2 and NAA scenarios was 105 mg/L. A statistical analysis comparing the simulated daily average chloride for each day in the 16-year simulation period confirmed however that the difference between EBC2 and NAA data sets is statistically significant. [8] Furthermore, the maximum daily average chloride concentrations simulated for the EBC2 and NAA scenarios are 395 mg/L and 462 mg/L, respectively. In addition, the standard deviation of the NAA scenario is 8% higher than EBC2, showing that simulated salinity is more variable in the NAA scenario than in the EBC2 scenario.

The percentage difference in monthly average chloride concentration was evaluated for the 16-year model period. Although some months show lower salinity for the NAA than the EBC2 scenario, in general, the NAA scenario shows that chloride concentrations are higher during dry, below normal, and critical years, as well as during the fall and winter months, as compared to the EBC2 scenario. During individual months, impacts can be significantly higher.

b. Project operations are poorly defined.

The WaterFix project as proposed and as analyzed in the RDEIR/SDEIS and May 2016 modeling is not clearly defined, and future operating scenarios are not clearly described. As a result, it is difficult for the City to assess the potential impacts of the Project on its water rights and water supply. The incomplete and unclear description of the WaterFix project and operations also makes it problematic to assess or determine harm to downstream beneficial uses.

DWR's May 2016 modeling effort evaluated five scenarios: the NAA plus four model scenarios intended to describe the potential operations of the project: Boundary 1 (B1), Boundary 2 (B2), H3, and H4. These scenarios describe a broad range of potential operations, and little information is given regarding the criteria by which the project would be operated or the criteria for changes in operations over time. For example, DWR states,

[7] As detailed in Brentwood-1, most of the City of Brentwood's surface water supply is diverted from Contra Costa Pumping Plant #1 (also known as Rock Slough).

[8] The Single Factor Anova test (Microsoft Excel Version 14.0.7166.5000)

> "*Alternative 4A is described by initial operational criteria that provides for a range of outflow. This range is described as initial operational scenarios H3 and H4. However, prior to operation of the project, there will be specific initial operating criteria set forth in the CWF BiOp. These criteria may change based on adaptive management. Since the BiOp has not be issued, and DWR and Reclamation do not know the initial operational criteria the analysis framework presented for Part 1 is a boundary analysis. The boundary analysis will provide a broad range of operational criteria and the initial operating criteria will fall within this range. These boundaries are sufficiently broad as to assure the State Water Board that any operations considered within this change petition proceeding have been evaluated with regard to effects on legal users of water.*"[9]

Scenarios B1 and B2 are intended to represent the wide range of potential operational states that may be implemented under the Adaptive Management and Monitoring Program (AMMP), which is a project management strategy that allows for wide flexibility in determining the rate, volume, and timing of water diversion from the Sacramento River. Operational scenarios H3 and H4 fall within the range of outflows produced by B1 and B2 and are bounded by those conditions.

As noted in DWR's testimony, operation of the WaterFix Project under Scenario B1 parameters "reflects a condition of less regulatory restriction on operations than the NAA. In this scenario, Delta outflow objectives are set per the D-1641 requirements. The Fall X2 and San Joaquin River inflow-export components from the Biological Opinions are not included in this scenario."[10] More specifically, scenario B1 does not include "additional spring Delta outflow, additional OMR [Old and Middle River] flows, existing I/E ratio, and the existing Fall X2 flow requirement imposed in the existing BiOp for Delta Smelt."[11]

[9] See Exhibit DWR-51, pp. 10:4–14.

[10] See Exhibit DWR-71, pp. 15:11–14.

[11] See Exhibit DWR-51, pp. 13:20–22.

In contrast,

> *"Boundary 2 reflects a condition of significantly increased delta outflow targets and increased restrictions on south delta exports as compared to the NAA… Delta outflow targets are significantly increased throughout the year, but particularly during winter and spring. More restrictive requirements were set for Old and Middle River (OMR) flows throughout the year that limit south Delta pumping substantially during January through June, and also impose further restrictions during July through December. In addition, modeling for Boundary 2 includes a fully-closed Head of Old River Gate during spring months which further reduces the amount of San Joaquin River water entering Old and Middle Rivers."*[12]

Scenario B2, which results in significant increases in Delta outflows, is not considered to be a realistic operational scenario. In its testimony, DWR states that the high outflow conditions were evaluated to "consider increases in outflow, without consideration of water supply benefits, and as such, an alternative that included this operational scenario would likely not meet the project objectives or purpose and need statement..."[13] DWR also stated that "the purpose of [boundary 2] is to demonstrate a scenario that has more restrictive Delta biological regulatory requirements."[14] It is therefore unlikely that the WaterFix project would be operated under parameters described by Scenario B2.

These Project model runs represent a wide range of operational scenarios; specifically, and compared to the NAA model results, Scenario B1 would result in about 1,200,000 acre-feet per year of *additional* exports, Scenarios H3 and H4 would result in about 500,000 acre-feet per year of *additional* exports, and Scenario B2 would result in 1,100,000 acre-feet per year *less* exports.[15] As detailed throughout this testimony, water quality impacts to the City are greatest under the B1 scenario, and most of the analyses presented in this testimony focus on model

[12] See Exhibit DWR-71, pp. 15:15–24.
[13] See Exhibit DWR-51, pp. 11.
[14] See Exhibit DWR-51, pp. 14:7–9.
[15] See Exhibit DWR-71, pp. 18:17–23.

scenarios describing the existing condition (EBC2), the NAA, and scenario B1. A summary of analysis results for additional scenarios (including Boundary 2 (B2), H3, and H4) is included in Appendix A.

In addition to the broad range of model scenarios, some information in DWR's testimony about project operations appears to be contradictory; specifically, and despite apparent statements to the contrary, one of the WaterFix model scenarios (Scenario B1) appears to be *inconsistent* with existing regulatory requirements.[16] Additionally, the criteria for some operational parameters, such as winter and summer outflow, are worded vaguely in the RDEIR/SDEIS: "Flow constraints established under D-1641 will be followed if not superseded by criteria listed above."[17] In this case, the "criteria listed above" comprises multiple pages of tables, and it is unclear which criteria are being referred to.

The limited discussion of operational flexibility in the RDEIR/SDEIS is particularly noteworthy for the City. It indicates that operations will be modified based on impacts to fish species, including critically important operations parameters for both spring outflow (to be managed for longfin smelt)[18] and Fall X2 (to be managed for delta smelt).[19] Although spring outflow and Fall

[16] For example, Exhibit DWR-51 (testimony of Jennifer Pierre) pp. 12–13 states that "existing regulatory requirements that will not change include: terms imposed through D-1641… water quality objectives… E/I ratio… Fall X2 flow." However, the Pierre testimony at pp. 13–14, in describing the Boundary 1 (B1) model scenario, states that "Boundary 1/Existing Outflow represents an operational scenario with most of the existing regulatory constraints… but does not include additional spring Delta outflow, additional OMR flows, existing I/E [*sic*] ratio, and the existing Fall X2 flow requirement… Fall X2 is an area of active investigation in a multi-agency collaborative group, and its future implementation might be adjusted based on the outcome of those investigations so this scenario excluded it from Boundary 1." It is further unclear why DWR refers to the B1 scenario as the "Boundary 1/Existing Outflow" scenario, since the operating assumptions in the B1 model run differ significantly from the operations and requirements currently in use; since Scenario B1 would export approximately 1.2 maf of water more than the NAA, and 0.9 maf more water than the EBC2, it should not be considered an existing outflow scenario.

[17] See Exhibit SWRCB-3 (RDEIR/SDEIS) at p. 4.1-10, Table 4.1-2. "New and Existing Water Operations Flow Criteria and Relationship to Assumptions in CALSIM Modeling" regarding the operations parameter "winter and summer outflow."

[18] See p. 4.1-9 of SWRCB-3 (the RDEIR/SDEIS), which indicates that, for spring outflow: "To ensure maintenance of longfin smelt abundance, initial operations will provide a March-May average outflow bounded by the requirements of Scenario H3, which are consistent with D-1641 standards, and Scenario H4, which would be scaled to Table 3-24 in Chapter 3, Section 3.6.4.2 of the Draft EIR/EIS… Adjustments to the criteria above and these outflow targets may be made using the Adaptive Management Process and the best available scientific information available [*sic*] regarding all factors affecting longfin smelt abundance."

X2 are critical determinants of water quality in the western Delta, there is no indication in the RDEIR/SDEIS or in the WaterFix testimony that operations would be constrained to avoid increases in salinity in the western Delta or to avoid impacts to M&I beneficial uses.

Finally, Water Code § 85086(c)(2) requires that appropriate Delta flow criteria be established. However, Delta flow criteria have not been established to date and have not been incorporated into the WaterFix Project modeling, resulting in additional uncertainty regarding project operations and project impacts.

As a result of the uncertainty in the operation of the WaterFix Project, it is difficult to predict with any certainty the water quality impacts that will occur at the City's intake. As described below, Exponent's analysis of project impacts focused on Scenario B1.

c. The Adaptive Management and Monitoring Program is undefined.

DWR has stated that the WaterFix project will operate initially to Scenarios H3 or H4 and that these operations will be modified using the AMMP, ultimately (presumably) operating within the broad boundaries defined by Scenarios B1 and B2. The AMMP is to be implemented to develop additional science during the course of project construction and operation and to inform and improve conveyance facilities operational limits and criteria; the AMMP is anticipated to result in modifications to operations of the north Delta bypass flows, south Delta export operations, head of the Old River barrier operations, spring Delta outflows, and the Rio Vista minimum flow standard in January through August.

The AMMP is included within the RDEIR/SDEIS as a means to accommodate flexibility in the proposed project that is required due to the "considerable scientific uncertainty… regarding the Delta ecosystem, including the effects of CVP and SWP operations and the related operational

[19] For example, p. 4.1-9 of SWRCB-3 (the RDEIR/SDEIS) indicates that "September, October, November implement the USFWS (2008) BiOp Fall X2 requirements. However, similar to spring Delta outflow and consistent with the existing RPA adaptive management process, adjustments to these outflow targets may be made using the Adaptive Management and Monitoring Program described below and the best available scientific information regarding all factors affecting delta smelt abundance."

criteria." It is well established that there is substantial uncertainty in the Delta ecosystem, and an adaptive management strategy is necessary; however, an adaptive management strategy should not be used as a means to circumvent project planning.

RDEIR/SDEIS proposed project Alternative 4A relies heavily on the AMMP to dictate changes in operation of water conveyance facilities, habitat restoration, and other factors during project construction and operation. The AMMP is a central component of the WaterFix Project yet remains almost wholly undefined. Beyond an introduction to basic principles of adaptive management, there is little discussion in the RDEIR/SDEIS of how the AMMP will be implemented, nor does it appear that there will be a review process for the considerable changes that may be recommended as a result of the AMMP. Although the AMMP is described as a means of making adjustments to operations criteria, there is no discussion of how this iterative process will occur. In addition, no operational boundaries are defined with regard to potential application of the AMMP that would operate to reduce increased salinity caused by WaterFix and the operations of the State and Federal Projects.[20] Presumably, the AMMP would allow operations consistent with the B1 operating scenario; as detailed in these comments, operating to Scenario B1 operations criteria would result in significant increases in salinity at the City.

The RDEIR/SDEIS indicates that "collaborative science and adaptive management will, as appropriate, develop and use new information and insight gained during the course of project construction and operation to inform and improve… the operation of the water conveyance facilities under the Section 7 biological opinion and 2081b permit…" As with the discussion of project operations, the RDEIR/SDEIS appears to indicate that the only factor that will be considered in modifying operations will be impacts to fish. The City is concerned that an AMMP focused solely on fish will fail to consider potential impacts to other beneficial uses, including the potentially substantial water quality impacts to municipal and industrial uses that could be induced by even modest changes to project operations.

[20] The Delta Independent Science Board also noted the lack of clarity regarding the adaptive management program. Specifically, SWRCB-49 states at p. 5, "The lack of a substantive treatment of adaptive management in the Current Draft indicates that it is not considered a high priority or the proposers have been unable to develop a substantive idea of how adaptive management would work for the project" and there were no "examples of how adaptive management would be applied to assessing—and finding ways to reduce—the environmental impacts of project construction and operations."

Considering the previous discussion and considering the water quality impacts that would occur at the City as a result of the implementation of scenario B1 parameters (see Opinion 2), it is unreasonable and without foundation for the RDEIR/SDEIS to state, "For the purposes of analysis, it is assumed that the Collaborative Science and Adaptive Management Program (AMMP) developed for Alternative 4A would not by itself, create nor contribute to any new significant environmental effects."[21]

d. DWR's evaluation of compliance with Water Quality Objectives is inadequate.

Although DWR provided exhibits intended to illustrate compliance with D-1641, these exhibits do not confirm compliance. For example, DWR states that Exhibit DWR-513 is intended to show compliance with D-1641:

> *"Exhibit DWR-513, Figures CL1-CL3 show the simulated chloride concentrations at Contra Costa Canal, Old River near Clifton Court, and Barker Slough/North Bay Aqueduct. (Exhibit DWR-513, pp.4-5). At all these locations there is year round D-1641 chloride concentration objective to be at or below 250 mg/L. Model results show that the monthly average chloride concentrations for all alternatives at these locations stay below this threshold."*[22]

However, D-1641 objectives for M&I beneficial uses are to be evaluated as "maximum mean daily" chloride (see Table 1). DWR states that "[s]ince CalSim II is a model with a monthly time-step and a number of daily D-1641 objectives are active during only portions of a month (e.g. April 1 to June 20 and June 20 to August 15), D-1641 objectives are calculated as a monthly weighted average."[23]

Exhibit DWR-513 (Figure CL1) was recreated to include the EBC2 scenario as shown in Figure 3. Note the values shown are on the order of a few percent lower than those shown in DWR-513

[21] See Exhibit SWRCB-3 (RDEIR/SDEIS) at p. 4.1-18.

[22] See Exhibit DWR-66, pp. 6:21–26

[23] See Exhibit DWR-71, pp. 5:16–18.

CL1, likely because we are unclear which EC to chloride conversion was used by DWR in the preparation of DWR-513, and we may have used a slightly different relationship to convert EC to chloride (for details regarding salinity conversions see Section 3f).

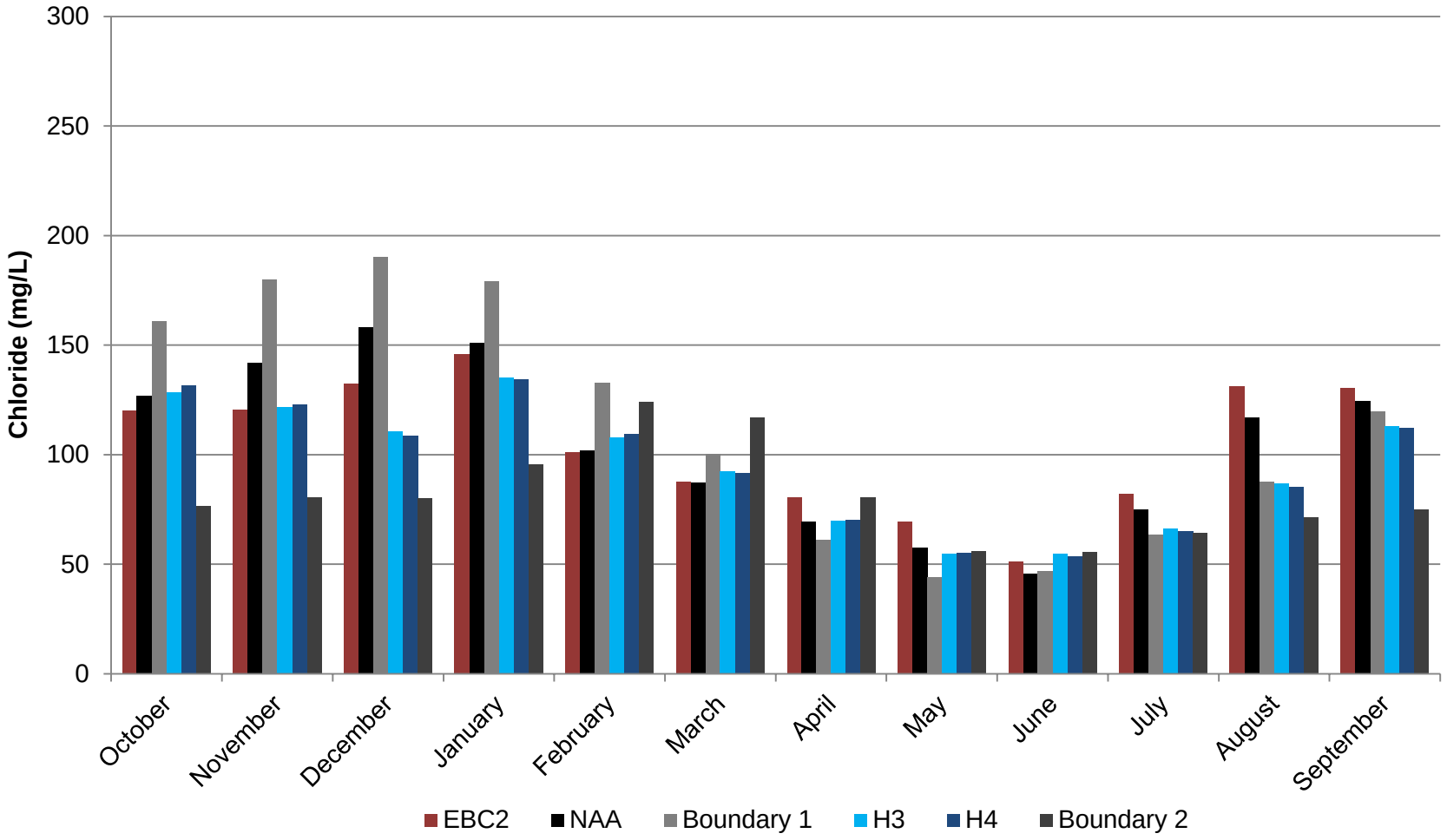

Figure 3. Monthly average chloride concentration at PP#1 from the 16-year modeled record. Note that the bars for the NAA, Boundary 1, H3, H4, and Boundary 2 scenarios were provided by DWR in DWR-513 (values may differ slightly due to different salinity conversions); Exponent has added the bar representing the existing condition (EBC2) scenario as modeled by DWR.

The model results presented in Figure 3 and those presented in DWR-513 do not provide model results or analysis to confirm that *daily* chloride concentrations are expected to meet D-1641 water quality standards. In fact, DWR has averaged the data in two ways: first, DWR calculated monthly average chloride concentrations from simulation results, and, second, DWR averaged the monthly average chloride concentrations for each month (e.g., each January) in the 16-year simulation period. Much of the variability from changes in natural hydrology or SWP/CVP operations is lost when DWR's 16-year simulation record of 15-minute interval data are averaged to monthly timesteps and when those monthly timesteps are then averaged over a 16-year simulation period.

As an example of how averaging to monthly timesteps and across multiple years results in a loss of information, Figure 4 shows daily average chloride concentrations simulated for WY 1978 and WY 1979. Figure 4 shows that the 250 mg/L threshold is exceeded from early October 1977 through early January 1978 for Scenarios NAA and B1 and again from late December through the end of February for the B1 scenario. The existing condition (EBC2) scenario exceeds the 250 mg/L chloride threshold for a few days in early January 1977 as well but not during the remainder of the time period shown in Figure 4. Figure 5 shows the daily average chloride concentrations from Figure 4 superimposed on the long-term monthly average concentrations presented by DWR, and reproduced here as Figure 3. Clearly, model results averaged both by month and over a 16-year period cannot be used to evaluate compliance with a water quality standard that is expressed in terms of *daily* chloride concentrations. Perhaps more importantly, M&I water purveyors, such as the City, operate intake facilities and manage water treatment operations to meet consumer demand on short timeframes (e.g., hourly); highly processed model results do not provide the information the City needs to assess the impacts of the WaterFix project on the City's drinking water operations.

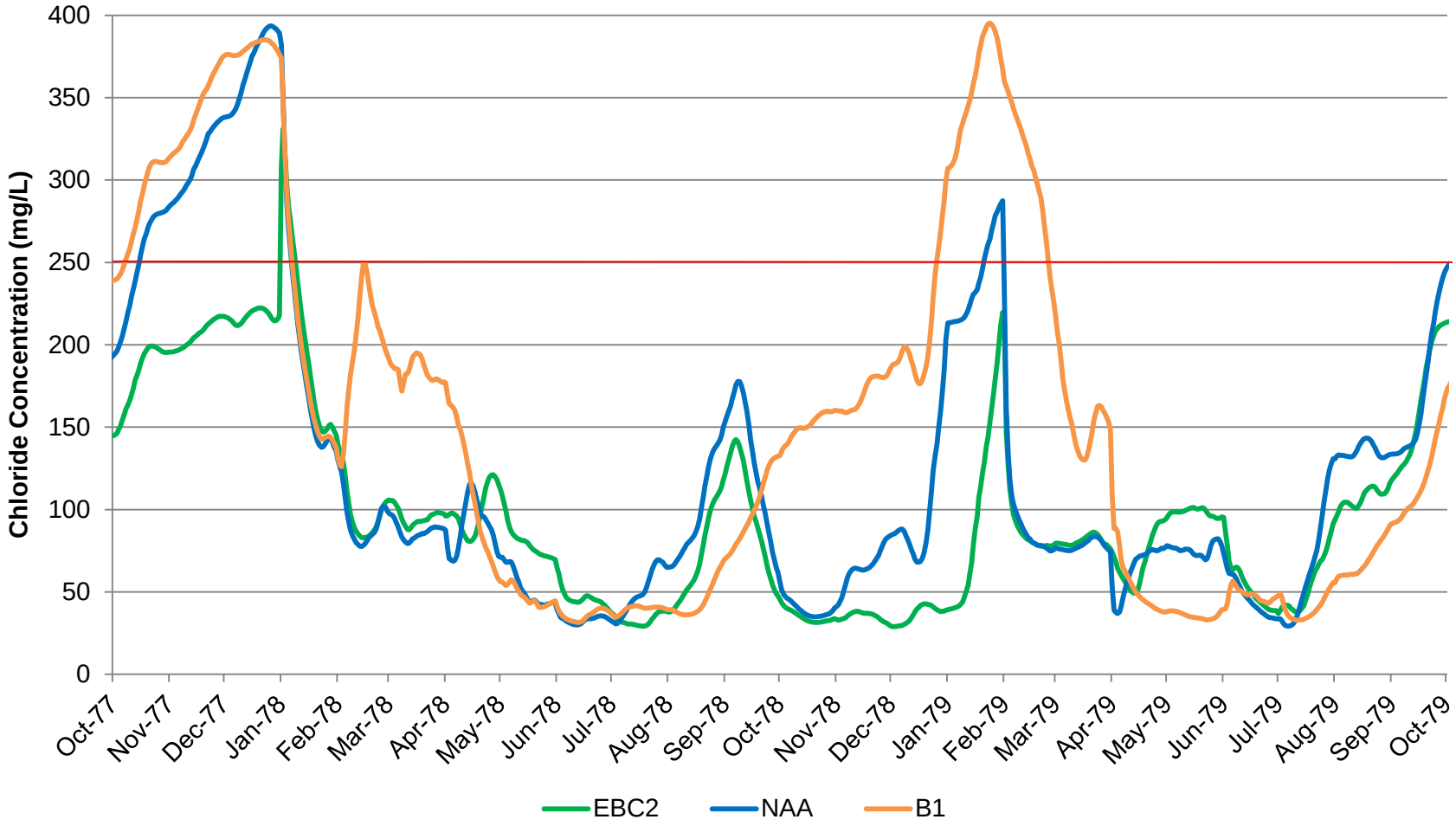

Figure 4. Daily average chloride concentrations at PP#1 for WY 1978–WY 1979, from DWR's model results. The red line indicates the 250 mg/L chloride threshold of D-1641.

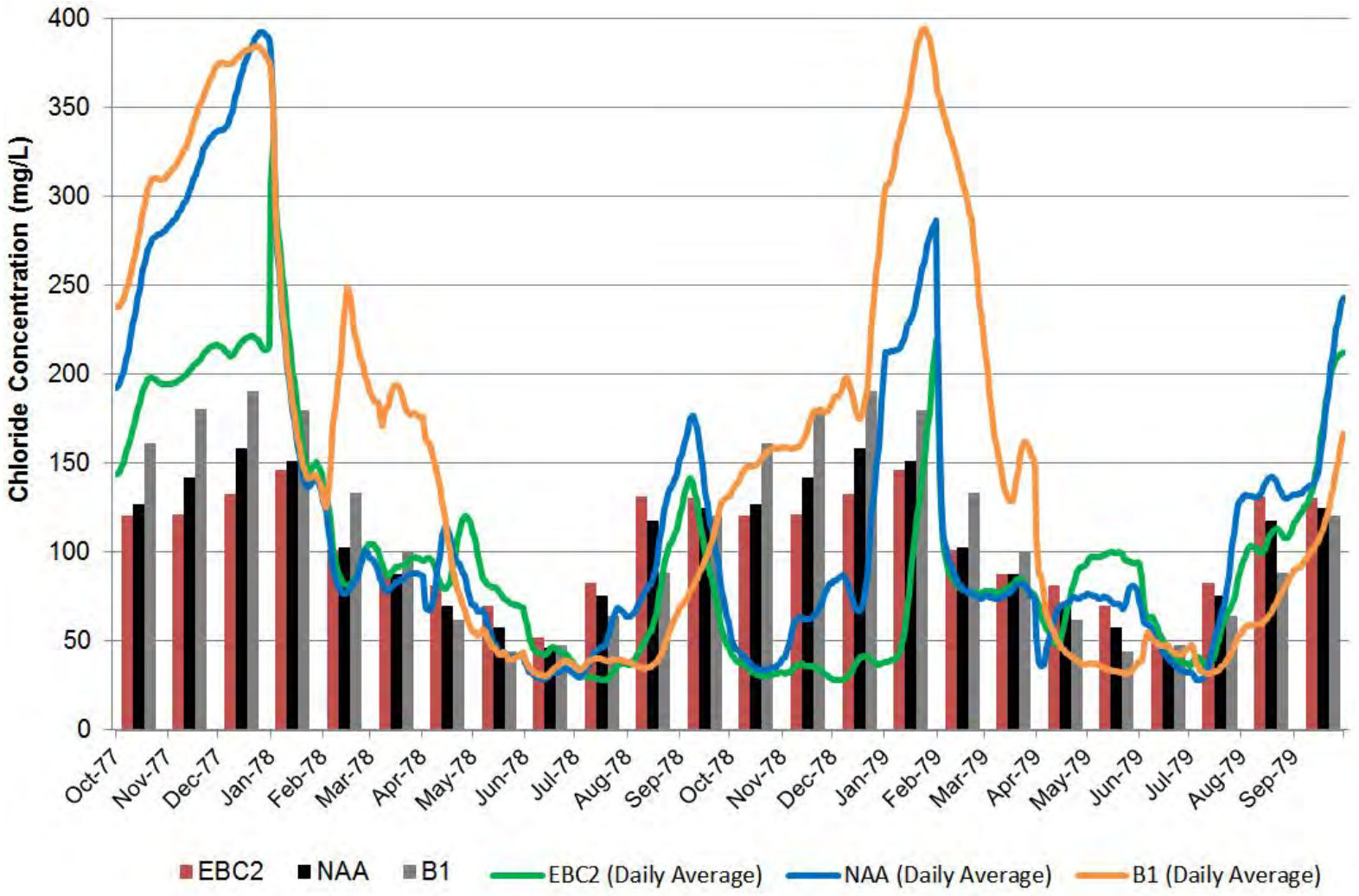

Figure 5. Daily average chloride concentrations at PP#1 for WY 1978-WY 1979 superimposed on the monthly averaged data presented in DWR-513 and recreated in Figure 3. The bars describing average salinity were repeated for each month in WY 1978 and 1979.

The problems with creating a long-term average of model results are also shown in Figures 6 through 9. Figures 6 through 9 show the same model results as Figure 3, averaged by water year classification (e.g., model results describing monthly average chloride concentrations for 1976, 1977, 1988, 1990, and 1991 were averaged to obtain the simulated monthly average chloride concentrations for critical years, as shown in Figure 6). As shown in Figure 7, the increase in the monthly average chloride concentrations in dry years is significantly higher for Scenario B1 than is indicated by the 16-year monthly average for Scenario B1 as shown in DWR-513 (see Figure 3). Monthly average chloride concentrations are simulated to exceed the 250 mg/L threshold of D-1641 in December and January of "normal" year types; for months with an average chloride concentrations between 200 and 250 mg/L (i.e., just below the 250 mg/L threshold of D-1641; see, e.g., November and December of critical and dry years), the 250 mg/L threshold is likely to be exceeded for some days during the month. Thus, not only is the D-1641 threshold for M&I beneficial uses likely to be exceeded, but it is clear that the WaterFix project can be expected to have significant impacts on the City's primary water supply.

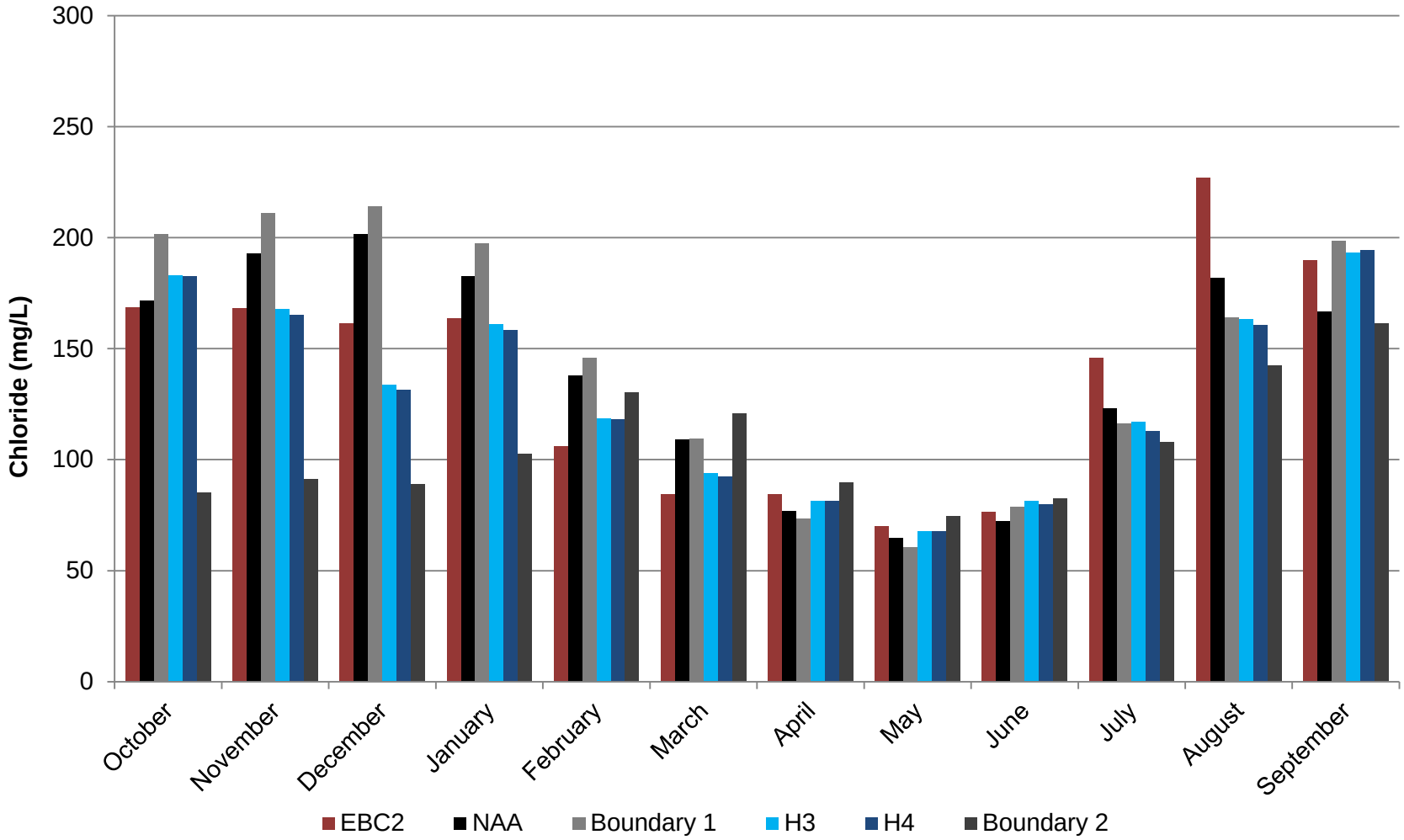

Figure 6. Modeled monthly average chloride concentrations at PP#1 in critical water years (1976, 1977, 1988, 1990, 1991). Calculated from DWR model results.

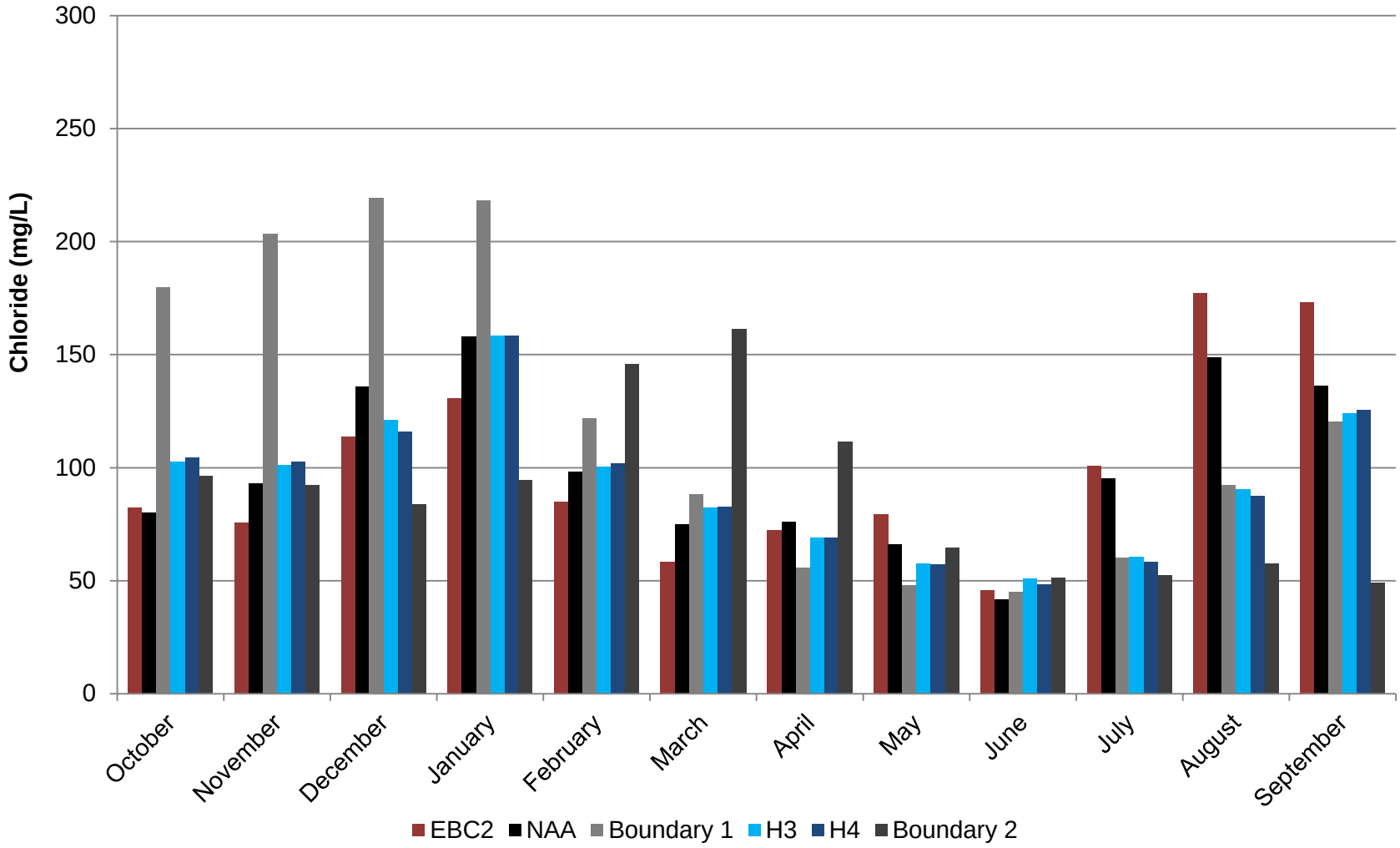

Figure 7. Modeled monthly average chloride concentrations at PP#1 in dry water years (1981, 1985, 1987, 1989). Calculated from DWR model results.

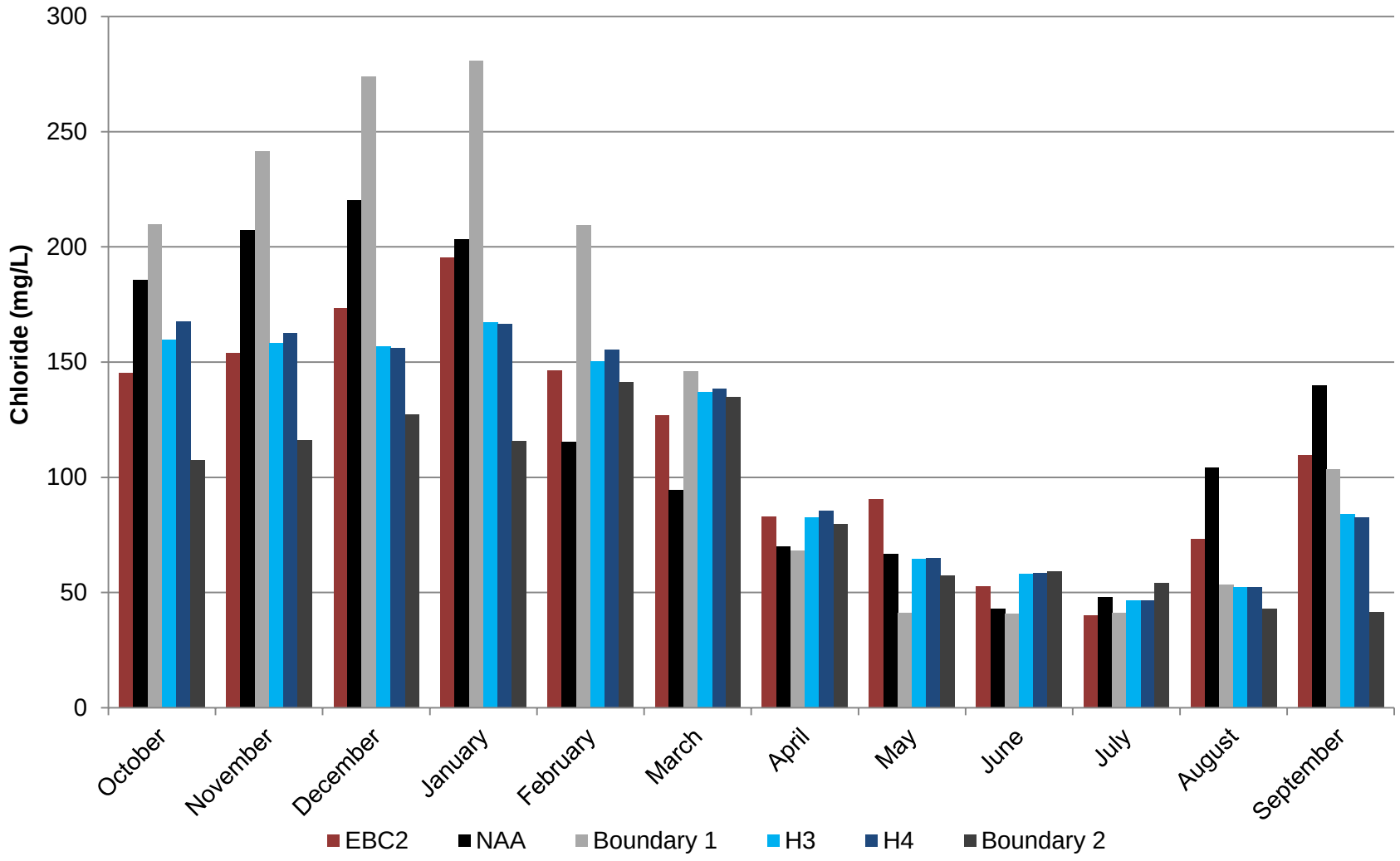

Figure 8. Modeled monthly average chloride concentrations at PP#1 in normal water years (1978, 1979, 1980). Calculated from DWR model results.

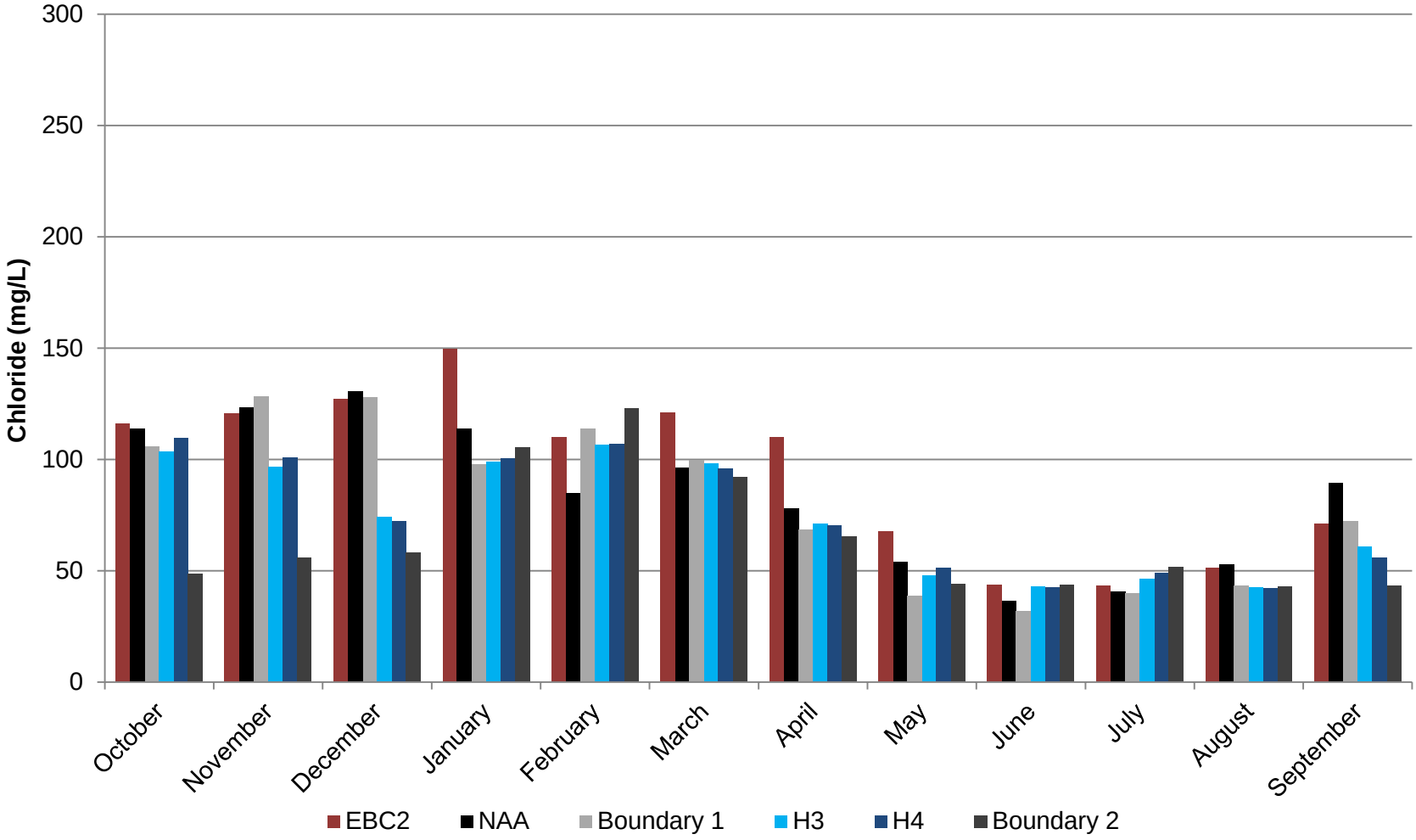

Figure 9. Modeled monthly average chloride concentrations at PP#1 in wet water years (1982, 1983, 1984, 1986). Calculated from DWR model results.

Exponent also created figures to show the *difference* between the 16-year average monthly chloride concentrations (as shown in Figure 3) and the monthly average chloride concentrations for specific year types (as shown in Figure 6 through 9). Positive values indicate an increase in salinity for the month of that specific water year type relative to the 16-year average monthly concentration, and negative values indicate a decrease in salinity. These figures also illustrate how long-term averages can mask some of the variability in the model results. For example, Figure 11 shows that the difference between the 16-year average monthly chloride concentrations and the monthly average chloride concentrations for dry years for Scenario B1 is as much as 39 mg/L, or 20%. Similarly, Figure 12 shows that the salinity during October through March of normal water years will increase by as much as 101 mg/L (or 44%) in comparison to the 16-year average monthly data.

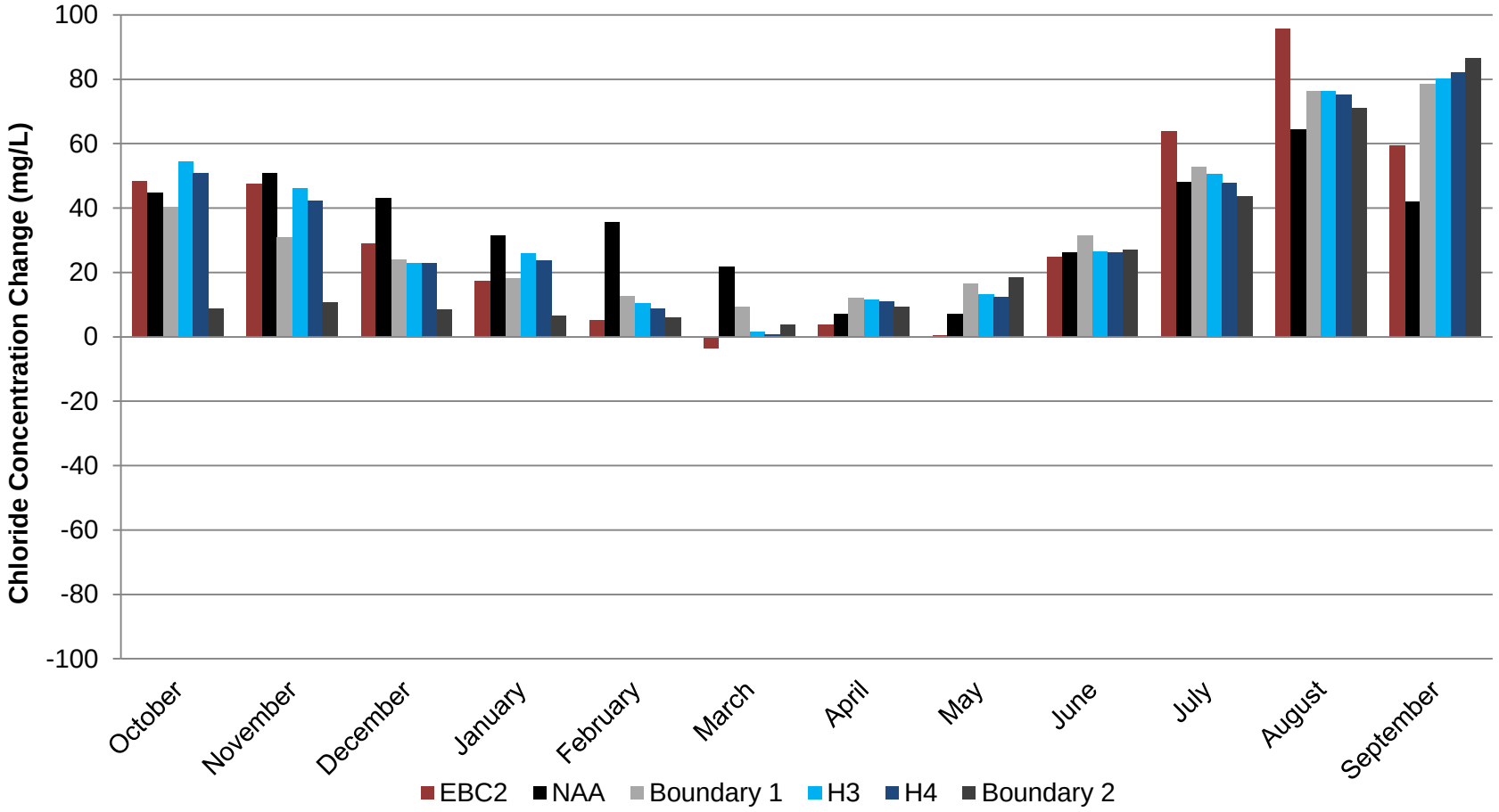

Figure 10. The difference between the 16-year average monthly chloride concentrations (as shown in Figure 3) and the monthly average chloride concentrations at PP#1 for critical water year types.

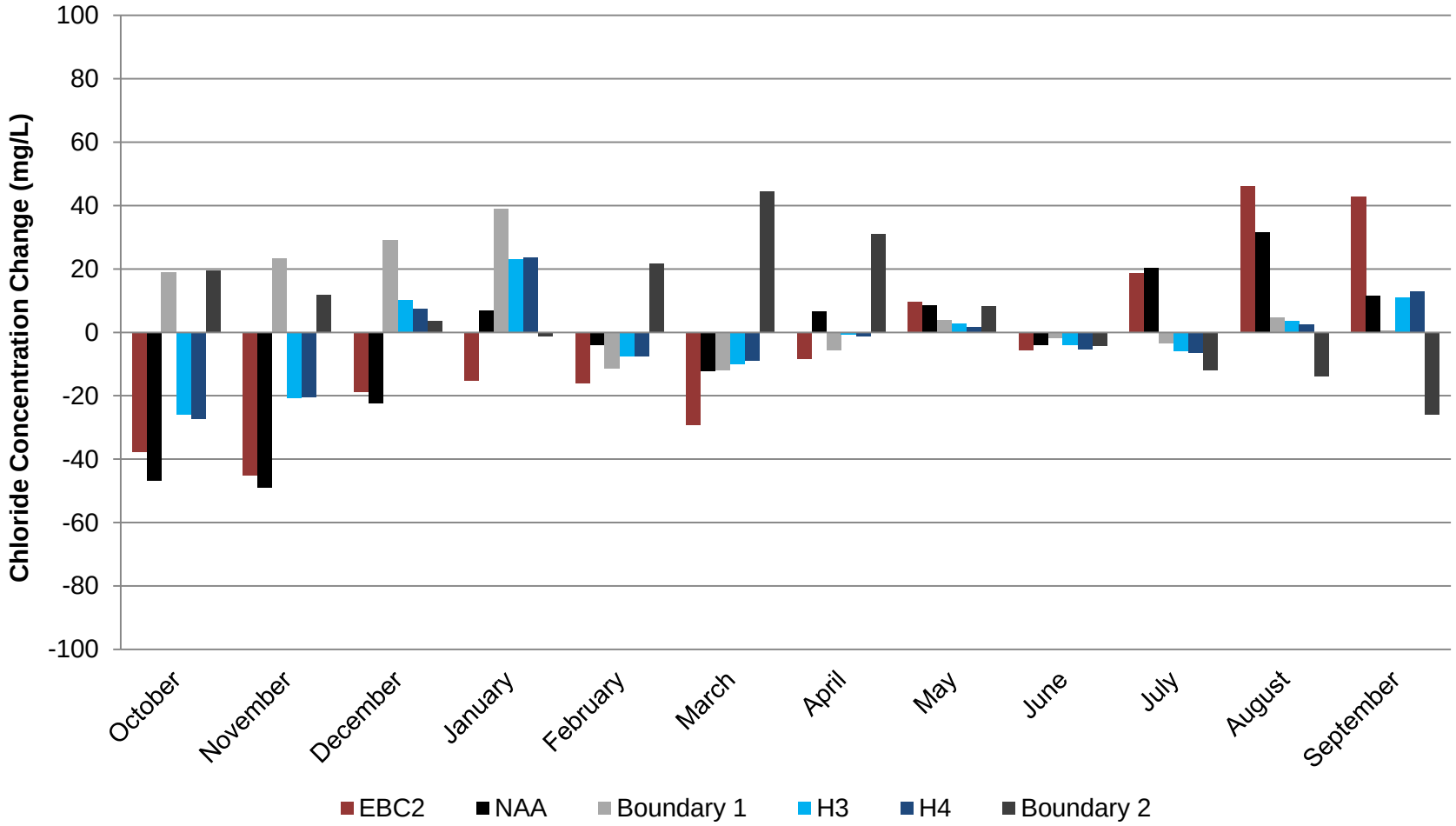

Figure 11. The difference between the 16-year average monthly chloride concentrations (as shown in Figure 3) and the monthly average chloride concentrations at PP#1 for dry water year types.

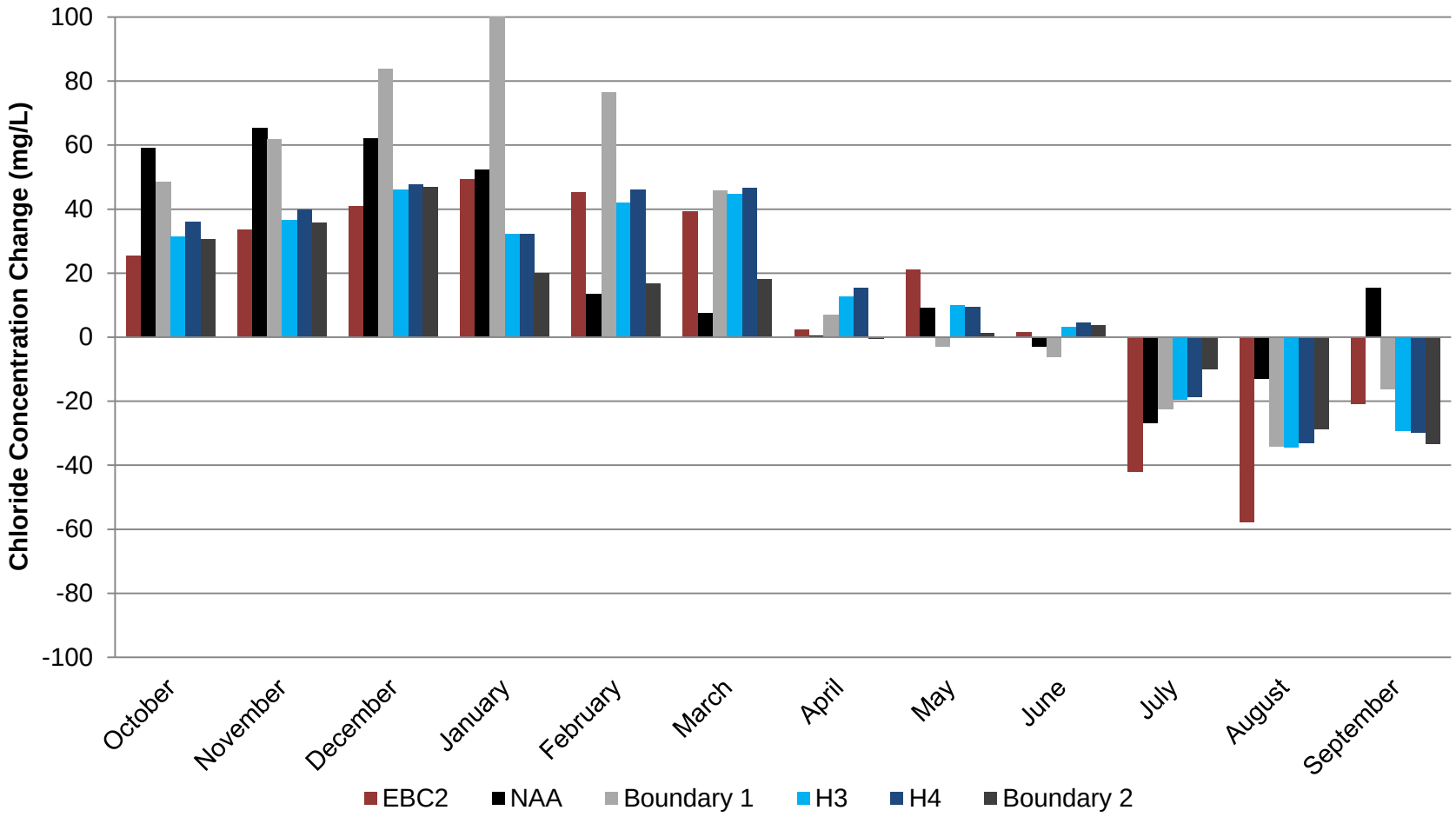

Figure 12. The difference between the 16-year average monthly chloride concentrations (as shown in Figure 3) and the monthly average chloride concentrations at PP#1 for normal water year types.

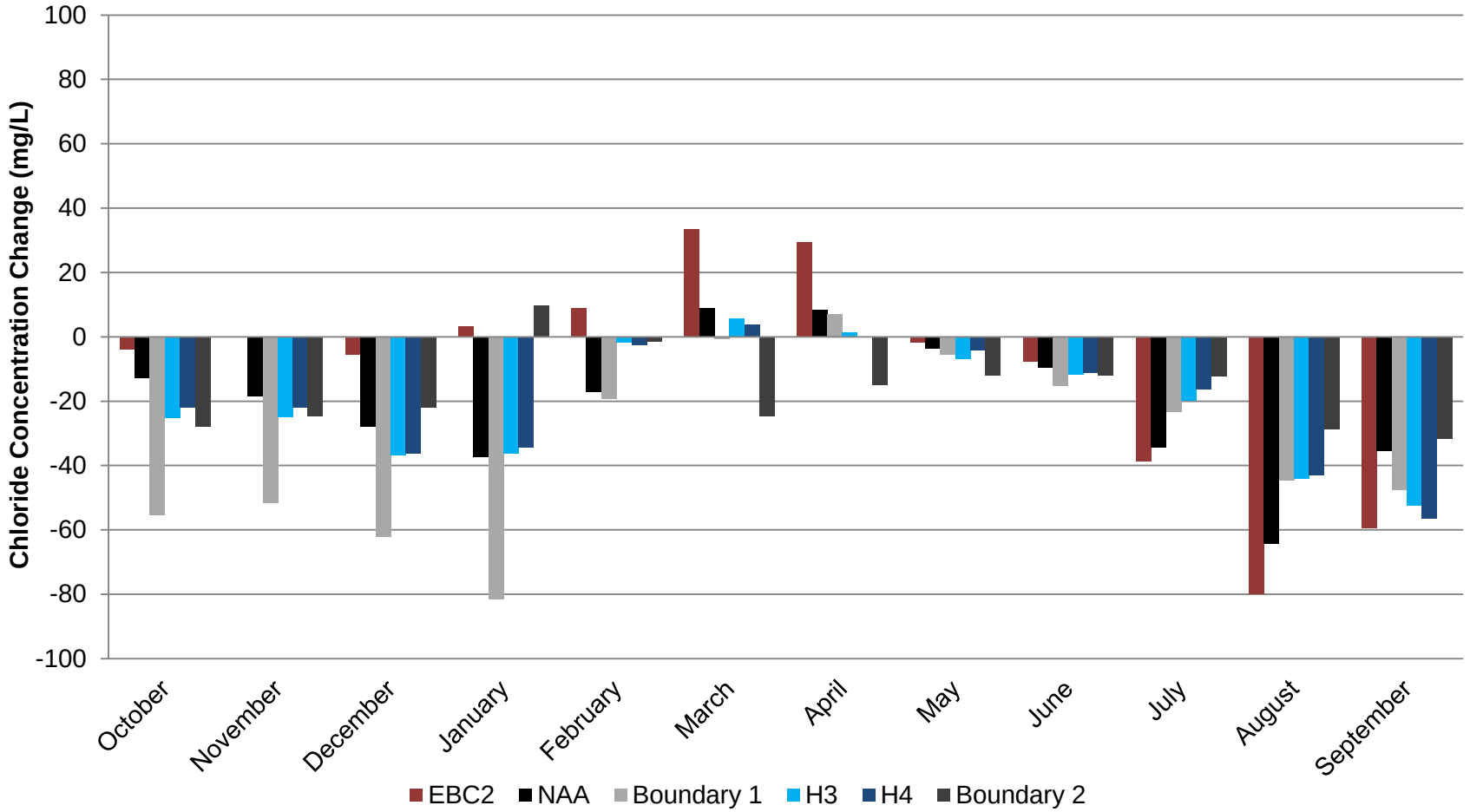

Figure 13. The difference between the 16-year average monthly chloride concentrations (as shown in Figure 3) and the monthly average chloride concentrations at PP#1 for wet water year types.

The D-1641 standards were written such that the 250 mg/L chloride standard was expressed as a "maximum mean daily" chloride concentration to be met on each day. The standard is not expressed as a monthly average, or as an average over many years, at least in part because long-term average chloride concentrations are not directly relevant to water users. As noted above, municipal and industrial water purveyors, such as Brentwood, operate intake facilities and manage water treatment operations to meet consumer demand on short timeframes (e.g., hourly); long-term average model results do not provide information suitable for determining the impacts of the WaterFix Project on the City's drinking water operations. DWR's analysis, when disaggregated to show daily and monthly variability, indicates that water quality in the Delta will be degraded and there will be reduced compliance with water quality objectives under Scenario B1.

6. Opinion 2: WaterFix will result in substantial changes in Delta hydrodynamics and degradation of Delta water quality.

a. CWF will almost certainly export more water from the Delta in the future than is currently exported.

DWR's testimony indicates that operational scenario B1 would result in an average of about 1,200,000 acre-ft per year of additional exports, while scenarios H3 and H4 would result in about 500,000 acre-feet per year of additional exports. Although operational scenario B2 would result in less water exported from the Delta, it appears that this scenario is unlikely to be implemented, as it would not "meet the project objectives or purpose and need statement."[24] Because Delta channels are below sea level, they will always contain water, but the source of the water in the interior Delta will change as water is exported from the system. As a basic mass balance, if more fresh water is removed from the system, Delta outflow will decline, and higher salinity water from San Francisco Bay will flow into the Delta. Similarly, if more water is removed from the NDD and less water is removed from the South Delta, the residence time and composition of water in the South Delta will change over time.

A detailed review of the modeling conducted for the proposed WaterFix Project confirms that the amount of water that would be exported from the Delta would increase for most model scenarios: "Model simulations suggest significant changes in south of Delta deliveries to SWP and CVP service contractors. The boundary scenarios reflect a range of a 34 percent increase to a 33 percent decrease in deliveries to these contractors."[25]

Figure 14 shows the amount of water that would be exported from the Delta under the model scenarios EBC2 (existing condition), NAA (no action alternative), and B1 (high export scenario). Exports in the B1 scenario are divided to show the location from which water was exported from the Delta in the model simulations: either from the South Delta or from the NDD.

[24] See Exhibit DWR-51, pp. 11:10–11.

[25] See Exhibit DWR-71, pp. 20:20–22.

(Of course, both the EBC2 and NAA scenarios would involve exports from the South Delta only.) The results in Figure 14 are averaged by water year type (i.e., export quantities were calculated for each month in the simulation period and averaged by month for each year type [wet, normal, dry, and critical]). The total amount of water exported from the Delta in the Boundary 1 scenario is generally greater than the amounts exported in the EBC2 and NAA scenarios during the spring in all year types. During May of normal water years, for example, modeled exports from Jones and Banks pumping plants are on the order of 2,000 cfs for EBC2 and NAA but are simulated to increase to approximately 8,500 cfs under B1 operations. During dry years, exports under scenario B1 increase for the months of October, November, and January through May by as much as 3,000 cfs (simulated mean increase in March of dry years). The annual average simulated Delta exports for Scenario B1 and for scenarios EBC2 and NAA for each water year type are shown to the right-hand side of each figure. With the exception of critical water years, the annual average volume of water exported under Scenario B1 is greater than that for the EBC2 and NAA scenarios. During wet and normal water years, an additional 1,000 cfs (approximately) is exported monthly for the B1 scenario compared to EBC2 and NAA.

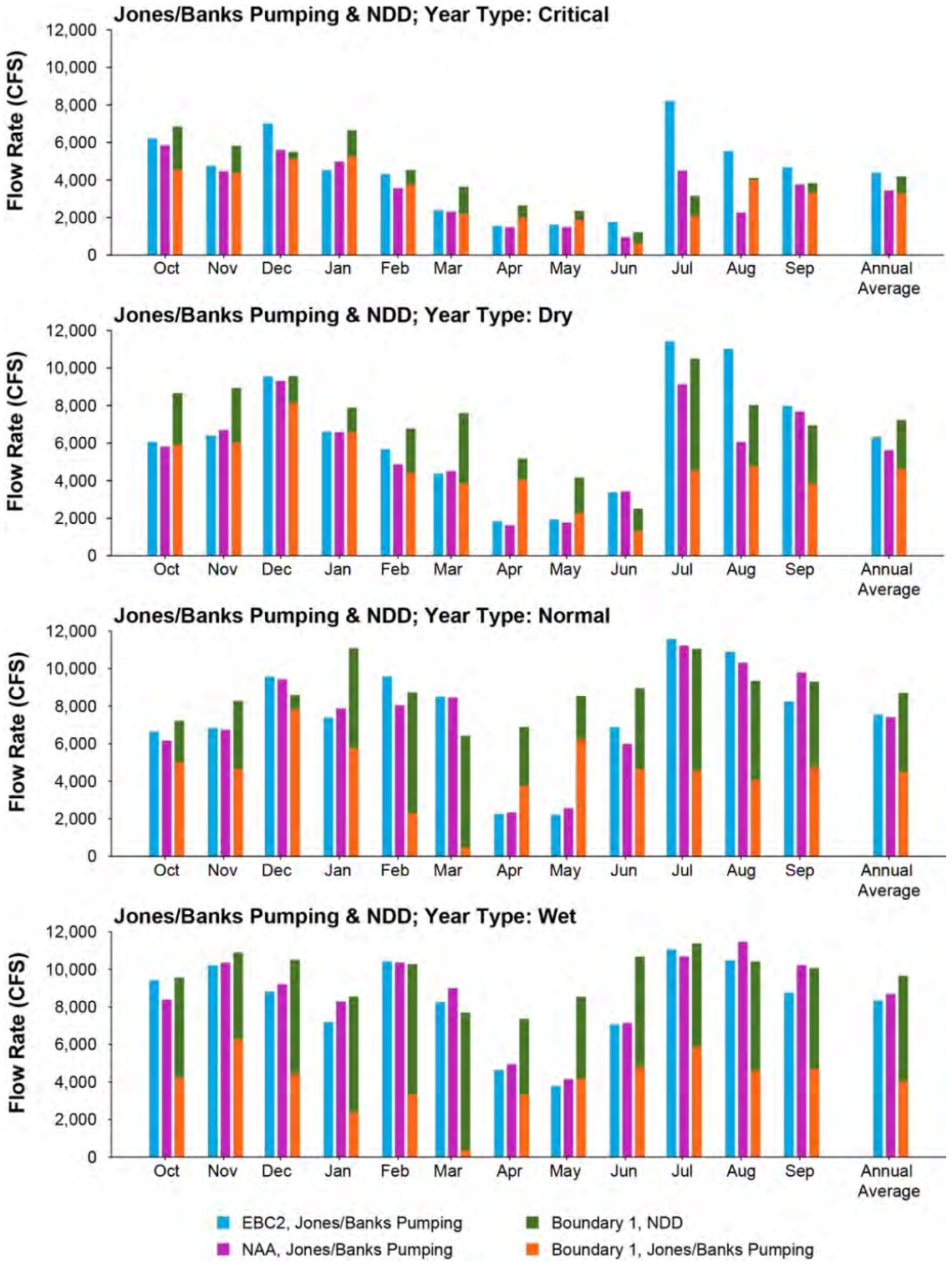

Figure 14. Quantity of water that would be exported from the Delta under the model Scenarios EBC2, NAA, and B1 as modeled by DSM2. Exports in the B1 scenario are divided to show the location from which water was exported from the Delta in the model simulations: either from the South Delta or from the NDD. Results are averaged by water year type.

b. Not only will the CWF remove more water from the Delta, the CWF will remove a greater fraction of Sacramento River water than current project operations, resulting in changes in the composition and quality of water within the Delta.

Because the new NDD intakes are located on the Sacramento River in the northern part of the Delta, water exported from these locations will consist almost entirely of Sacramento River water. In contrast, water exported from the South Delta pumping locations consists of water from several sources, including the Sacramento River, the San Joaquin River, eastside streams, and agricultural return flows; the relative fractions of these sources varies from year to year and season to season. To evaluate the source of the water at PP#1 under the various model scenarios, we used DWR's model input files to conduct fingerprinting runs using the DSM2 model, as described in Section 3a.

The source of water in the Delta largely determines the water quality, including the salinity, of water within the Delta. In general, the salinity of the Sacramento River is low, about 100 mg/L TDS; the salinity of water in the eastside streams is also low, typically less than 100 mg/L TDS. In 2015, the salinity of the Sacramento River was 106 mg/L TDS on average and ranged from 75 to 166 mg/L TDS (see Section 3f). In contrast, the salinity of the San Joaquin River varied seasonally in 2015 from 48 to 776 mg/L TDS (average 343 mg/L TDS). San Joaquin River water is typically higher in salinity, bromide, and other chemicals than water from other freshwater sources to the Delta (Brentwood-114). Agricultural return flows are also a source of salinity (and other constituents) to the Delta. Agricultural return flows have elevated salinity levels as a result of the concentration of salts from soils, from fertilizers used within the Delta, and from evaporation of water applied for irrigation (Brentwood-115). Although there are many individual locations of agricultural return flows, few have been characterized with respect to salinity levels or flow rates. It has been estimated that, in the San Joaquin River at Vernalis, agricultural surface runoff occurring upstream of Vernalis accounts for up to 43% of total salt loading in the San Joaquin River at Vernalis (Brentwood-114), based on historical data 1977–1997). Bay water, as recorded at Martinez (the western boundary of the DSM2 model) varies

from nearly fresh in times of high Delta outflow to 32,000 mg/L TDS during the fall months of dry years.

As shown in Figures 15 and 16, the fraction of Sacramento River water at the City's intake in most months of most year types for operational scenario B1 is less than both the existing condition (EBC2) and NAA scenarios (i.e., less Sacramento River water is expected to be present at the City's intake with implementation of the WaterFix project than is present now or than would be present in the future if the WaterFix project is not built). The fraction of Sacramento River water is generally higher for the EBC2 scenario than for the NAA scenario. As the Sacramento River water fraction declines, the San Joaquin River water fraction increases. For example, during February of normal water years, the fraction of Sacramento River water is 40% less for Scenario B1 than for existing conditions, while the fraction of San Joaquin River water is nearly 30% greater. During March of wet water years, the San Joaquin River fraction at the City's intake is nearly 80% in Scenario B1, while under existing conditions it comprises only 30%. During dry and critical years the differences are subtler.

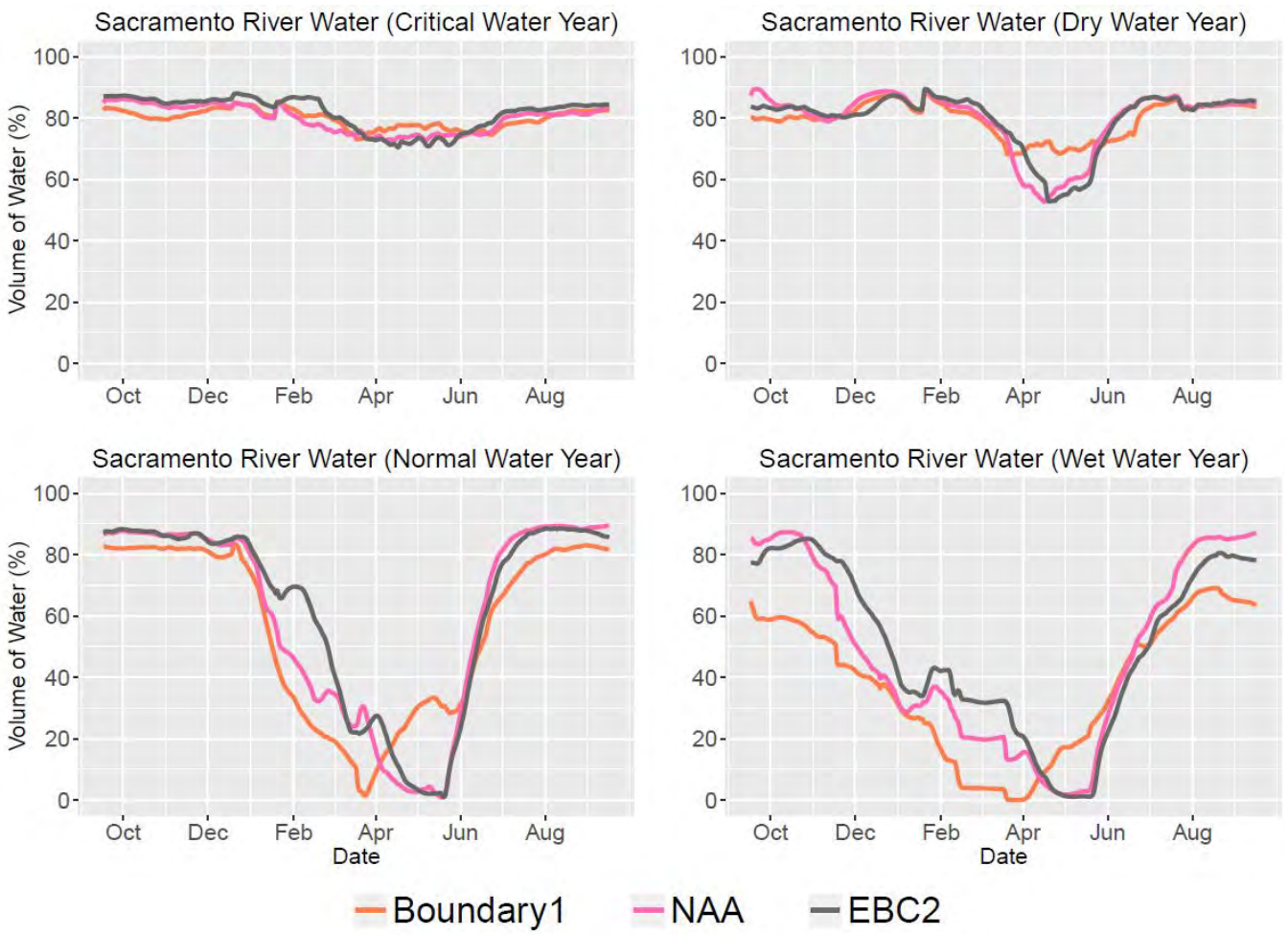

Figure 15. Source fractions of Sacramento River water at PP#1 as modeled by DSM2. Each figure represents the average daily source fraction of Sacramento River water averaged for a given water year type.

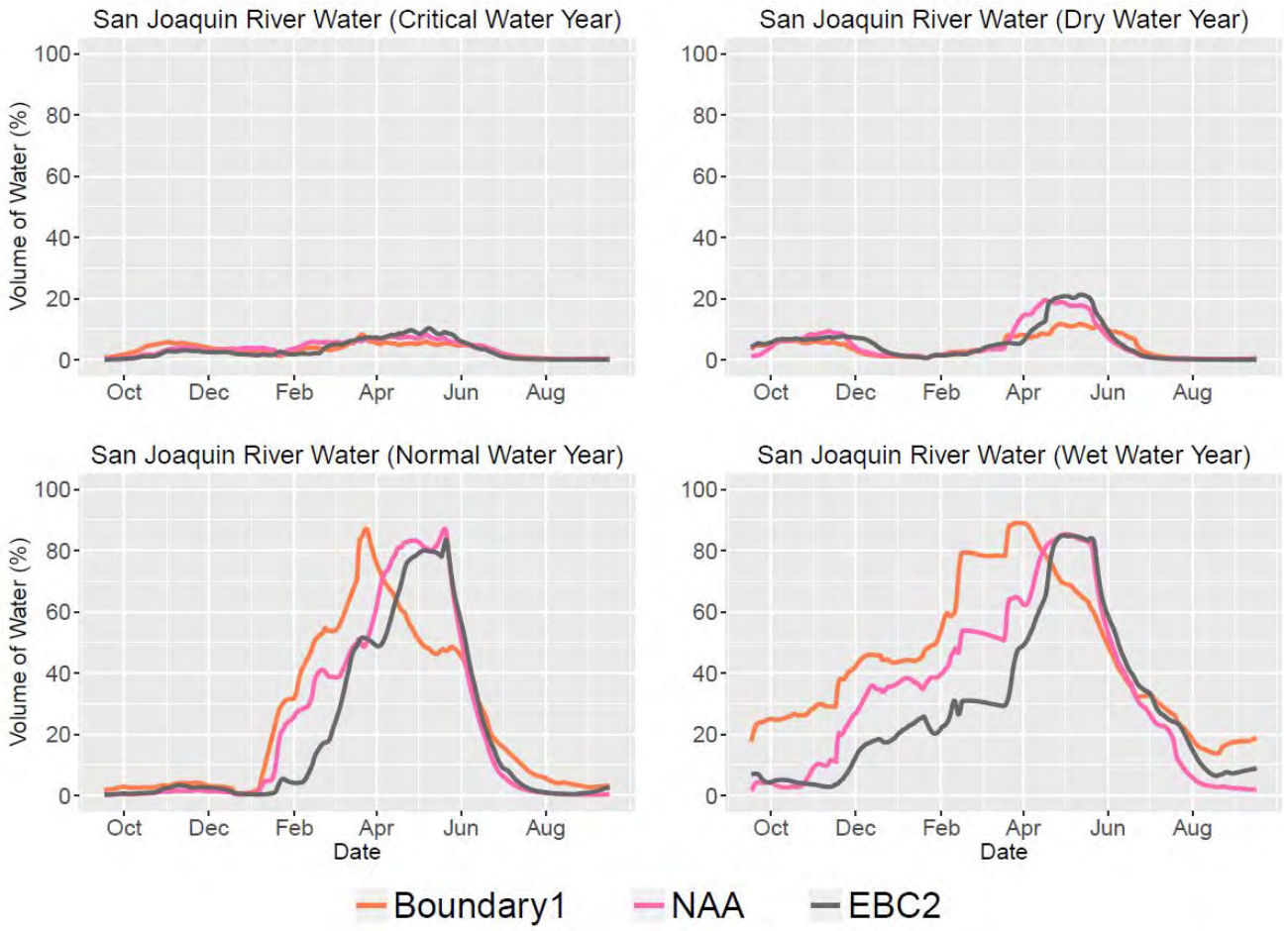

Figure 16. Source fractions of San Joaquin River water at PP#1 as modeled by DSM2. Each figure represents the average daily source fraction of San Joaquin River water averaged for a given water year type.

The decrease in the simulated amount of Sacramento River water at the City's intake for the B1 scenario is a result of the export of substantial volumes of Sacramento River water from the NDD. Source water fingerprints indicate that the total volume of water that is exported from the Delta over the 16-year simulation period is 74.9 million acre-feet (maf) for EBC2, 70.1 maf for the NAA, and 83.1 maf for Scenario B1; although the total volume of water exported from the Delta in Scenario B1 is approximately 11 % greater than under existing conditions, the volume of Sacramento River water exported increases by 56% relative to existing conditions. For normal and wet water years, the volume of Sacramento River water exported under the B1 scenario exceeds the EBC2 scenario by 73% and 182%, respectively.

c. The California WaterFix Project will increase the residence time of water in the South and Western Delta, reducing flushing and resulting in degraded water quality.

The California WaterFix Project will affect residence times both by changing the point of diversion within the Delta and by increasing the amount of water diverted from the Delta. The WaterFix Project will allow diversions to occur directly from the Sacramento River via three new proposed NDD intakes. As shown above, this will result in the export of Sacramento River water directly from the Delta before it has the opportunity to flow into and through the Delta and mix with water from other sources; in effect, the NDD will reduce inflows to the Delta and will reduce the volume of exports from the South Delta pumps.[26] Reducing inflows to the Delta (and reducing exports from within the Delta) will result in increased residence times for water within the Delta. This effect will be most notable in the South Delta, where the NDD diversions will reduce the amount of Sacramento River water in the South Delta relative to existing conditions. Thus, relative to existing conditions, WaterFix Scenario B1 will reduce the amount of "flushing" that has occurred in the past when exports from the South Delta diversion locations acted to "pull" Sacramento River water into the South Delta. This is confirmed by Exponent's analysis of the source of water in the South Delta, as shown in Section 6b, which

[26] Note that DWR appears to agree that diversions from the NDD can be considered to reduce inflows to the Delta and to reduce exports from the Delta, as they have proposed the NDD exports would be subtracted from the exports and subtracted from Delta inflows for the purposes of calculating the E/I ratio of D-1641.

shows less Sacramento River water in the South Delta under Scenario B1 than under existing conditions.

d. WaterFix operations will cause an increase in salinity and will reduce the quality of water, and the number of days useable water is available, at PP#1.

The WaterFix will have adverse effects on water quality at PP#1 under the Boundary 1 scenario. Model results show that salinity modeled at PP#1 for the Boundary 1 scenario will be higher than salinity for the existing condition (EBC2) model scenario.[27] The average and maximum simulated salinity (EC) levels at PP#1 for the existing condition (EBC2) scenario are 105 mg/L and 395 mg/L, respectively. For the NAA scenario, the average and maximum salinity levels are 105 mg/L and 462 mg/L, respectively. For WaterFix Scenario B1, the average and maximum simulated salinity levels are 114 mg/L and 681 mg/L, respectively, an increase of 8% and 47% relative to current conditions. Thus, the average salinity at PP#1 (the City's primary water source) will increase relative to existing conditions; however, long-term averages by definition average out shorter-term differences or differences in salinity levels between different year types. As shown below, changes in salinity will decrease the availability of water to the City in some years to a greater extent than in other years.

Exponent used the EBC2 scenario to characterize water quality at PP#1 under current conditions; simulated water quality under the EBC2 scenario was compared to simulated water quality under the B1 and NAA scenarios. Tables 2 and 3 provide the number of days, calculated from DWR's model results, that daily average water quality is predicted to be *above* the chloride thresholds of 150 mg/L and 250 mg/L.[28] Under the existing conditions scenario (EBC2), salinity is above the 150 and 250 mg/L chloride thresholds 33% and 7% of the time, respectively. The B1 scenario results in 27 and 39 additional days above the 250 mg/L chloride

[27] As Jennifer Pierre stated in her oral testimony before the SWRCB on July 29, 2016, the Boundary 1 model scenario can be used as a basis for assessment of harm.

[28] Although the D-1641 thresholds of 150 mg/L and 250 mg/L are not applied directly at the location of the City's intake, these thresholds are measures of the suitability of water for M&I uses.

threshold for dry and normal years compared to the EBC2 scenario, equivalent to a 59% and 55% increase, respectively.

Table 2. Number of days per year average daily chloride concentration is above 150 mg/L at PP#1 from DWR model results for the time period 1975–1991.

Year Type	EBC2	NAA	B1
All	120	108	132
Critical	172	159	184
Dry	104	84	128
Normal	112	118	162
Wet	77	63	50

Table 3. Number of days per year average daily chloride concentration is above 250 mg/L at PP#1 from DWR model results for the time period 1975–1991.

Year Type	EBC2	NAA	B1
All	25	33	36
Critical	32	44	34
Dry	19	27	46
Normal	32	54	71
Wet	15	10	4

Table 4 shows the change, relative to existing conditions, in the number of days per year that water quality would be below these salinity thresholds for the NAA and B1 scenarios. A positive value indicates that salinity is predicted to remain *below* the threshold for *more* days relative to the existing condition (EBC2) (i.e., model results predict an improvement in water quality relative to the baseline scenario). A negative value indicates that salinity will be *above* the threshold for that many more days (i.e., model results predict adverse impacts relative to the baseline scenario).

Table 4. The change, relative to existing conditions, in the average number of days per year chloride concentrations at PP#1 are below thresholds of 100 mg/L and 250 mg/L for scenarios NAA and B1. Bold values indicate an adverse water quality impact relative to existing conditions. Results computed from DWR model results for the time period 1975–1991.

	150 mg/L		250 mg/L	
Year Type and Percent Occurrence[a]	NAA	B1	NAA	B1
All	12	**-12**	**-8**	**-11**
Critical (16%)	13	**-12**	**-12**	**-2**
Dry (22%)	20	**-25**	**-7**	**-27**
Normal (BN 18%, AN 15%)	**-6**	**-50**	**-21**	**-39**
Wet (29%)	15	28	6	11

Source: The frequency of occurrence was calculated from the 95-year record from 1921–2015 (see Brentwood-108). Above normal (AN) and Below Normal (BN) water years were combined for this analysis.

Table 4 shows that during critical, dry, and normal years operational Scenario B1 is predicted to result generally in degradation of water quality relative to the existing condition (EBC2) scenario. More specifically, when operating under the B1 scenario the threshold will be *exceeded* by the following number of additional days relative to the existing condition (EBC2) scenario:

- 12 days during critical years, 25 days during dry years, and 50 days during normal years at the 150 mg/L chloride threshold
- 2 days during critical years, 27 days during dry years, and 39 days during normal years at the 250 mg/L chloride threshold

Under Scenario B1 operations, the reliability of the City's primary water supply would be compromised. As shown in Table 4 and at the 150 mg/L threshold, Scenario B1 of the WaterFix project would result in the loss of 50 useable water days on average during normal (above normal and below normal) water years, and 25 useable water days on average during dry years, relative to existing conditions.

Over a longer time period, the loss of useable water days will be cumulative and can be estimated using the distribution of year types in the historical record. Assuming the frequency of year types will be the same as in the past (a questionable assumption, given climate change), dry, critical, and normal years will constitute approximately 55% of the water years in the future (as these year types accounted for 55% of the years between 1921 and 2016). Using the average number of days that water will be above the 150 mg/L chloride threshold shown in Table 3, we calculate that the WaterFix Project could, over a 50-year project implementation period, result in the loss at PP#1 of as many as 946 days of useable water in critical, dry, and normal year types. This loss of water is equivalent to a total of more than 2.5 years of water during the 35 critical, dry, and normal water years that would be expected in a 50-year period (or 7% of the time during those year types), assuming that the distribution of year types in the future is similar to the distribution in the historical record. Although an increase in usability is predicted during wet years, it would not offset the loss of days in critical, dry, and normal years. Thus, we conclude that the degradation in water quality of the City's primary water supply is significant, and as detailed in Brentwood-1 would necessitate additional purchases of water from outside sources and/or significant changes in the City's water treatment facilities.

In addition to increases in chloride concentrations (i.e., salinity), the City is concerned about increases in bromide concentrations that will be caused by the proposed project. The RDEIR/SDEIS analyzed bromide concentrations near the location of PP#1's intake in Old River at Rock Slough and notes that

> *"multiple interior and western Delta assessment locations would have an increased frequency of exceedance of 50 µg/L [bromide], which is the CALFED Drinking Water Program goal for bromide as a long-term average applied to drinking water intakes… These locations [include] Old River at Rock Slough… Similarly, these locations would have an increased frequency of exceedance of 100 µg/L [bromide], which is the*

concentration believed to be sufficient to meet currently established drinking water criteria for disinfection byproducts."[29]

Appendix B to the RDEIR/SDEIS presents the average bromide concentrations at PP#1 for all years of the modeled record and during a drought period specified as WY 1987–WY 1991. Appendix B to the RDEIR/SDEIS shows that the frequency of exceedance of the 100 µg/L bromide criterion at the PP#1 is 97% under the NAA scenario, 98% under EBC2, and 100% under the H3 scenario; the RDEIR/SDEIS further notes that bromide concentrations are generally correlated with chloride concentrations.[30] As noted above, chloride concentrations at PP#1 will increase significantly for WaterFix Scenario B1; accordingly, bromide concentrations at PP#1 intake are expected to increase significantly. Yet, the RDEIR/SDEIS concludes that impacts due to bromide are "less than significant."[31] Given the significant increase in chloride concentrations that is simulated to occur for WaterFix Scenario B1, and given the relationship between chloride and bromide concentrations in the Delta, this conclusion is not credible.

[29] See Exhibit SWRCB-3 (RDEIR/SDEIS) pp. 4.4.4-8:9

[30] SWRCB-3 (RDEIR/SDEIS) pp. B-85.

[31] SWRCB-3 (RDEIR/SDEIS) pp. ES-43. The effects on chloride concentrations are listed as "LTS" or "less than significant" for Alternative 4 in the RDEIR/SDEIS Executive Summary, even though the same alternative was determined, using the same model runs, to have "significant and unavoidable" impacts to salinity in the western Delta in 2013; the basis for this change relative to the findings for Alternative 4 in the 2013 EIR/EIS is unclear.

7. Opinion 3: Compliance with water quality standards is likely to become more challenging in the future, and WaterFix will degrade the water quality of the City's water supply.

a. Compliance with D-1641 water quality standards is likely to be more challenging in the future than under current conditions.

As noted above, the changes in hydrodynamics and water quality in the Delta resulting from WaterFix will degrade water quality PP#1, the primary source of surface water to the City. Model simulations performed by DWR illustrate that water quality will be degraded regardless of whether the Delta after WaterFix implementation is in compliance with water quality and flow criteria.[32]

DWR's evaluation of regulatory compliance for current conditions is not based upon modeling but rather upon a qualitative discussion of compliance in recent years. DWR's evaluation of compliance with water quality criteria in recent years excludes periods during which Temporary Urgency Change Petitions (TUCPs) were issued by the State Board. DWR asserts that "To the extent that recent drought conditions suggest future SWP/CVP operations may require relaxing water quality standards to avoid exceedances, my testimony shows that historical hydrology over the last several drought years are truly unprecedented"[33] and that drought periods like the recent years are "statistical outliers from what would be within the expected range of conditions."[34] Notably absent from DWR's testimony is any discussion or consideration of whether the drought conditions witnessed in recent years are part of a "new normal" instead "unprecedented" "statistical outliers." Indeed, it seems contradictory that DWR incorporates sea

[32] As noted above, flow criteria have not yet been established that will govern conditions within the Delta after implementation of the WaterFix project. Thus, it is not currently possible to determine which operational scenarios will result in compliance with the new (anticipated) flow criteria for the Delta or how the WaterFix project will be operated to comply with these criteria. The evaluations in this section focus on compliance with existing water quality and flow criteria.

[33] See Exhibit DWR-61, pp. 8:3–8.

[34] See Exhibit DWR-61, pp. 13:20–22.

level rise (one outcome of climate change) in their modeling and evaluation of the proposed WaterFix Project at the same time they appear to assume that recent drought conditions will not be repeated in the future.

Climate change, and in particular sea level rise, is expected to lead to increased salinity within the Delta in the future. As noted in DWR-4 (page 30), the recent drought years were among the warmest and driest years on record. In addition, DWR-4 (page 31) shows that snowfall patterns during 2012-2015 resulted in some of the lowest April 1 snowpack percent of average on the historic record. DWR's own research indicates that the loss of Sierra snowpack is expected to be significant by the end of the current century, and that climate change is expected to enhance variability of weather patterns throughout the state, which can in turn lead to longer and more severe droughts (Brentwood-116). In my opinion and given scientific literature regarding climate change, these trends are not likely to have occurred by chance alone but are likely to be exacerbated in the future.

In light of potential changes in hydroclimatic changes, compliance with existing water quality criteria is expected to be more difficult in the future than it is now, even without WaterFix implementation. The WaterFix project will exacerbate the degradation of water in the Delta by exporting more water from the Delta than occurs under existing conditions (exports would increase significantly under scenarios H3, H4, and B1), and increasing both the amount and proportion of high quality Sacramento River flows removed from the system.

b. WaterFix Project operations will result in additional exceedances of objectives for municipal and industrial beneficial uses

DWR used modeling to evaluate compliance with salinity and flow objectives for the NAA and proposed project scenarios (H3, H4, B1, and B2); modeling was not used to evaluate compliance for existing conditions. DWR states that the "modeling provides information in support of how the CWF can be operated while continuing to meet DWR and Reclamation's

responsibilities under the Water Rights Decision 1641 objectives (D-1641)."[35] However, DWR's position on whether the WaterFix project will comply with existing standards is contradictory. DWR states in portions of its petition that a series of existing regulatory requirements will not change, including terms imposed through D-1641 and terms in the BiOps and State CESA Permits[36]; however, DWR states in the same testimony that the B1 scenario does not include "additional spring Delta outflow, additional OMR flows, existing I/E [*sic*] ratio, and the existing Fall X2 flow requirement imposed in the existing BiOp for Delta Smelt."[37]

Exponent evaluated the proposed operational scenario B1, the existing condition (EBC2), and the future no action alternative (NAA) to assess the frequency of compliance with the water quality standards specified in D-1641 for M&I beneficial uses. Exponent used DSM2 model results provided by DWR to evaluate compliance with the D-1641 water quality standards for the 16-year simulation period, which included all water year types, from one of the wettest years on record (1983) to one of the driest (1977). Results are discussed below.

Part 1: Evaluation of compliance with D-1641 Table 1 requirements for 250 mg/L chloride

As detailed in Table 1 in Section 3d, D-1641 requires that the maximum mean daily chloride concentration remain below 250 mg/L at five locations within the Delta. Exponent used DSM2 model results provided by DWR to evaluate whether the maximum mean *daily* chloride objective of 250 mg/L is simulated to be met at PP #1. The number of days the WQOs are not met are shown for each year for the 16-year modeled record in Table 5. There exists significant variability from year to year between the different scenarios; however, Scenario B1 most frequently exceeds the threshold value for the most number of days. In the dry year of 1989, for

[35] See Exhibit DWR-66, pp. 2:20–22.

[36] Exhibit DWR-51, pp. 12:17–13:4 states that "Existing regulatory requirements that will not change include: Terms imposed through D-1641 (assigning responsibility for WQCP objectives); Water Quality Objectives, Outflow Objectives, Delta Cross Channel Gate Operations, E/I ratio, Rio Vista Minimum Flow Objectives. Terms in BiOps and State CESA Permits; San Joaquin River Inflow/Export (I/E) ratio, OMR flows, Fall X2 flow, Additional Delta Cross Channel Gate Operations, HORB and agricultural rock barriers operations."

[37] See Exhibit DWR-51, pp. 13:20–22.

example, Scenario B1 exceeds the threshold for 124 days that year, and during the critical water year of 1991 the threshold is exceeded 117 days by Scenario B1.

Table 5. Number of days in each water year that the 250 mg/L chloride threshold for municipal and industrial beneficial uses is not met at PP#1 based on DWR model results.

Water Year	Year Type	Total Days	EBC2	NAA	B1
1976	Critical	366	37	0	0
1977	Critical	365	8	50	16
1978	Normal	365	10	87	105
1979	Normal	365	0	17	64
1980	Normal	366	87	57	44
1981	Dry	365	0	0	0
1982	Wet	365	3	12	10
1983	Wet	365	34	0	0
1984	Wet	366	0	0	0
1985	Dry	365	0	0	15
1986	Wet	365	23	26	6
1987	Dry	365	0	0	46
1988	Critical	366	1	4	14
1989	Dry	365	77	106	124
1990	Critical	365	40	60	25
1991	Critical	365	76	107	117

The data from Table 5 are summarized in Table 6 by water year type, and an overall average number of days the 250 mg/L chloride threshold is exceeded for each scenario is calculated in the bottom row. While the year-to-year variability is muted somewhat by the aggregation, several general trends are clear. During dry and above and below normal water years and for Scenario B1, the 250 mg/L chloride threshold is exceeded 46 and 71 days per year on average, respectively (Table 6). For critical water years, NAA is in exceedance most often with an average of 44 days, and existing conditions (EBC2) exceed the threshold most often during wet years (Table 6).

Table 6. Average days per year by water year type that the 250 mg/L chloride threshold for municipal and industrial beneficial uses is not met at PP#1 calculated from DWR model results.

	EBC2	NAA	B1
Critical	32	44	34
Dry	19	27	46
Normal	32	54	71
Wet	15	10	4
Average	25	33	37

DWR's model results show complying with the D-1641 250 mg/L water quality objective at PP#1 is challenging under both the existing conditions (EBC2) and the future no project (NAA) scenarios. As summarized in Table 6, DWR's model results show that compliance will occur less frequently under Scenario B1. For example, the number of days of non-compliance with the 250 mg/L chloride threshold more than doubles in dry and normal year types for Scenario B1 relative to existing conditions. Relative to the NAA, the number of exceedances for the 250 mg/L chloride threshold increases under Scenario B1 by about 70% in dry years and about 30% in normal years. Thus, DWR's own model results do not appear to support DWR's testimony that increased operations flexibility will result in greater compliance with water quality objectives in the future.

Part 2: Evaluation of compliance with D-1641 Table 1 requirements for 150 mg/L chloride

D-1641 includes WQOs for M&I beneficial uses of 150 mg/L to be met at either PP#1 or at Antioch, which is located in the San Joaquin River channel. D-1641 specifies that the "maximum mean daily" chloride concentration of 150 mg/L must be met for a specific number of days during the calendar year to be provided in "intervals of not less than two weeks duration" (see Table 1 in Section 3d).

Exponent used DSM2 model output to calculate the number of days per calendar year that compliance is achieved at the PP#1, which is also the City's primary source of surface water. Table 7 presents the results of the 150 mg/L threshold analysis, and illustrates that water quality

objectives are not met during two of the five critical water years in the 16-year model period for the Boundary 1 and NAA scenarios, or for one of the five critical water years under EBC2 scenario.

Table 7. Years of compliance from the 16-year modeled record with D-1641 WQOs for M&I Beneficial Uses WQOs at PP#1 for the 150 mg/L threshold averaged by water year type.

Water Year Type	Total Years	EBC2	NAA	B1
Critical	5	4	3	3
Dry	4	4	3	4
Normal	3	2	3	3
Wet	4	3	3	4

The impacts from the WaterFix Project on compliance at PP#1 appear subtle as shown in Table 7. Disaggregating the data yields more useful information. Although many years in the simulation period are technically in compliance with the D-1641 150 mg/L chloride threshold, the total number of days below the threshold, as counted in two-week consecutive intervals (as specified in D-1641) decreases significantly in certain years (Table 8). During WY 1979, a below normal year, Scenario B1 shows that salinity will be below the 150 mg/L threshold at PP#1 for 160 *fewer* days relative to existing conditions (EBC2), yet the objective of 175 days is still met for that year. Similarly, in WY 1981, a dry year, simulations indicate that salinity will be below the 150 mg/L threshold at PP#1 for 34 *fewer* days relative to existing conditions but the objective of 165 days will be met. During the normal water year of 1979, the B1 scenario reduces the number of days the chloride objective is met by as much as 160 days and 133 days compared to EBC2 and NAA, respectively, and yet still remains in compliance with D-1641.

Table 8. Number of days daily average salinity levels will be below 150 mg/L as indicated by DWR model results for the 16-year modeled record at PP#1. The D-1641 WQOs in terms of number of days for each year are indicated as "threshold criteria." Bold numbers indicated exceedance of threshold criteria.

WY	WYT	Threshold Criteria (days)	EBC2 (days)	NAA (days)	B1 (days)	Difference of B1 and EBC2 (days, %)		Difference of B1 and NAA (days, %)	
1976	Critical	155	291	366	301	10	3%	-65	-19%
1977	Critical	155	156	**145**	**112**	-44	-33%	-33	-26%
1978	Normal	190	243	239	**188**	-55	-26%	-51	-24%
1979	Normal	175	338	311	178	-160	-62%	-133	-54%
1980	Normal	190	**187**	202	242	55	26%	40	18%
1981	Dry	165	289	281	255	-34	-13%	-26	-10%
1982	Wet	240	299	298	287	-12	-4%	-11	-4%
1983	Wet	240	298	337	365	67	20%	28	8%
1984	Wet	240	366	357	366	0	0%	9	2%
1985	Dry	165	310	361	298	-12	-4%	-63	-19%
1986	Wet	240	**213**	**235**	254	41	18%	19	8%
1987	Dry	165	300	365	257	-43	-15%	-108	-35%
1988	Critical	155	217	263	250	33	14%	-13	-5%
1989	Dry	165	186	**159**	209	23	12%	50	27%
1990	Critical	155	164	165	168	4	2%	3	2%
1991	Critical	155	159	**132**	**138**	-21	-14%	6	4%

b. WaterFix Project operations will result in additional exports from the Delta and so degrade water quality.

D-1641 also includes a limitation on exports of water from the Delta. Specifically, D-1641 limits the amount of water that can be exported from the Delta to a fraction of the water that flows into the Delta. Currently, the export-to-inflow (E/I) ratio is defined to include all water exported from the Delta and all freshwater inflows to the Delta; however, as detailed in Section 3e, DWR and Reclamation propose to redefine the E/I ratio such that the water diverted from the NDD would not be included in either the exports (E) or the inflows (I) used to evaluate this objective. The proposed new method of determining the E/I ratio would reduce the value of (E/I), making it easier to export more water from the Delta. Indeed, if only the NDD were used to export water, the value of the proposed new E/I ratio would be zero—in effect, any limitation on the fraction of inflows to the Delta that could be exported from the Delta would be eliminated.

Table 9 summarizes the number of days that the E/I ratio would be exceeded for each modeled scenario in the 16-year model period (5,832 days). The results show that including the number of exceedances of the E/I ratio is larger when the NDD water exports are included in both total exports and total inflows. In contrast, redefining the E/I ratio to exclude the amount of water exported from the NDD reduces the frequency with which the E/I ratio would be exceeded. For example, the B1 scenario exceeds the E/I ratio 850 days when the ratio is calculated to D-1641 specifications (i.e., to include all exports and all inflows) but only 270 times when the NDD is removed from the equation.

Table 9. Number of days of E/I ratio exceedance for the 16-year modeled record and overall percentage of time in exceedance.

Scenario	EBC2[a]	NAA[a]	B1
Redefined (E/I) excluding NDD flows	481 (8.2%)	349 (6.0%)	270 (4.6%)
D-1641 specifications			850 (14.6%)

[a] Note that the E/I ratio does not change for the NAA and EBC2 scenarios because the NDD points do not exist for these scenarios.

As shown in Table 9, exceedances of the (E/I) ratio occur even in the existing condition (EBC2) and no action alternative (NAA). If the E/I ratio is evaluated for Scenario B1 using the same measure (i.e., including the water diverted from the NDD in both the exports and inflows), compliance with the E/I ratio declines with WaterFix operations. Excluding NDD exports and imports from the E/I ratio calculation has the effect of removing an important control on the amount of water exported from the Delta; it also has the effect of making it appear that the WaterFix Project will improve compliance with one of the many water quality objectives that apply to the Delta.

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Appendix A

Additional Figures and Tables

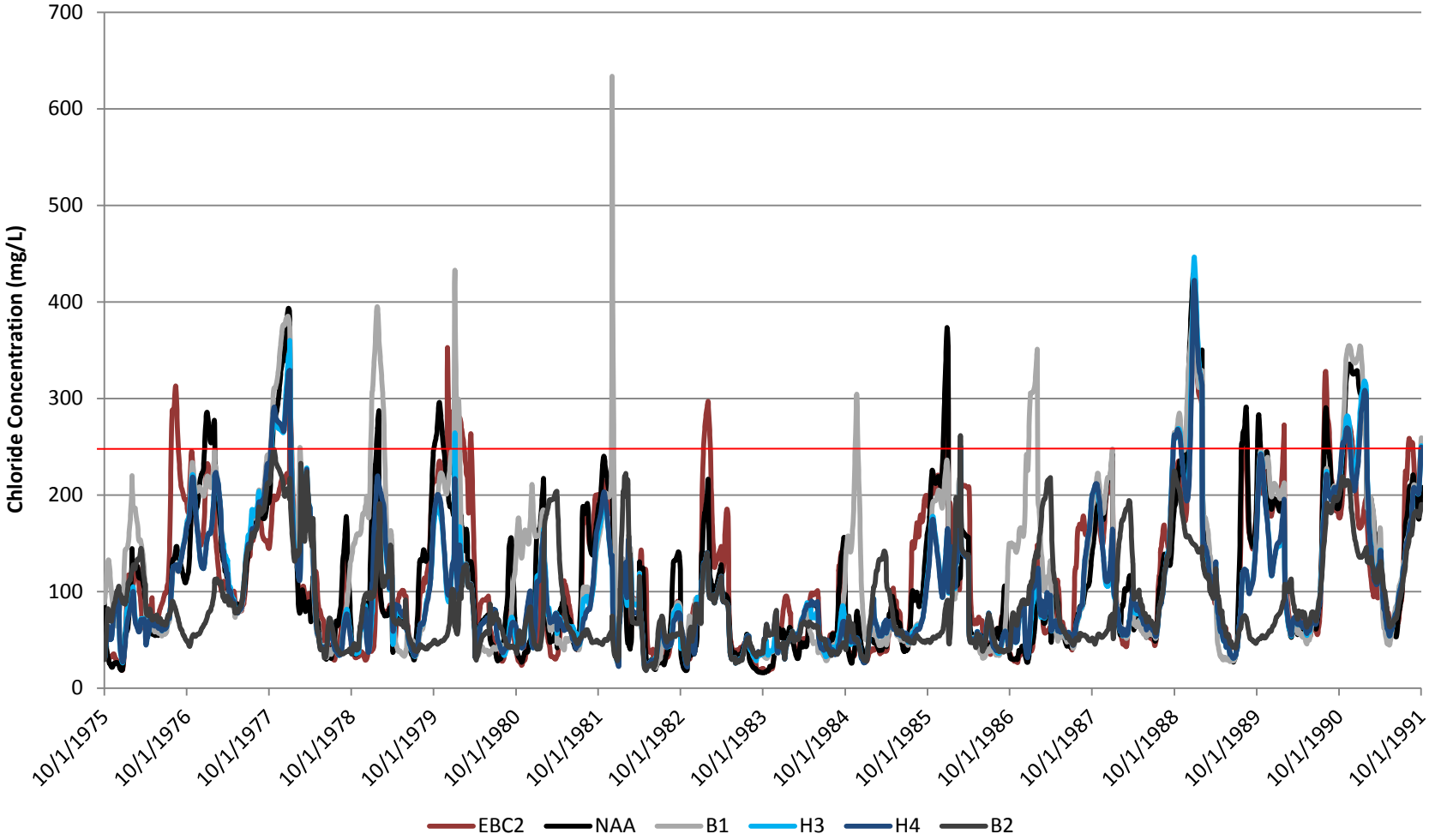


Figure A-4. Daily average chloride concentrations at PP#1 for WY 1975–WY 1991, from DWR's model results. The red line indicates the 250 mg/L chloride threshold of D-1641 (Note: colors may vary compared to Figure 4 in report, and entire modeled period included).

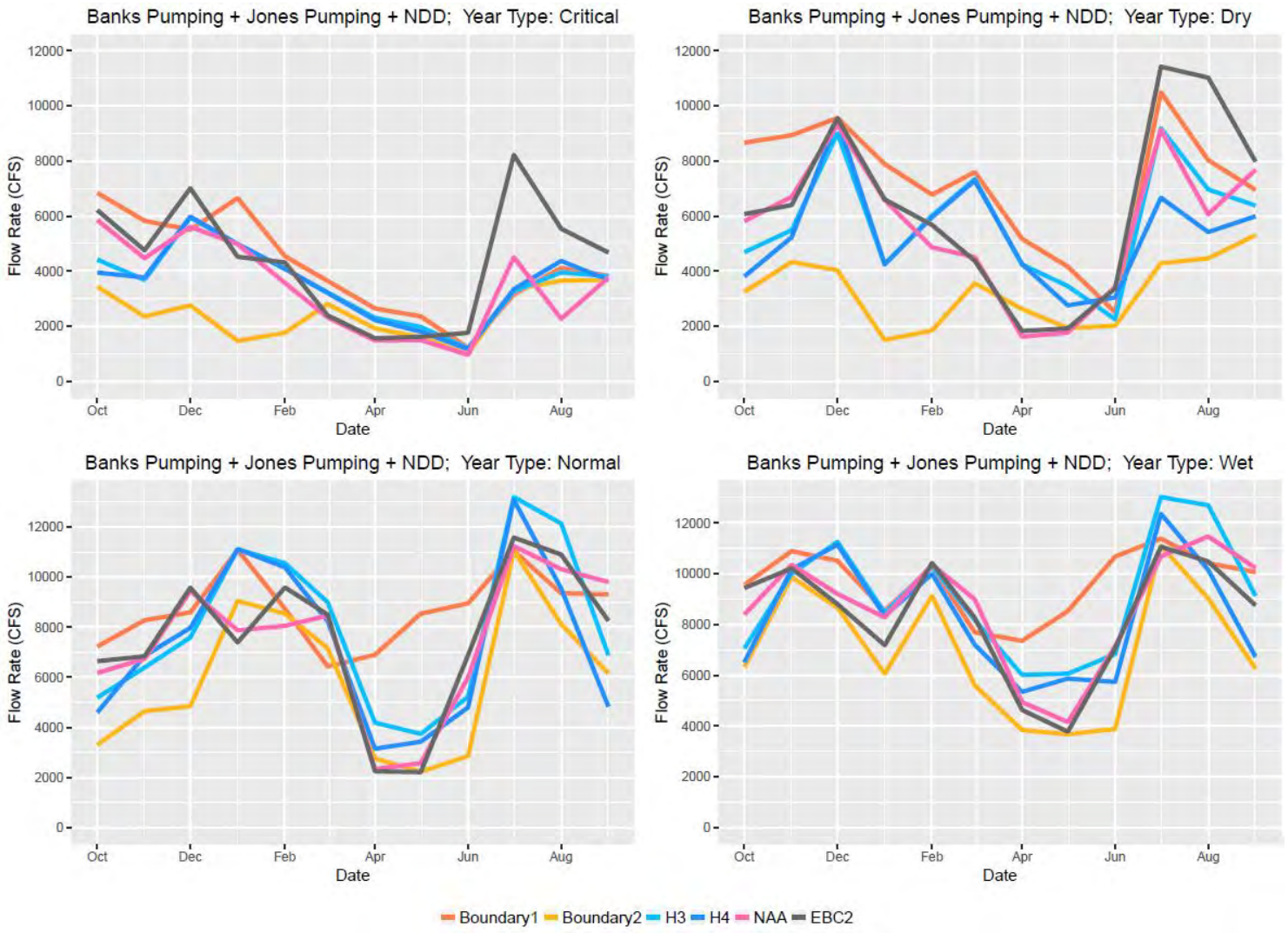


Figure A-1. Quantity of water that would be exported from the Delta under the model Scenarios EBC2, NAA, B1, H3, H4, and B2 as modeled by DSM2. Monthly average export flow rates are averaged by water year type (Note: The same data are included in Figure 14 of the report, but are presented differently).

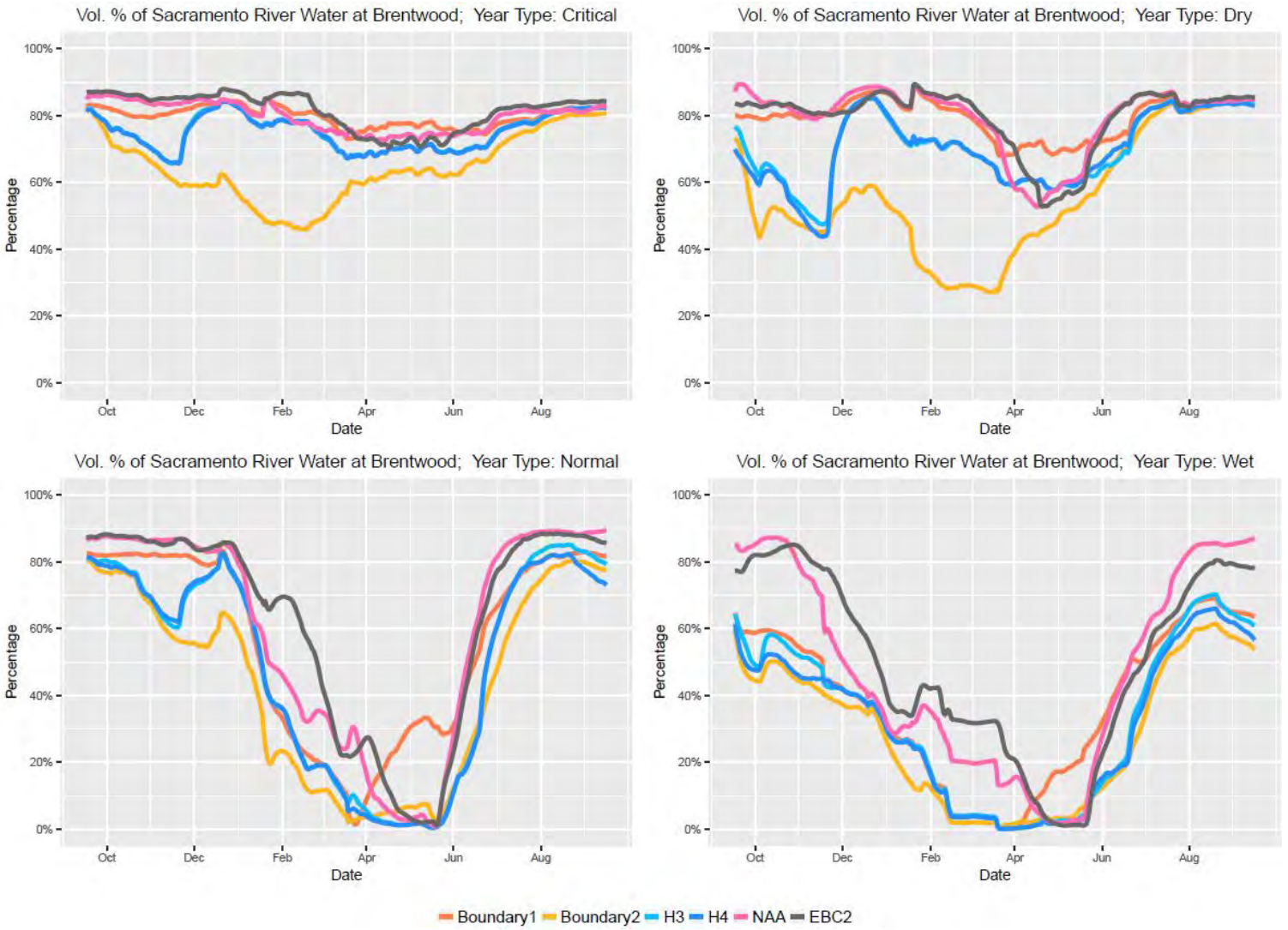


Figure A-2. Source fractions of Sacramento River water at the City's intake location as modeled by DSM2 using DWR's input files. Each figure represents the average daily source fraction of Sacramento River water averaged for a given water year type.

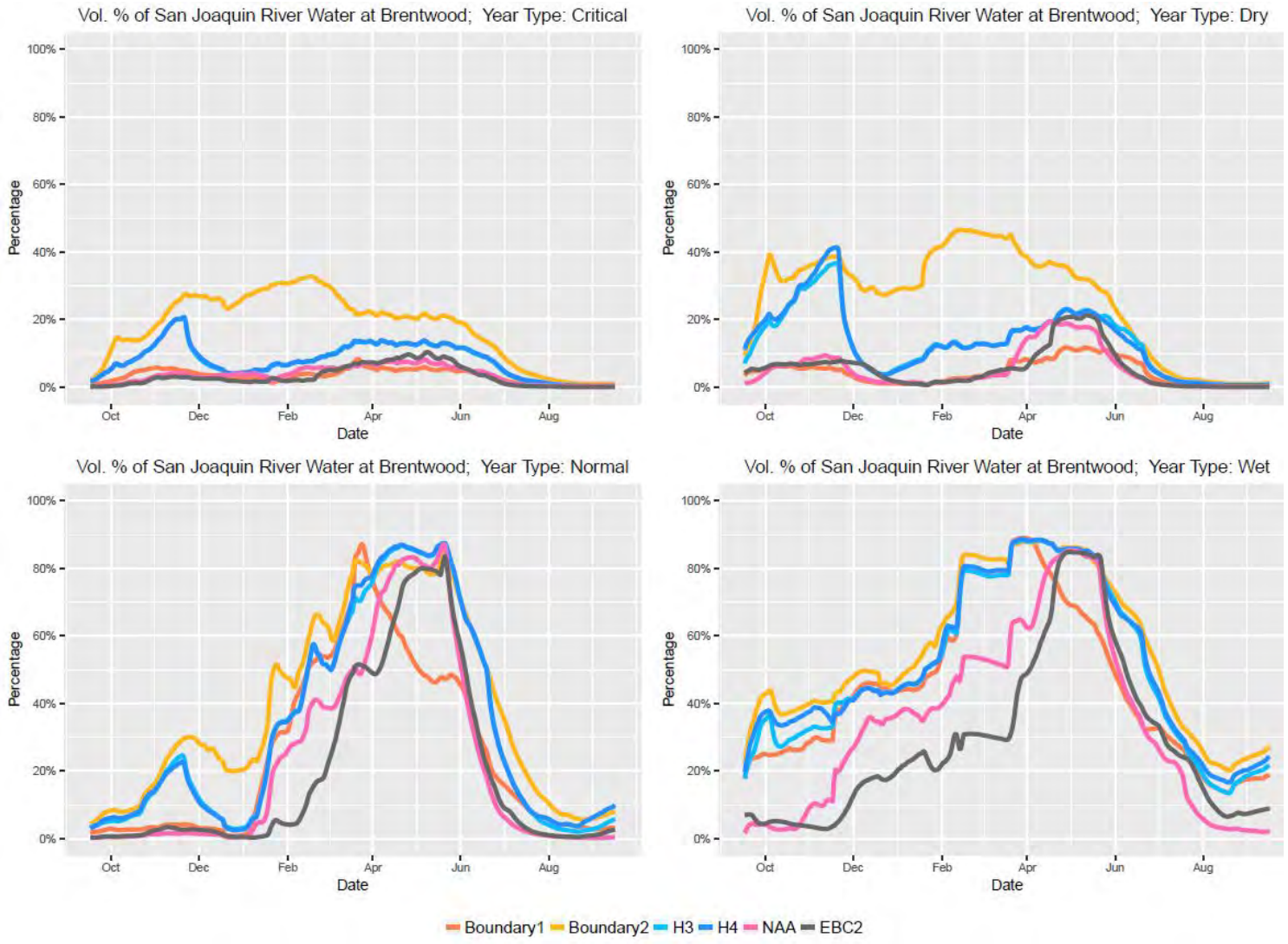


Figure A-3. Source fractions of San Joaquin River water at the City's intake location as modeled by DSM2 using DWR's input files. Each figure represents the average daily source fraction of San Joaquin River water averaged for a given water year type (Note: Font size changed).

Table A-1. Number of days per year average daily chloride concentration is above 150 mg/L from DWR model results for the time period 1975–1991.

Year Type	EBC2	NAA	B1	H3	H4	B2
All	120	108	132	60	85	85
Critical	172	159	184	148	146	84
Dry	104	84	128	48	50	67
Normal	112	118	162	98	99	67
Wet	77	63	50	33	34	20

Table A-2. Number of days per year average daily chloride concentration is above 250 mg/L from DWR model results for the time period 1975–1991.

Year Type	EBC2	NAA	B1	H3	H4	B2
All	25	33	39	20	19	2
Critical	32	44	34	23	21	0
Dry	19	27	46	23	22	0
Normal	32	54	71	32	31	6
Wet	15	10	4	1	1	1

Table A-3. Number of days in each water year that the 250 mg/L chloride threshold for municipal and industrial beneficial uses is not met at PP#1 based on DWR model results.

Water Year	Year Type	Total Days	EBC2	NAA	B1	H3	H4	B2
1976	Critical	366	37	0	0	0	0	0
1977	Critical	365	8	50	16	0	0	0
1978	Normal	365	10	87	105	92	94	17
1979	Normal	365	0	17	64	0	0	0
1980	Normal	366	87	57	44	4	0	0
1981	Dry	365	0	0	0	0	0	0
1982	Wet	365	3	12	10	0	0	0
1983	Wet	365	34	0	0	0	0	0
1984	Wet	366	0	0	0	0	0	0
1985	Dry	365	0	0	15	0	0	0
1986	Wet	365	23	26	6	2	2	3
1987	Dry	365	0	0	46	0	0	0
1988	Critical	366	1	4	14	8	7	0
1989	Dry	365	77	106	124	92	89	0
1990	Critical	365	40	60	25	12	12	0
1991	Critical	365	76	107	117	96	86	0

Table A-4. Years of compliance from the 16-year modeled record with D-1641 WQOs for M&I Beneficial Uses WQOs at PP#1 for the 150 mg/L threshold averaged by water year type.

		Model Scenarios					
Water Year Type	Total Years	B1	B2	H3	H4	NAA	EBC2
Critical	5	3	5	4	5	3	4
Dry	4	4	4	4	4	3	4
Normal	3	3	3	3	3	3	2
Wet	4	4	4	4	4	3	3

Table A-5. Number of days with daily average salinity levels below 150 mg/L as indicated by DWR model results for the 16-year modeled record at PP#1. The D-1641 WQOs in terms of number of days for each year are indicated as “threshold criteria.” Bold numbers indicated exceedance of threshold criteria.

WY	Criteria	EBC2	NAA	B1	H3	H4	B2
1976	155	291	366	301	356	357	366
1977	155	156	**145**	**112**	**149**	166	286
1978	190	243	239	**188**	197	200	194
1979	175	338	311	178	316	303	347
1980	190	**187**	202	242	291	308	366
1981	165	289	281	255	353	350	300
1982	240	299	298	287	316	313	330
1983	240	298	337	365	365	365	365
1984	240	366	357	366	366	366	366
1985	165	310	361	298	365	365	365
1986	240	**213**	**235**	254	304	304	338
1987	165	300	365	257	346	345	307
1988	155	217	263	250	296	293	291
1989	165	186	**159**	209	236	235	291
1990	155	164	165	168	222	217	301
1991	155	159	**132**	**138**	165	165	238

Table A-6. Number of days of E/I ratio exceedance for the 16-year modeled record (overall percentage of time in exceedance), based on DWR model results.

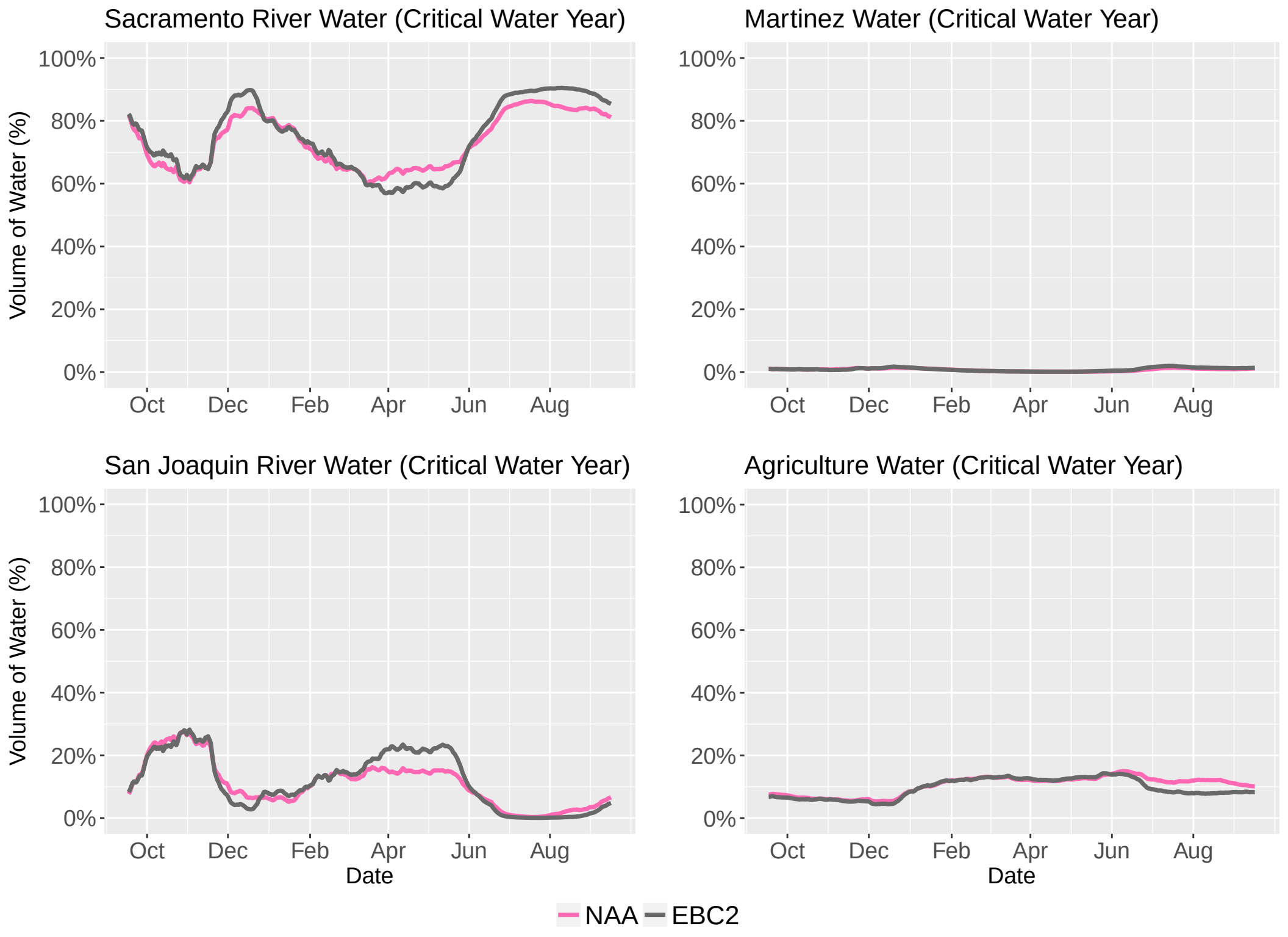
Scenario	EBC2	NAA	B1	H3	H4	B2
Redefined (E/I) excluding NDD flows	481 (8.2%)	349 (6.0%)	270 (4.6%)	144 (2.5%)	119 (2.0%)	32 (0.5%)
D-1641 specifications			850 (14.6%)	441 (7.6%)	359 (6.2%)	145 (2.5%)

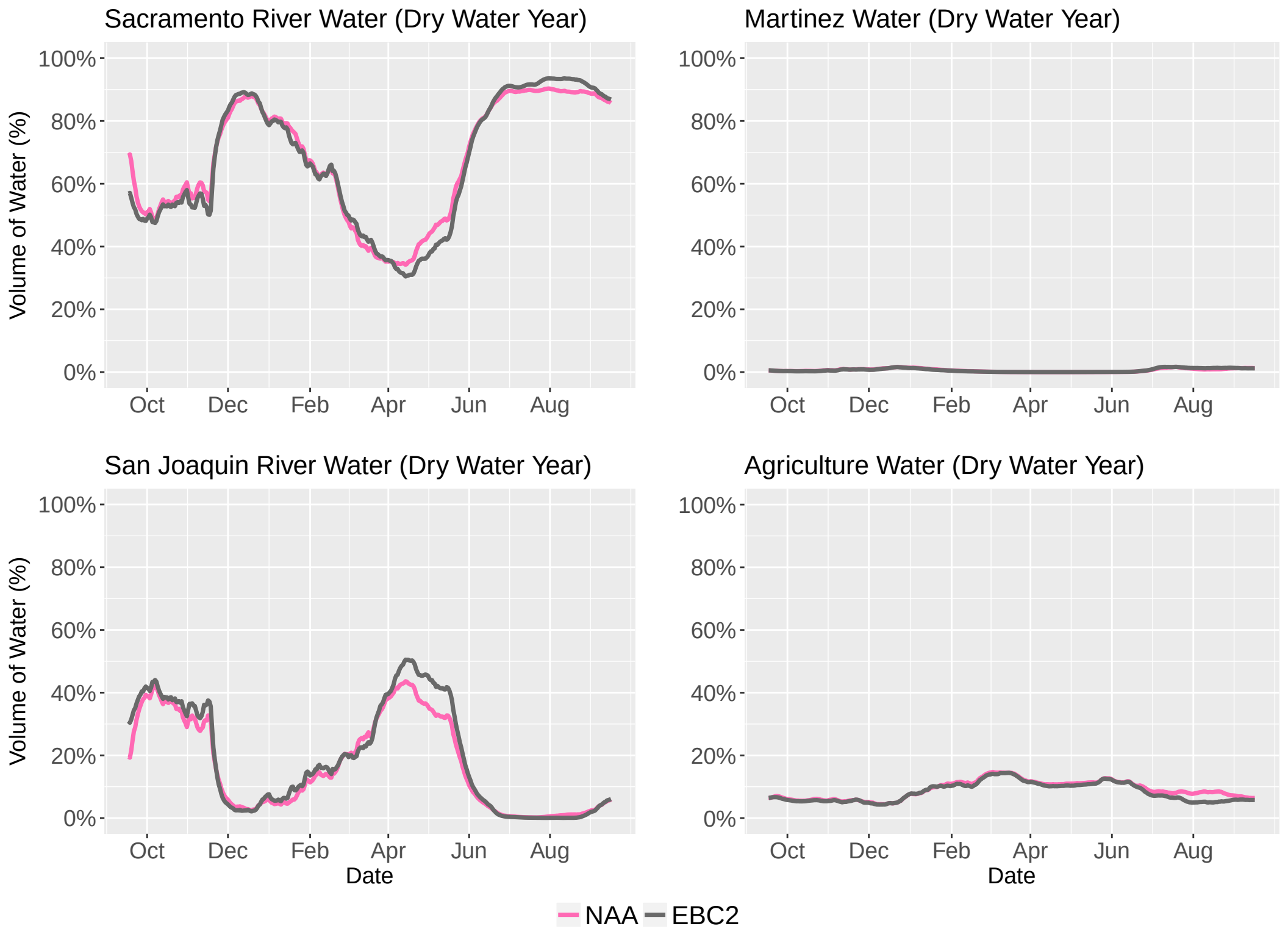
[a] Note that the E/I ratio does not change for the NAA and EBC2 scenarios because the NDD points do not exist for these scenarios.

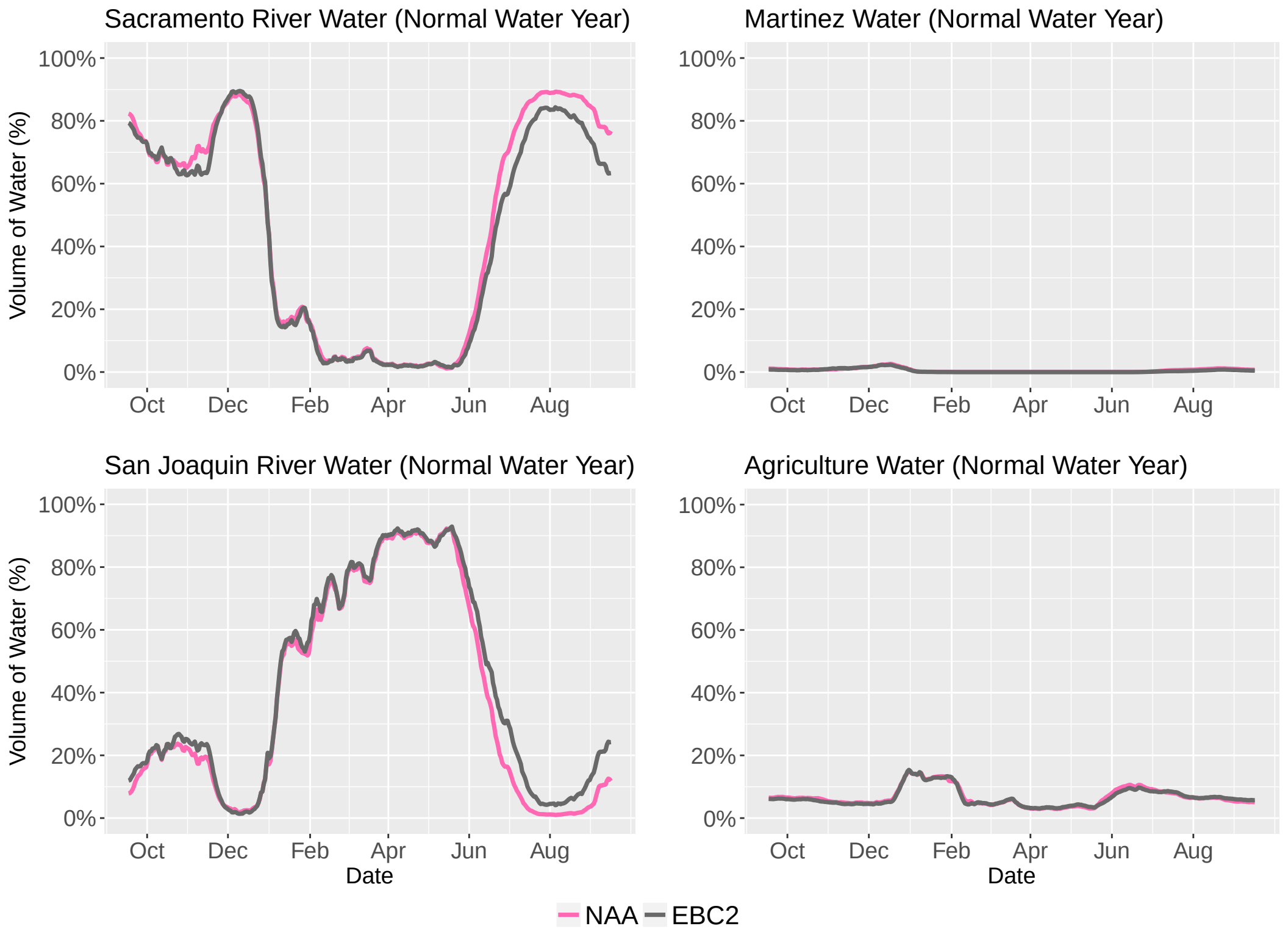
Attachment 3

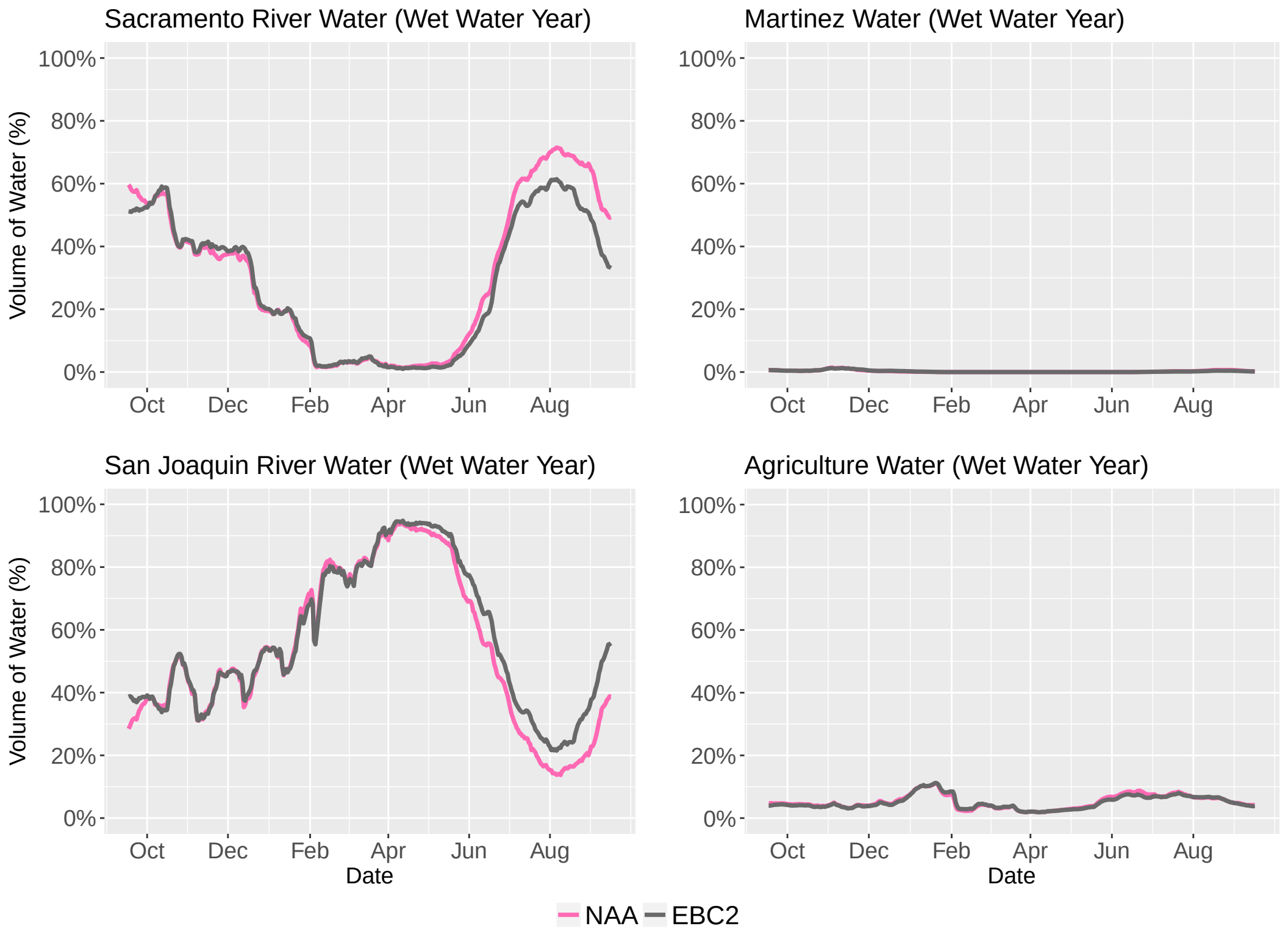
Source water fingerprinting at the City's intake and Buckley Cove for NAA and EBC2 scenarios during critical, dry, normal, and wet water year types

Source-water fingerprints at Stockton's Intake

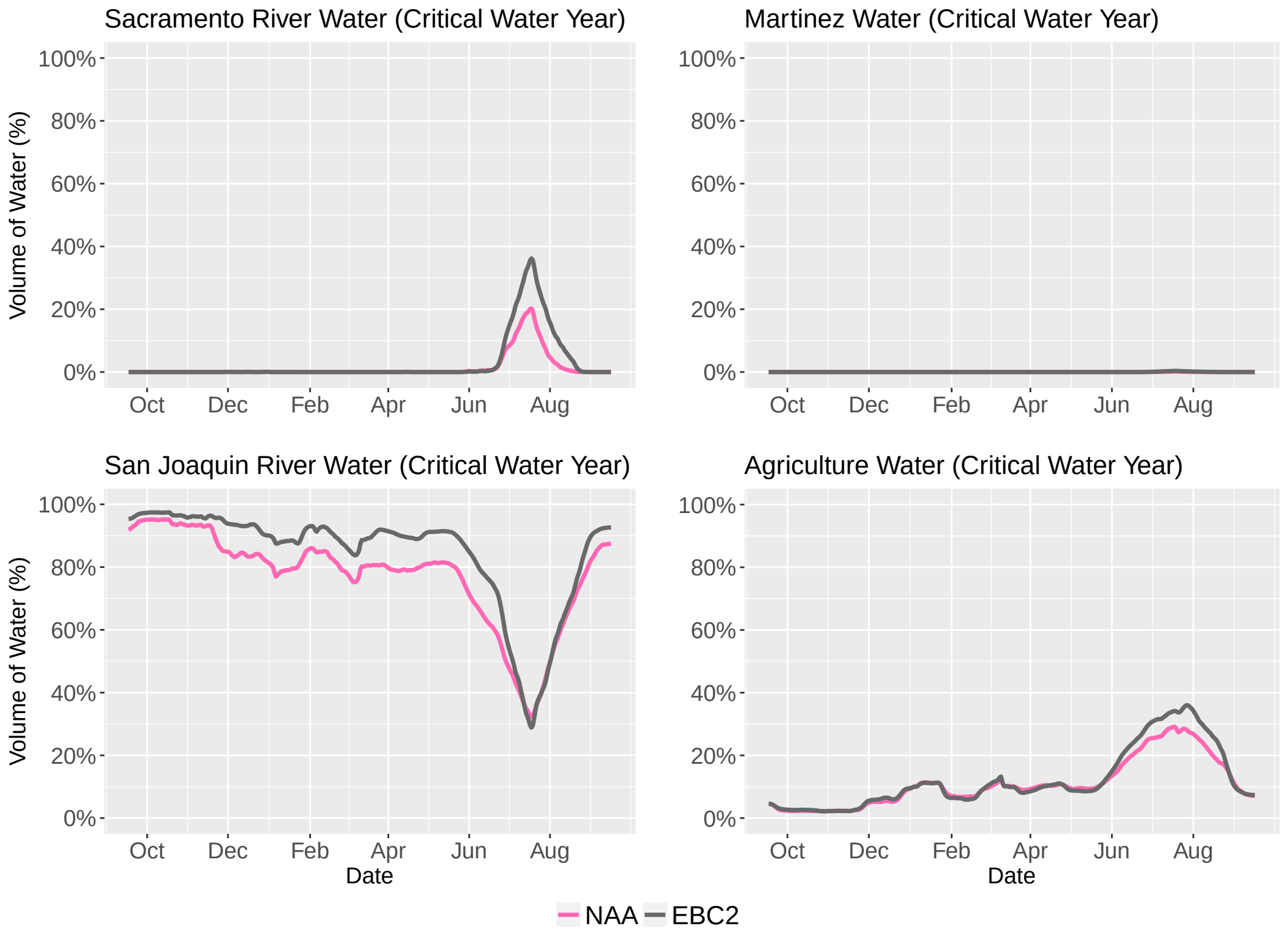

Sacramento River Water (Critical Water Year)
Martinez Water (Critical Water Year)
San Joaquin River Water (Critical Water Year)
Agriculture Water (Critical Water Year)
Volume of Water (%)
100%
80%
60%
40%
20%
0%
Oct
Dec
Feb
Apr
Jun
Aug
Date
NAA
EBC2

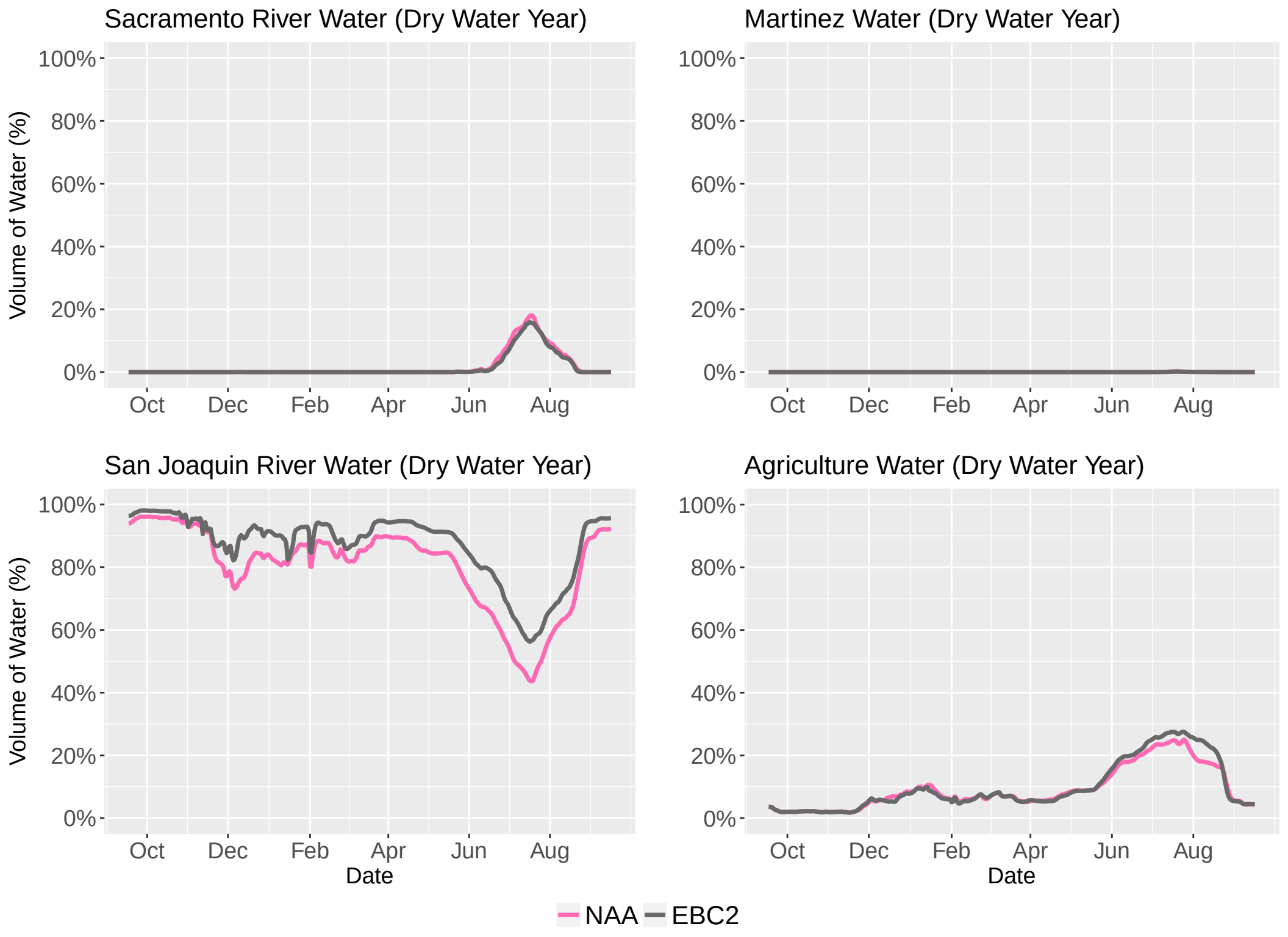

Sacramento River Water (Dry Water Year)
Martinez Water (Dry Water Year)
San Joaquin River Water (Dry Water Year)
Agriculture Water (Dry Water Year)
Volume of Water (%)
100%
80%
60%
40%
20%
0%
Oct
Dec
Feb
Apr
Jun
Aug
Date
NAA
EBC2

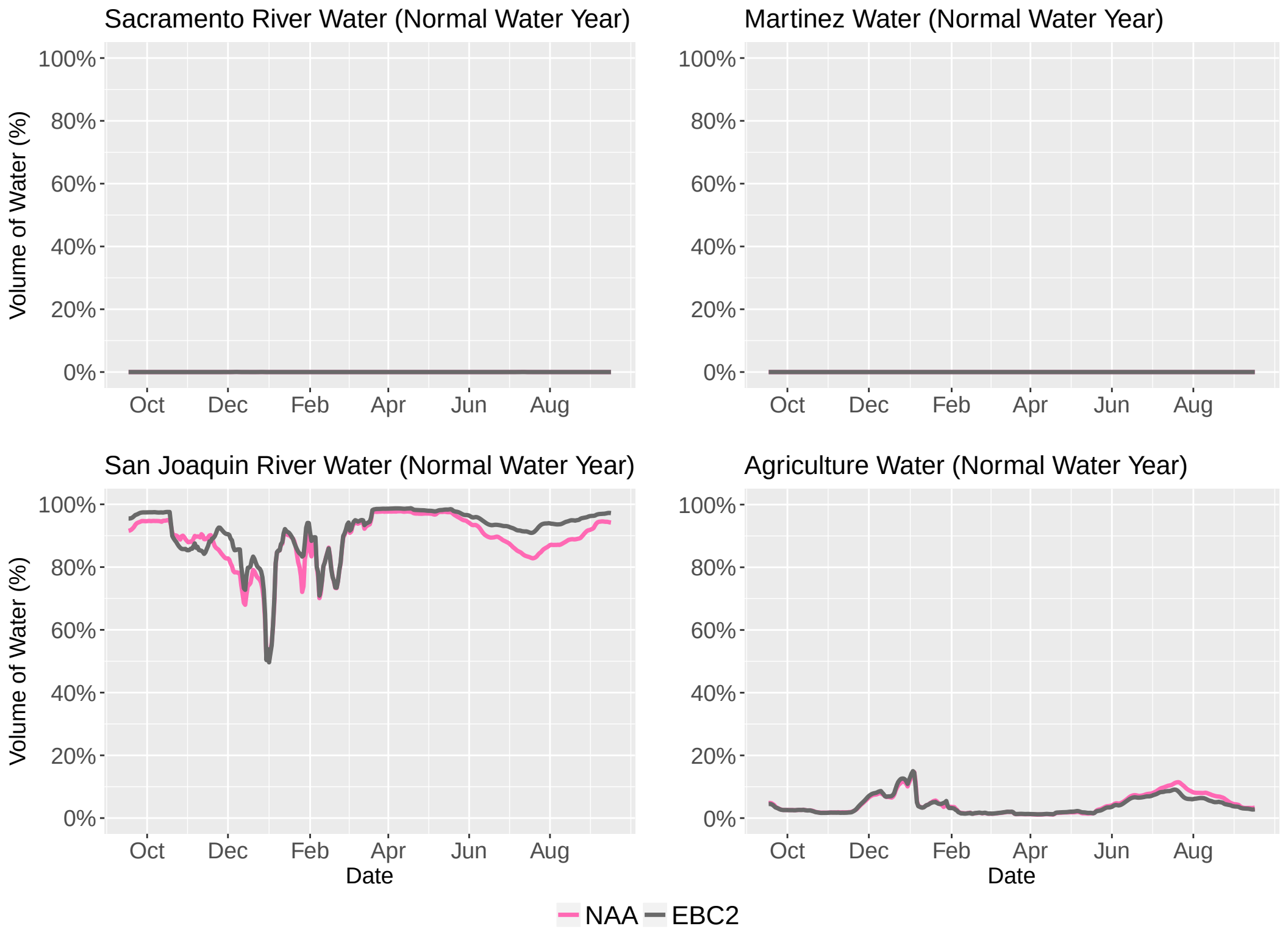

Sacramento River Water (Normal Water Year)
Martinez Water (Normal Water Year)
San Joaquin River Water (Normal Water Year)
Agriculture Water (Normal Water Year)
Volume of Water (%)
100%
80%
60%
40%
20%
0%
Oct
Dec
Feb
Apr
Jun
Aug
Date
NAA
EBC2

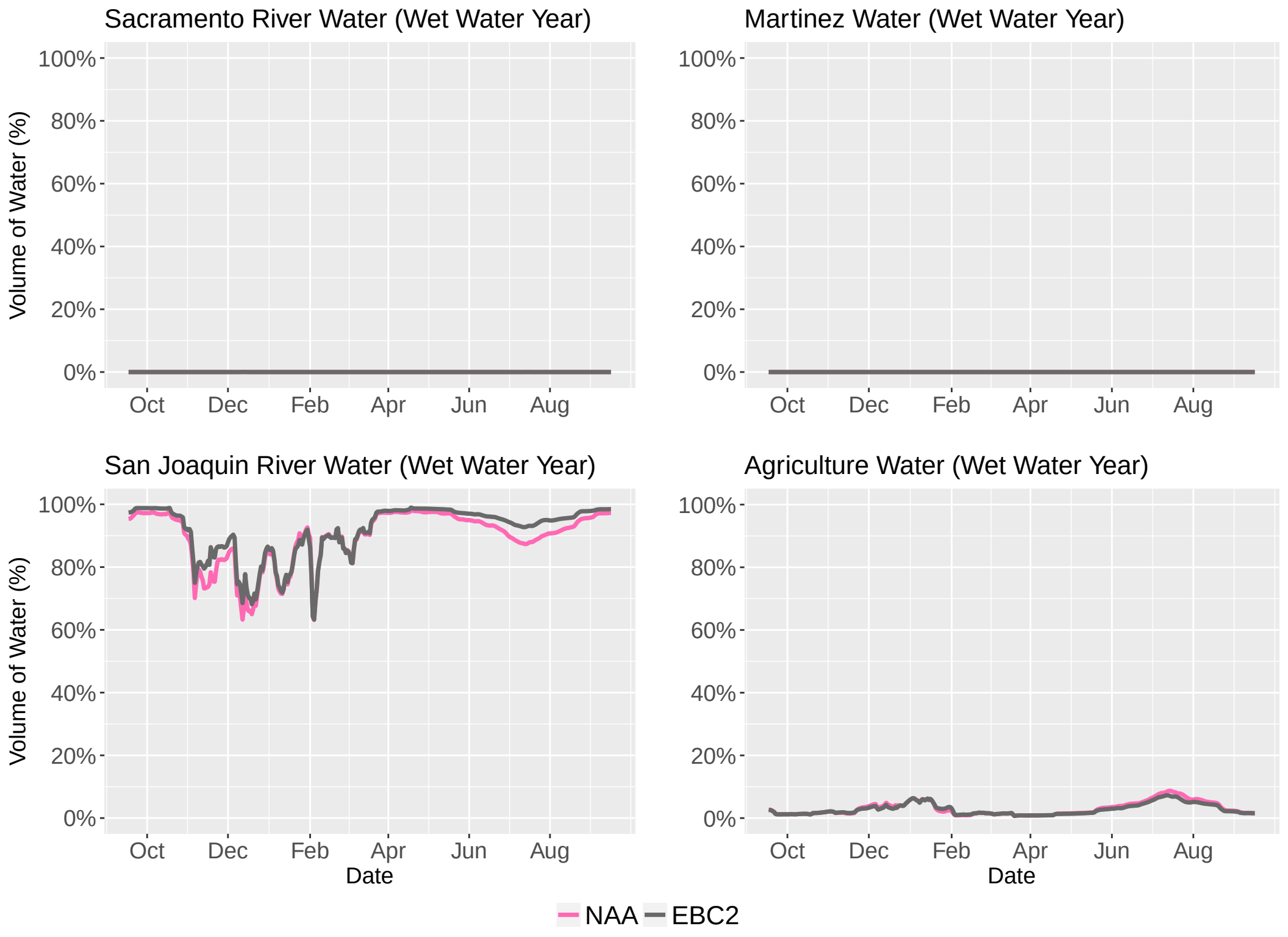

Sacramento River Water (Wet Water Year)
Martinez Water (Wet Water Year)
San Joaquin River Water (Wet Water Year)
Agriculture Water (Wet Water Year)
Volume of Water (%)
100%
80%
60%
40%
20%
0%
Oct
Dec
Feb
Apr
Jun
Aug
Date
NAA
EBC2

Source-water fingerprints at Buckley Cove


Sacramento River Water (Critical Water Year)
Martinez Water (Critical Water Year)
San Joaquin River Water (Critical Water Year)
Agriculture Water (Critical Water Year)
Volume of Water (%)
100%
80%
60%
40%
20%
0%
Oct
Dec
Feb
Apr
Jun
Aug
Date
NAA
EBC2

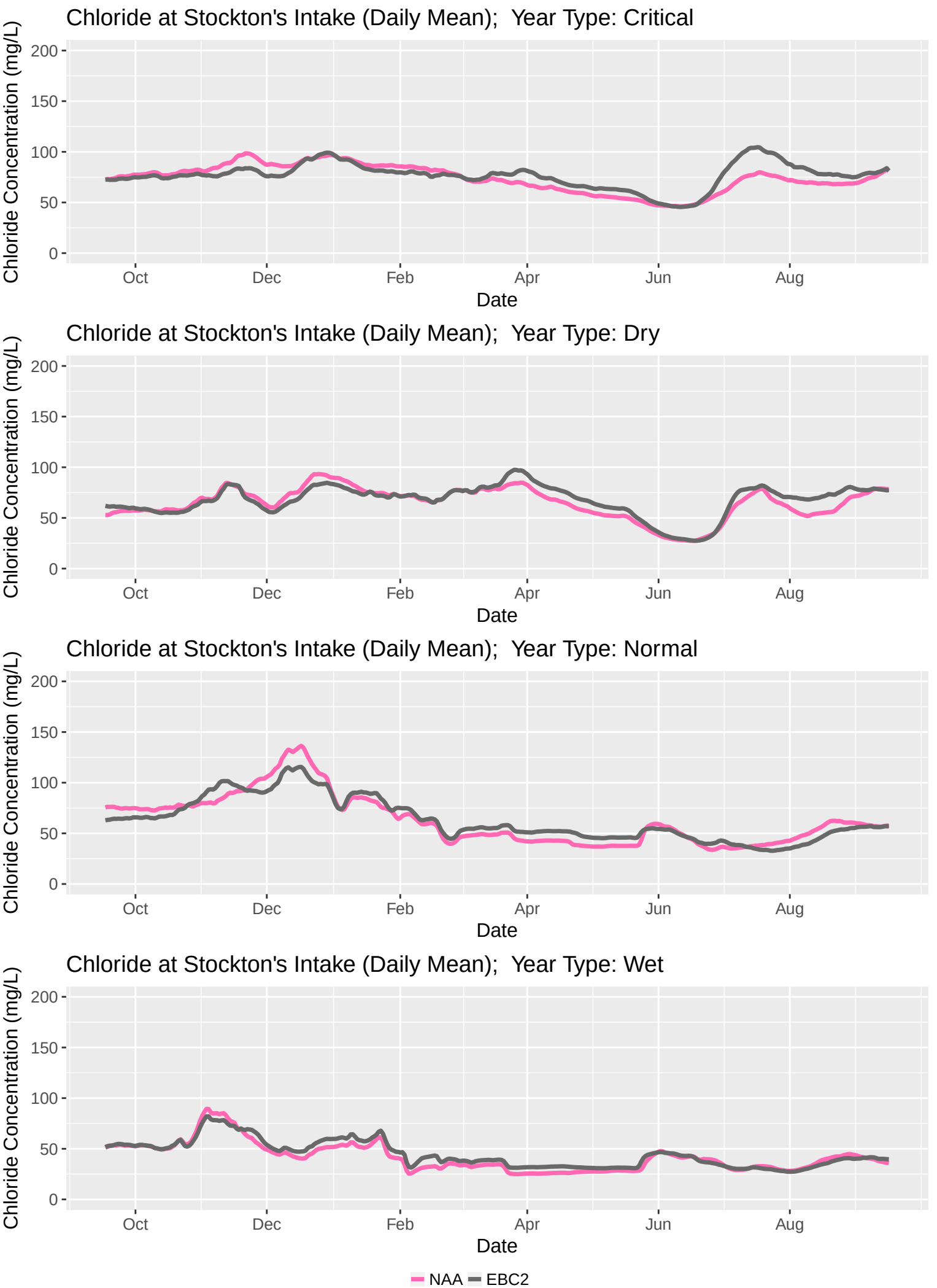

Sacramento River Water (Dry Water Year)
Martinez Water (Dry Water Year)
San Joaquin River Water (Dry Water Year)
Agriculture Water (Dry Water Year)
Volume of Water (%)
100%
80%
60%
40%
20%
0%
Oct
Dec
Feb
Apr
Jun
Aug
Date
NAA
EBC2

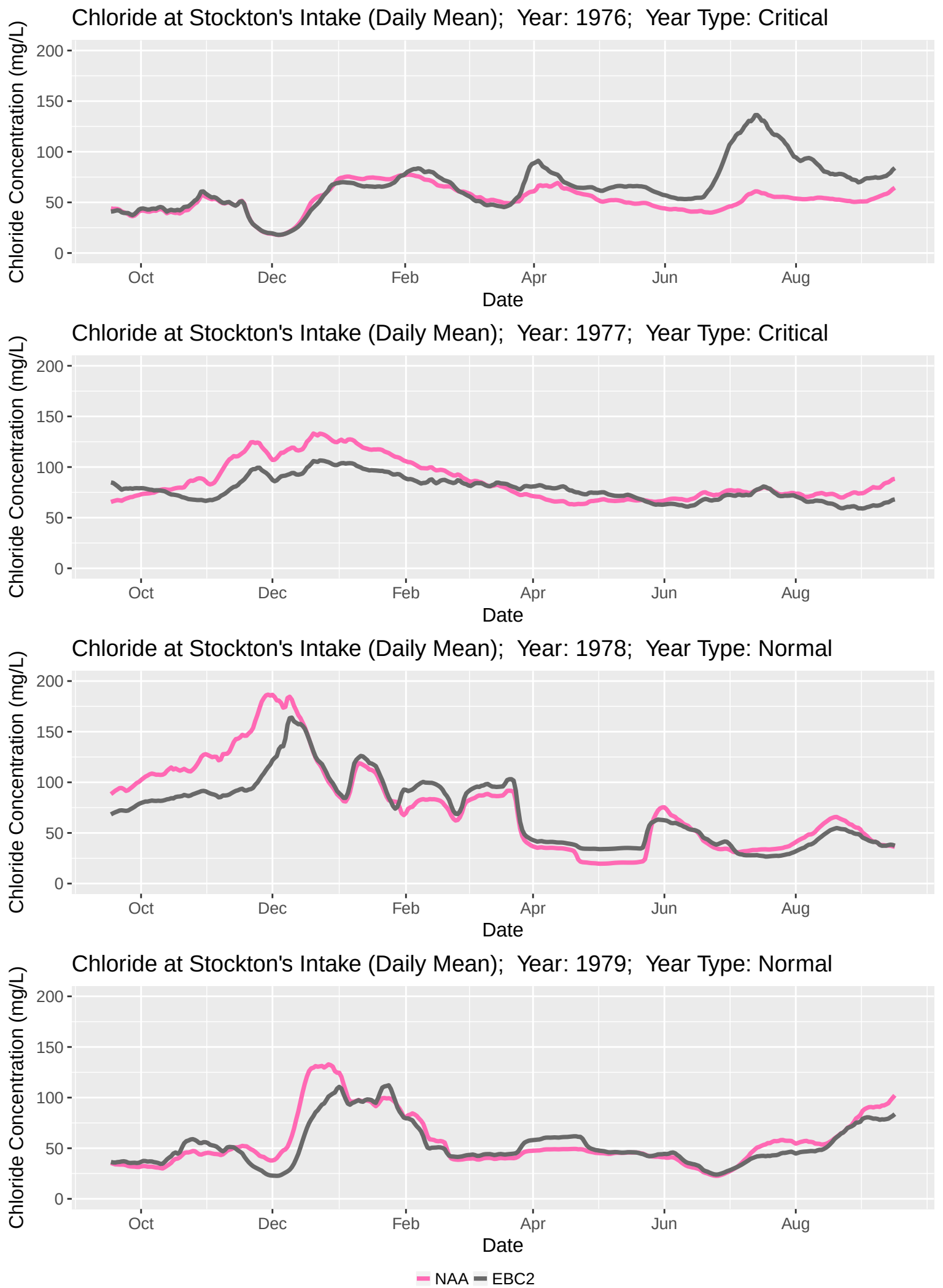

Sacramento River Water (Normal Water Year)
Martinez Water (Normal Water Year)
San Joaquin River Water (Normal Water Year)
Agriculture Water (Normal Water Year)
Volume of Water (%)
100%
80%
60%
40%
20%
0%
Oct
Dec
Feb
Apr
Jun
Aug
Date
NAA
EBC2

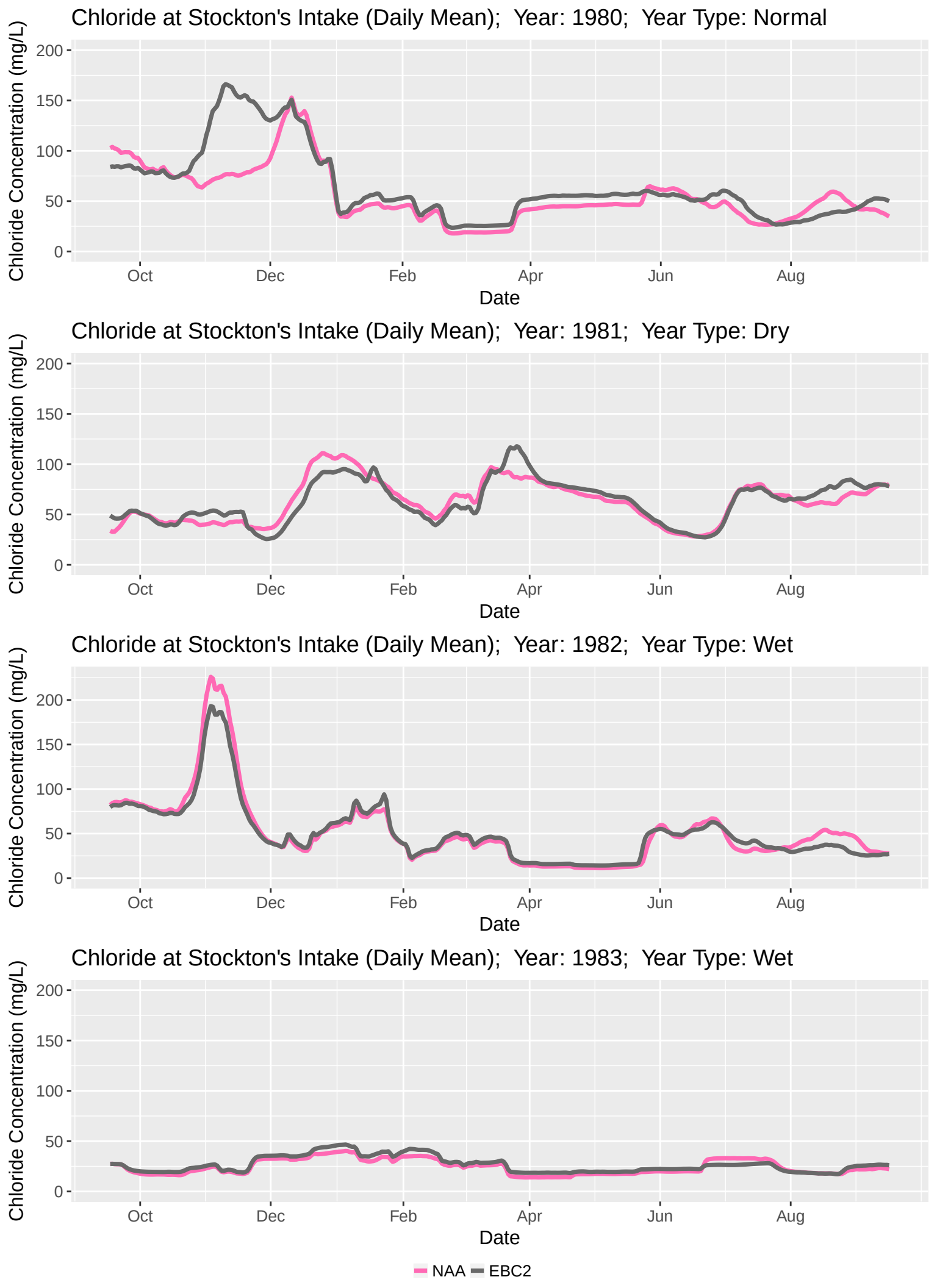

Sacramento River Water (Wet Water Year)
Martinez Water (Wet Water Year)
San Joaquin River Water (Wet Water Year)
Agriculture Water (Wet Water Year)
Volume of Water (%)
100%
80%
60%
40%
20%
0%
Oct
Dec
Feb
Apr
Jun
Aug
Date
NAA
EBC2

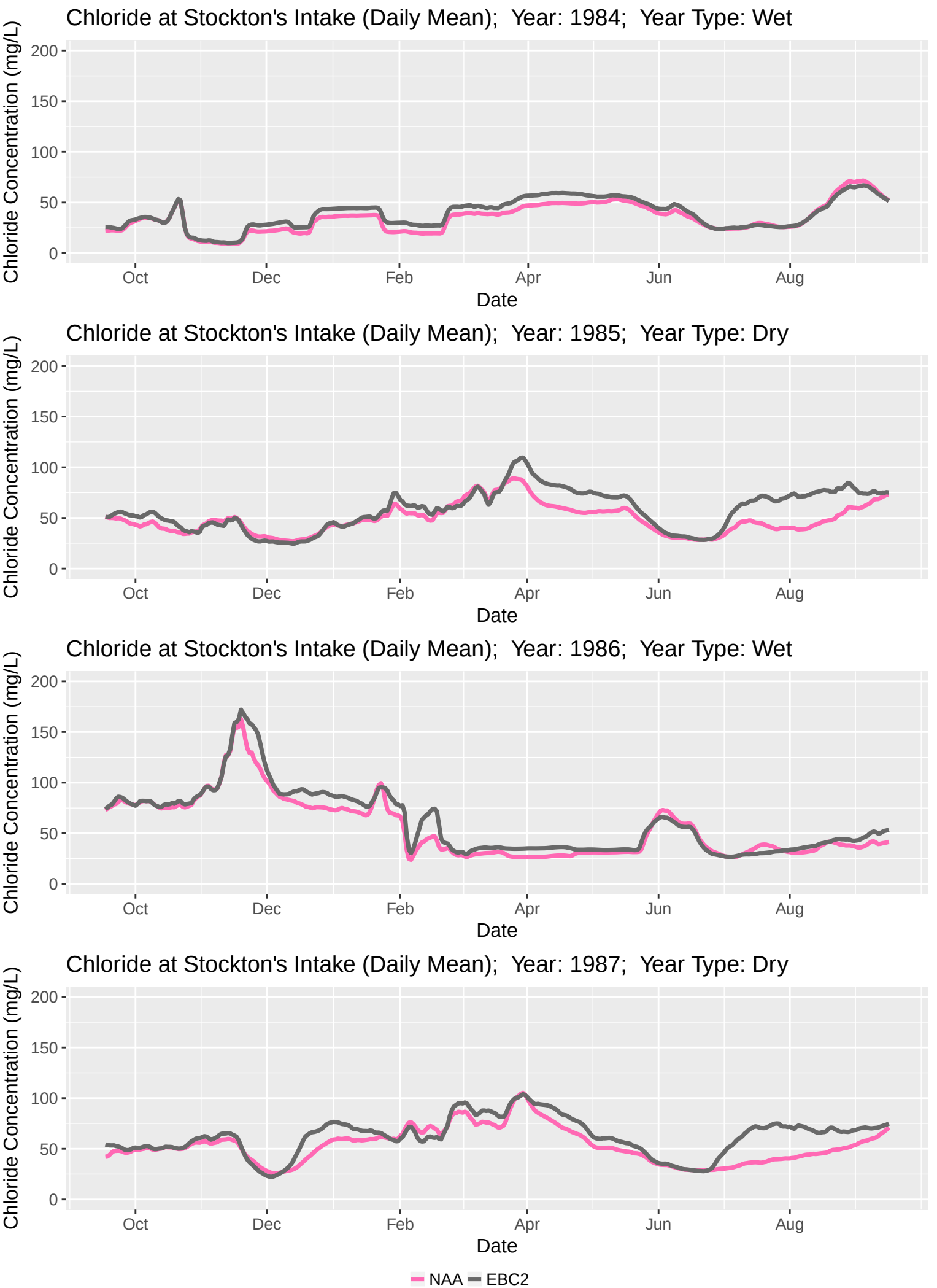
Attachment 4

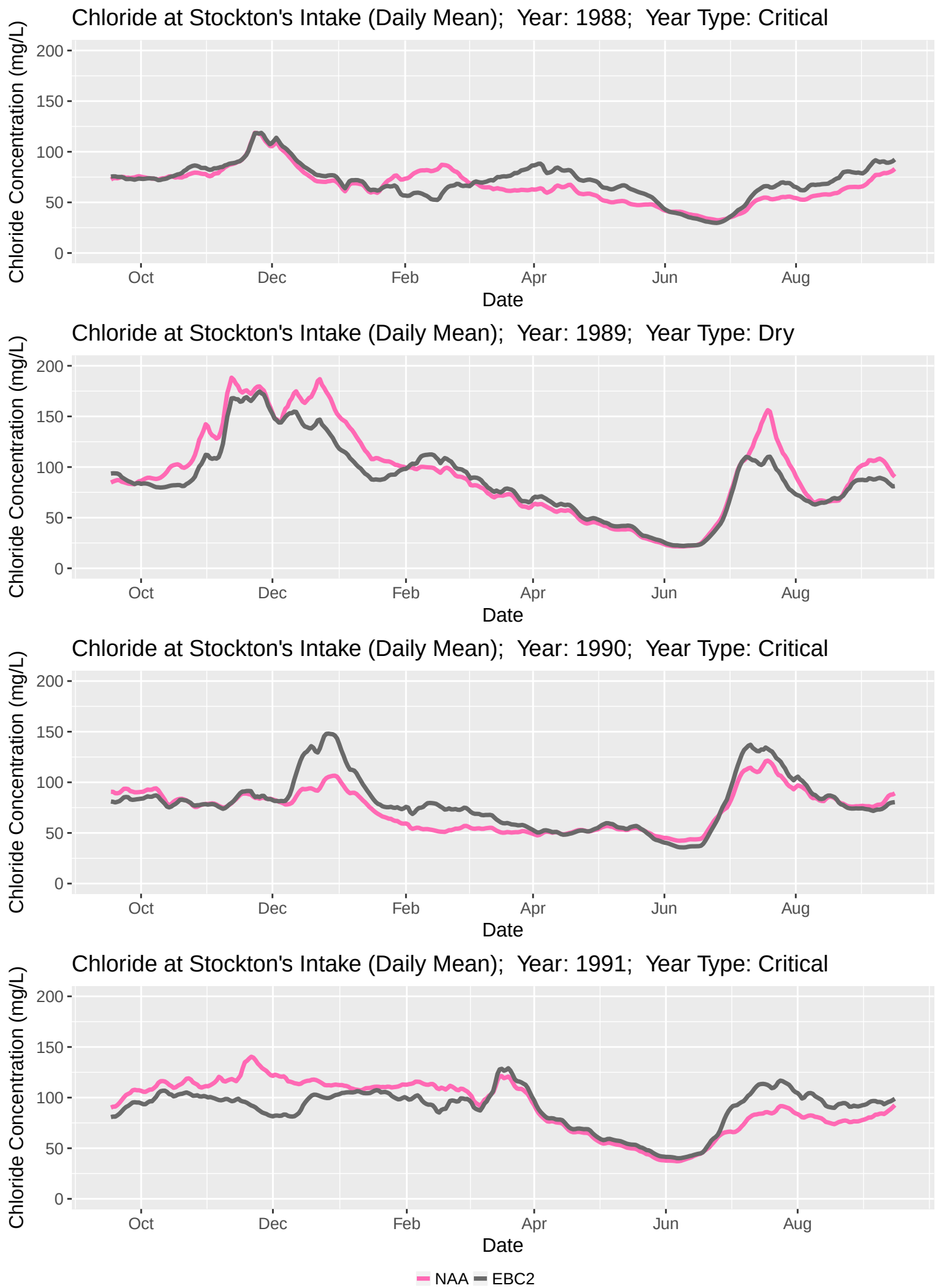
Chloride concentrations at the City's intake and Buckley Cove for NAA and EBC2 scenarios during critical, dry, normal, and wet water year types

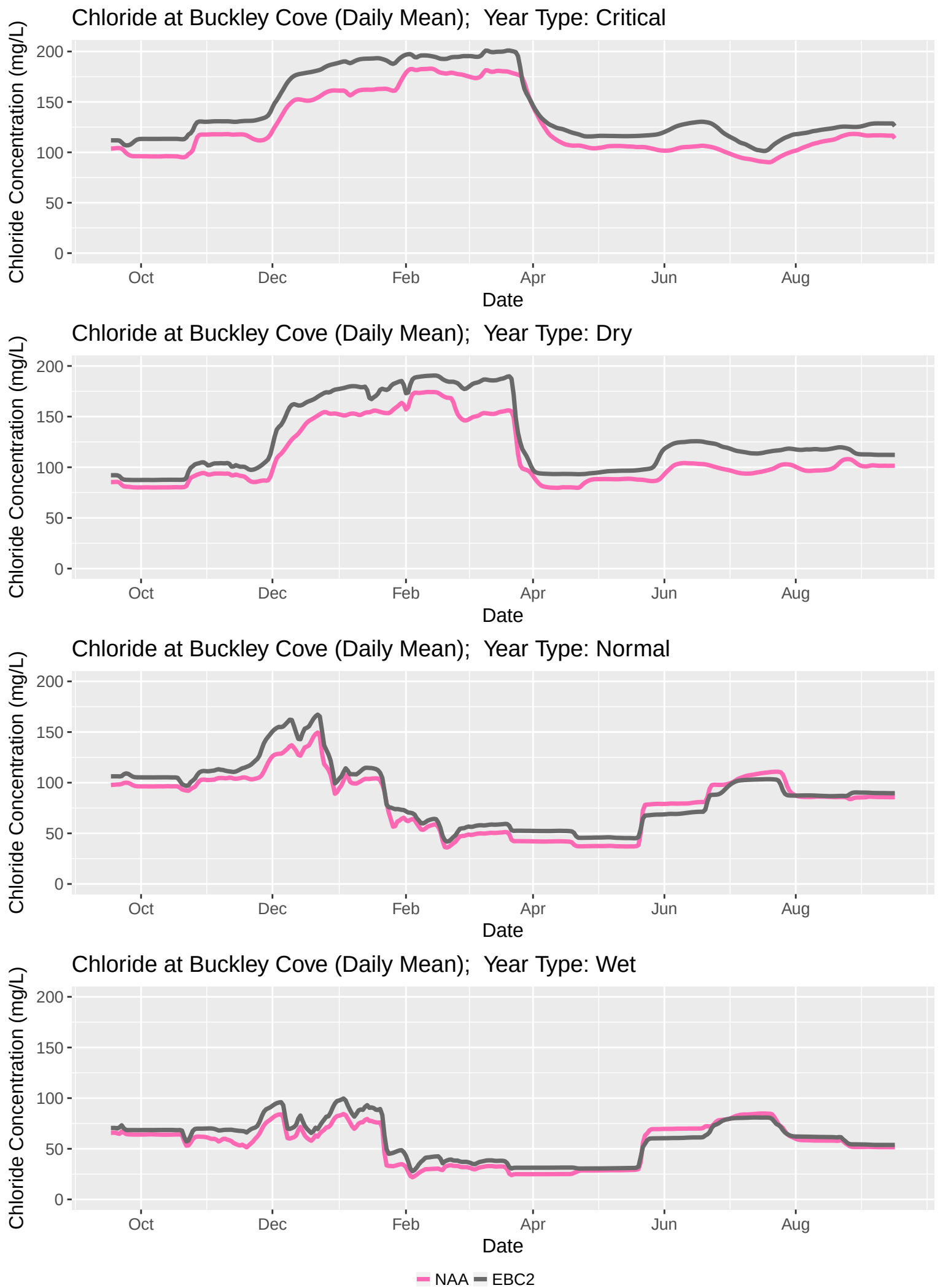

Chloride at Stockton's Intake (Daily Mean); Year Type: Critical
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Stockton's Intake (Daily Mean); Year Type: Dry
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Stockton's Intake (Daily Mean); Year Type: Normal
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Stockton's Intake (Daily Mean); Year Type: Wet
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
NAA
EBC2

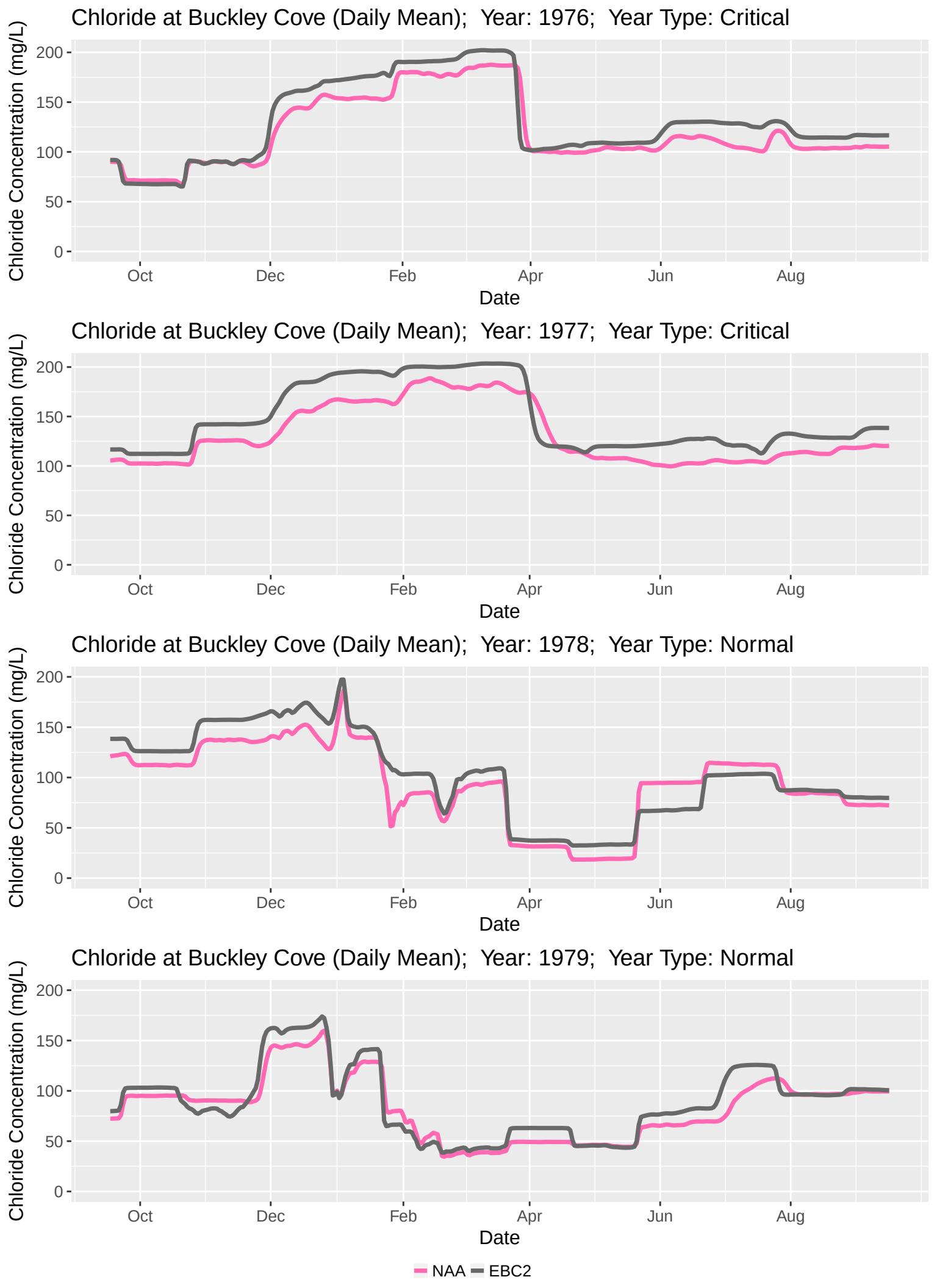

Chloride at Stockton's Intake (Daily Mean); Year: 1976; Year Type: Critical
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Stockton's Intake (Daily Mean); Year: 1977; Year Type: Critical
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Stockton's Intake (Daily Mean); Year: 1978; Year Type: Normal
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Stockton's Intake (Daily Mean); Year: 1979; Year Type: Normal
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
NAA
EBC2

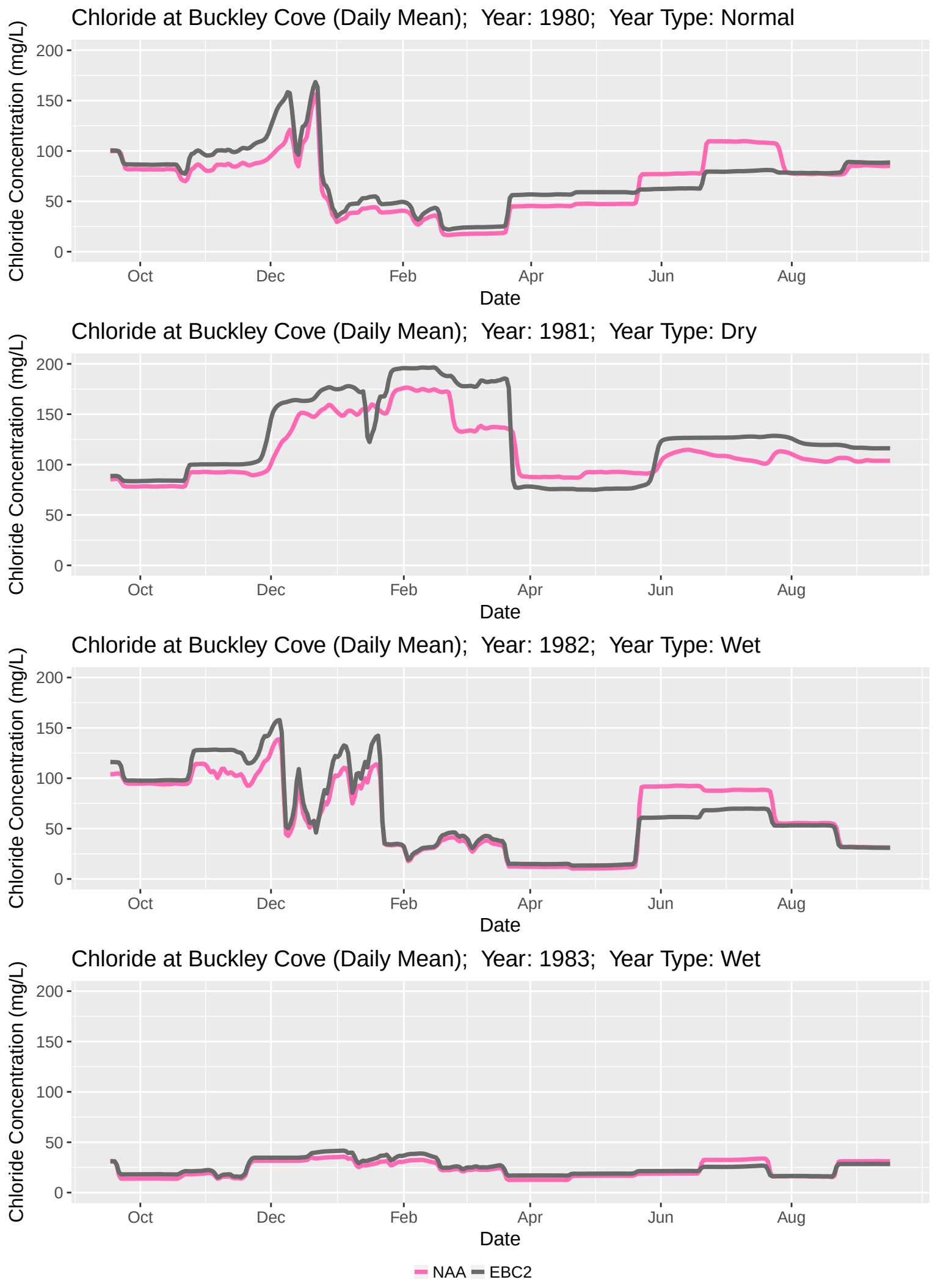

Chloride at Stockton's Intake (Daily Mean); Year: 1980; Year Type: Normal
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Stockton's Intake (Daily Mean); Year: 1981; Year Type: Dry
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Stockton's Intake (Daily Mean); Year: 1982; Year Type: Wet
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Stockton's Intake (Daily Mean); Year: 1983; Year Type: Wet
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
NAA
EBC2

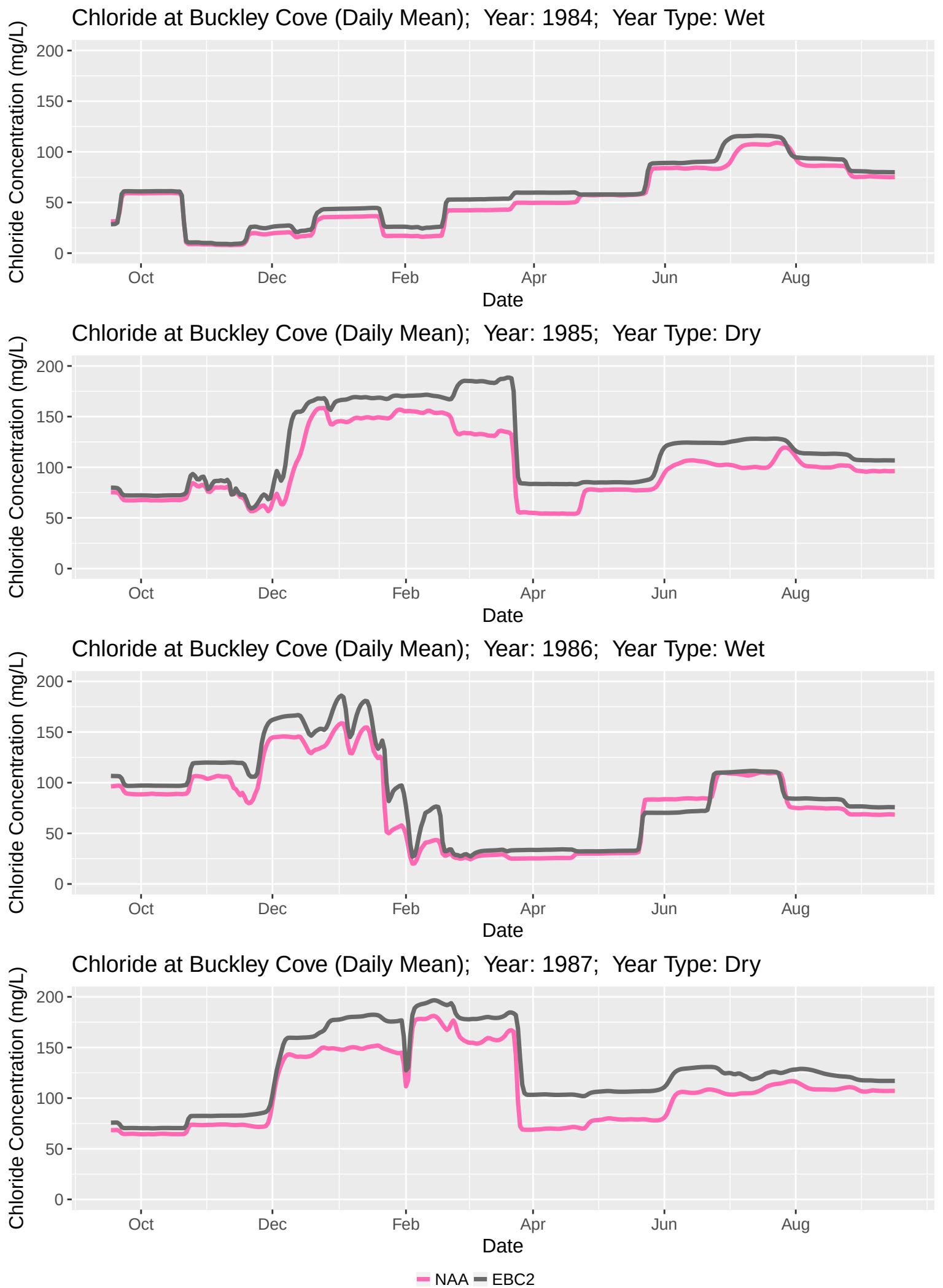

Chloride at Stockton's Intake (Daily Mean); Year: 1984; Year Type: Wet
Chloride at Stockton's Intake (Daily Mean); Year: 1985; Year Type: Dry
Chloride at Stockton's Intake (Daily Mean); Year: 1986; Year Type: Wet
Chloride at Stockton's Intake (Daily Mean); Year: 1987; Year Type: Dry
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
NAA
EBC2

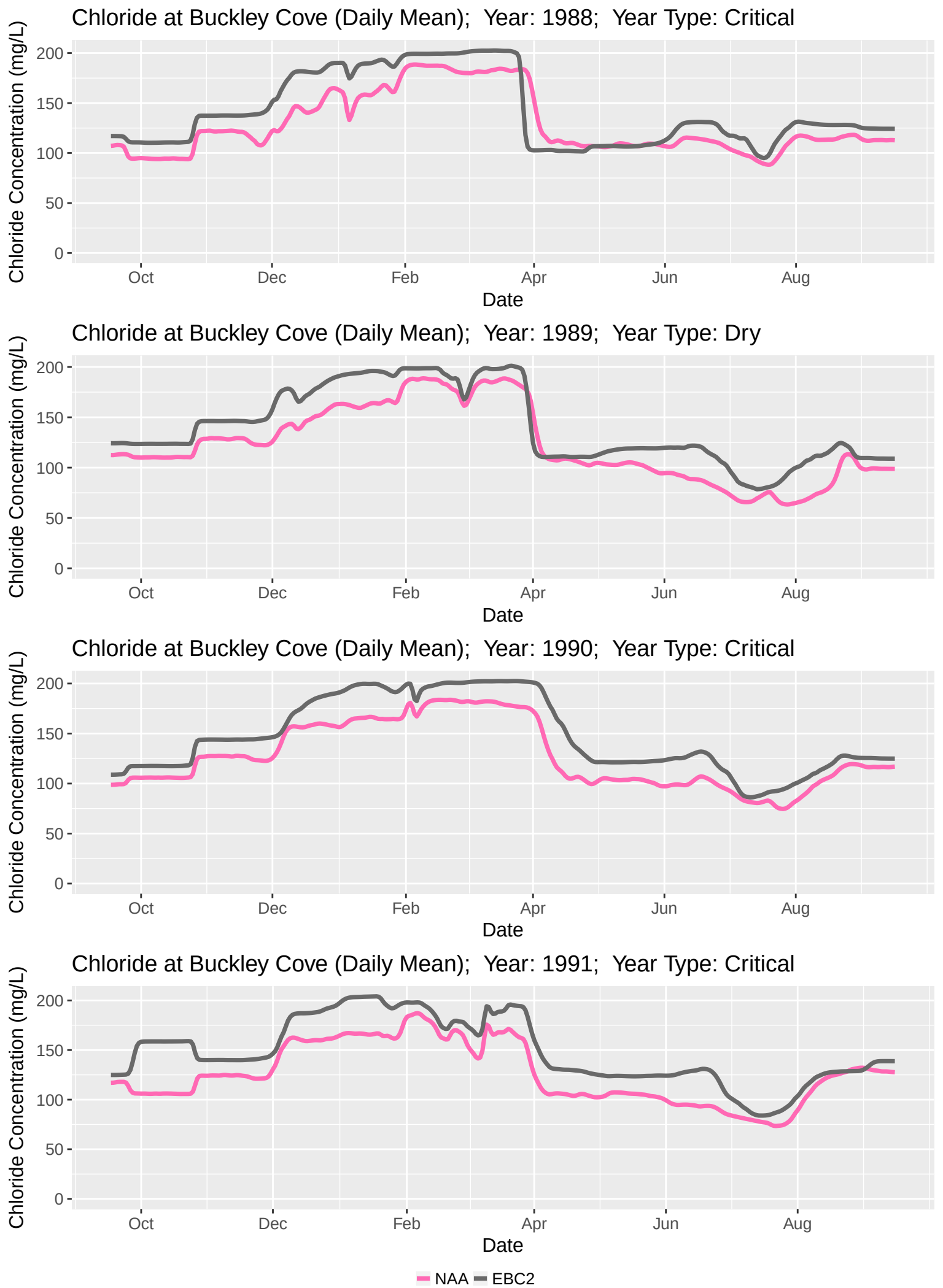

Chloride at Stockton's Intake (Daily Mean); Year: 1988; Year Type: Critical
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Stockton's Intake (Daily Mean); Year: 1989; Year Type: Dry
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Stockton's Intake (Daily Mean); Year: 1990; Year Type: Critical
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Stockton's Intake (Daily Mean); Year: 1991; Year Type: Critical
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
NAA
EBC2


Chloride at Buckley Cove (Daily Mean); Year Type: Critical
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Buckley Cove (Daily Mean); Year Type: Dry
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Buckley Cove (Daily Mean); Year Type: Normal
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Buckley Cove (Daily Mean); Year Type: Wet
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
NAA
EBC2


Chloride at Buckley Cove (Daily Mean); Year: 1976; Year Type: Critical
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Buckley Cove (Daily Mean); Year: 1977; Year Type: Critical
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Buckley Cove (Daily Mean); Year: 1978; Year Type: Normal
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Buckley Cove (Daily Mean); Year: 1979; Year Type: Normal
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
NAA
EBC2


Chloride at Buckley Cove (Daily Mean); Year: 1980; Year Type: Normal
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Buckley Cove (Daily Mean); Year: 1981; Year Type: Dry
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Buckley Cove (Daily Mean); Year: 1982; Year Type: Wet
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Buckley Cove (Daily Mean); Year: 1983; Year Type: Wet
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
NAA
EBC2

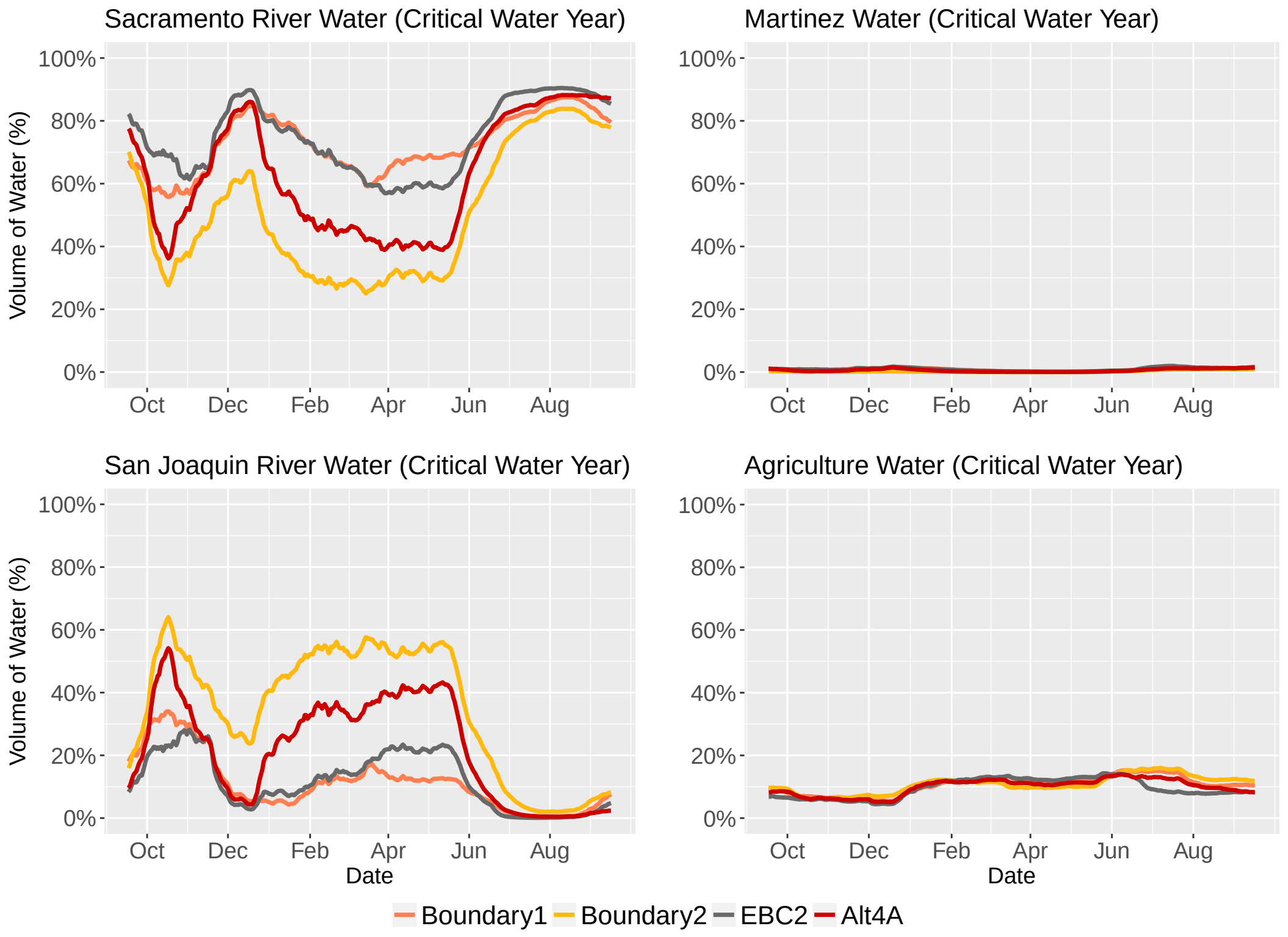

Chloride at Buckley Cove (Daily Mean); Year: 1984; Year Type: Wet
Chloride at Buckley Cove (Daily Mean); Year: 1985; Year Type: Dry
Chloride at Buckley Cove (Daily Mean); Year: 1986; Year Type: Wet
Chloride at Buckley Cove (Daily Mean); Year: 1987; Year Type: Dry
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
NAA
EBC2

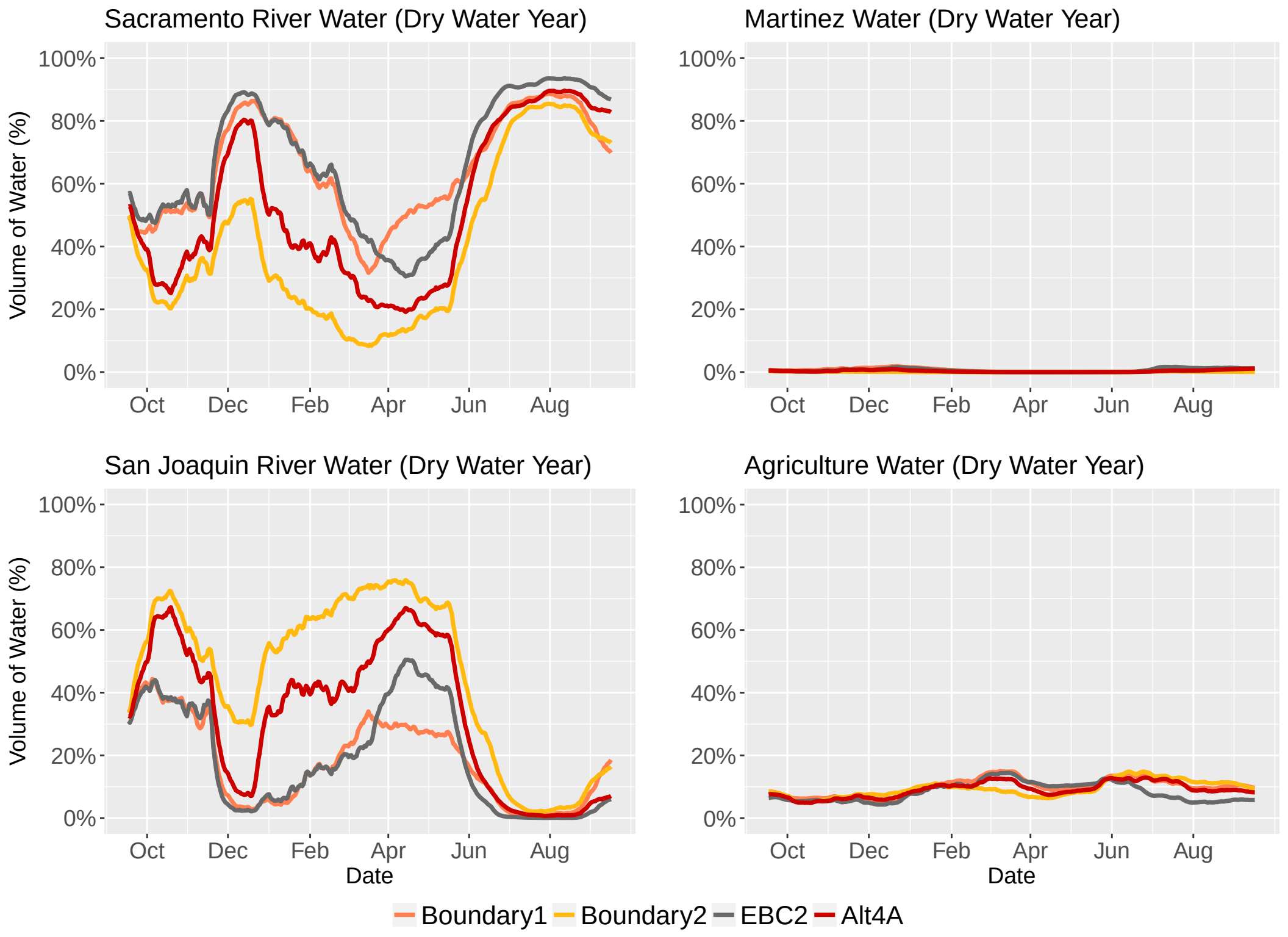

Chloride at Buckley Cove (Daily Mean); Year: 1988; Year Type: Critical
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Buckley Cove (Daily Mean); Year: 1989; Year Type: Dry
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Buckley Cove (Daily Mean); Year: 1990; Year Type: Critical
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Buckley Cove (Daily Mean); Year: 1991; Year Type: Critical
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
NAA
EBC2

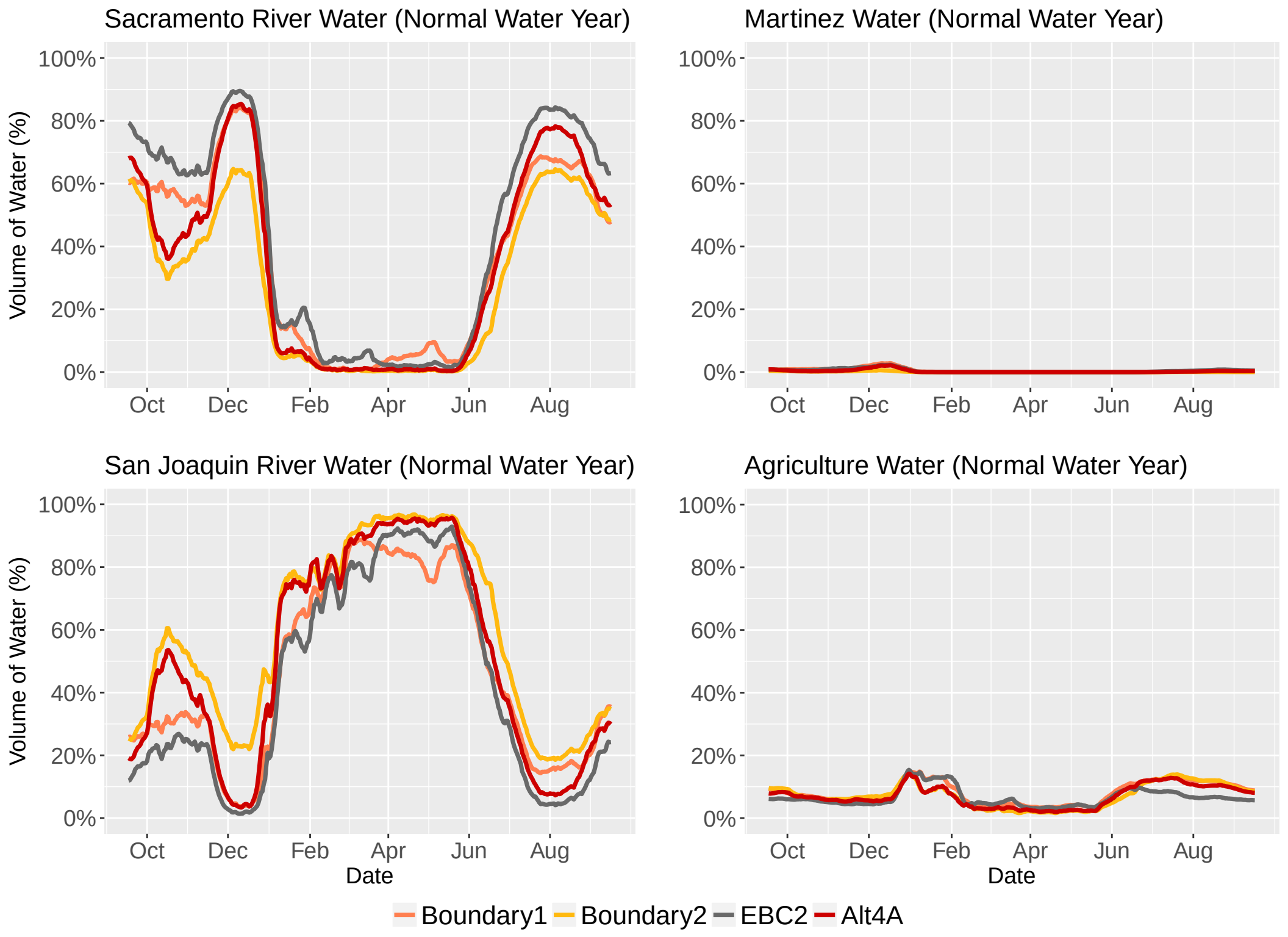
Attachment 5

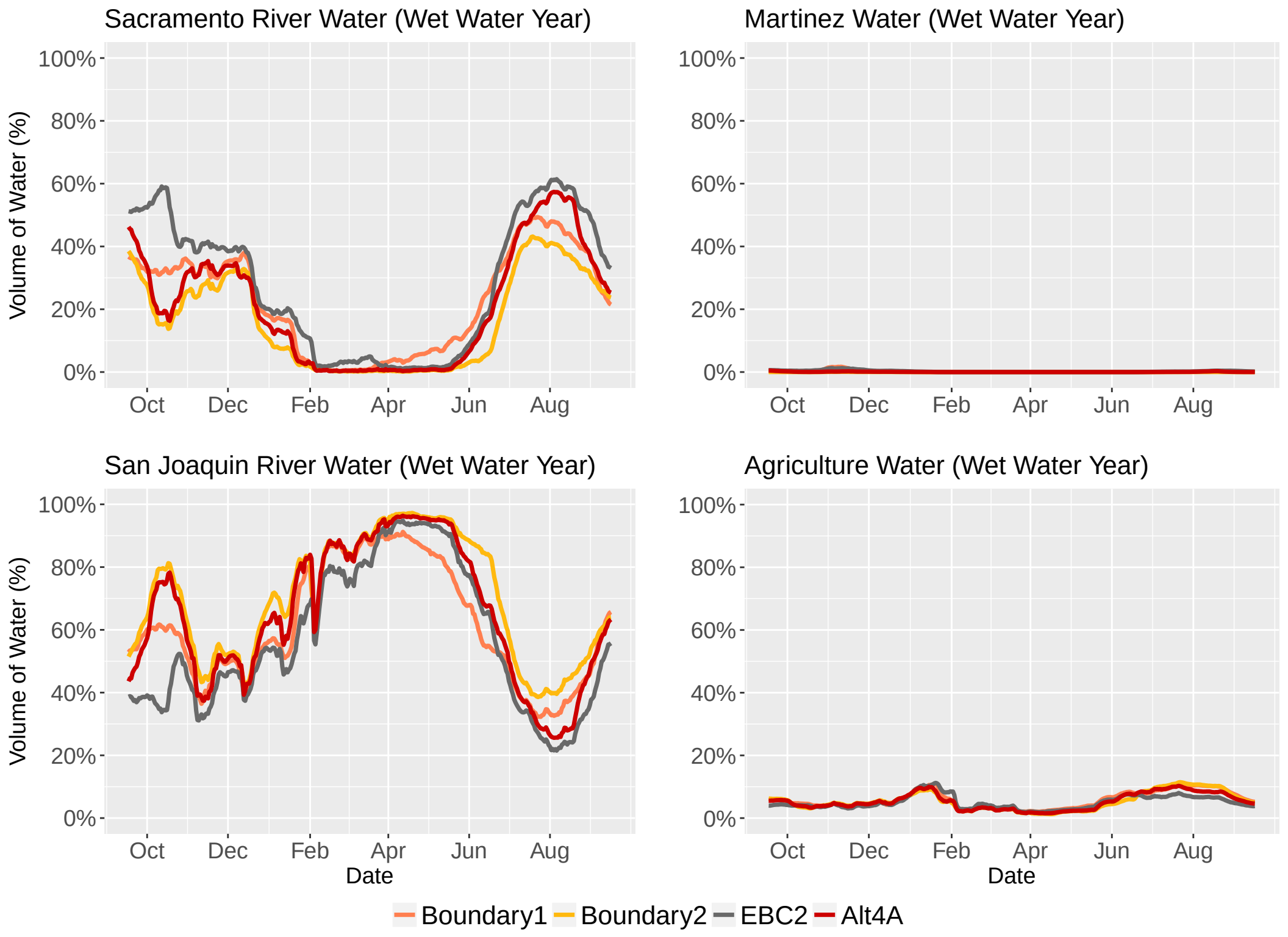
Source water fingerprinting at the City's intake and Buckley Cove for Boundary 1, Boundary 2, Alternative 4A, and EBC2 scenarios during critical, dry, normal, and wet water year types

Source-water fingerprints at Stockton's Intake

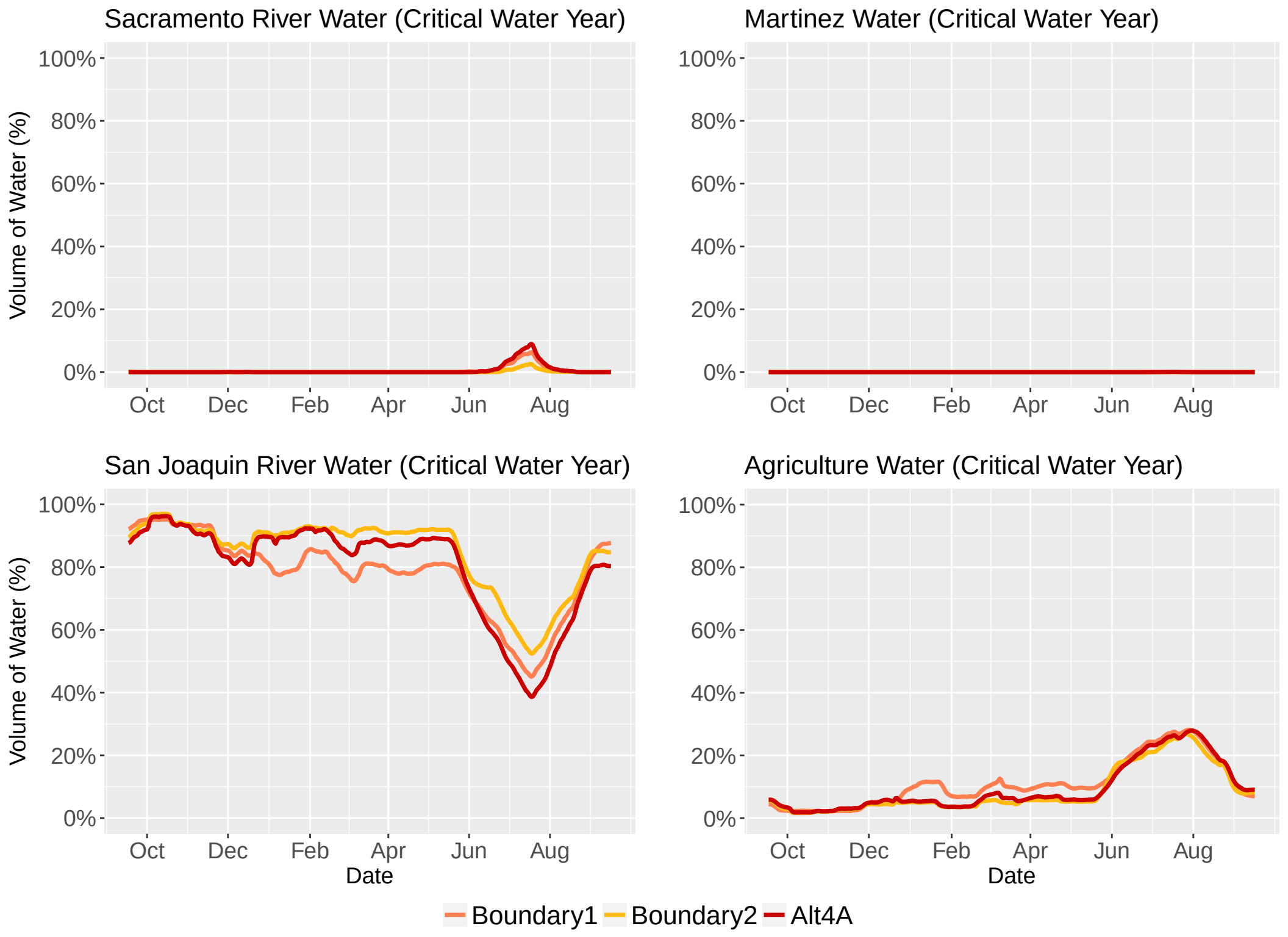

Sacramento River Water (Critical Water Year)
Martinez Water (Critical Water Year)
San Joaquin River Water (Critical Water Year)
Agriculture Water (Critical Water Year)
Volume of Water (%)
100%
80%
60%
40%
20%
0%
Oct
Dec
Feb
Apr
Jun
Aug
Date
Boundary1
Boundary2
EBC2
Alt4A

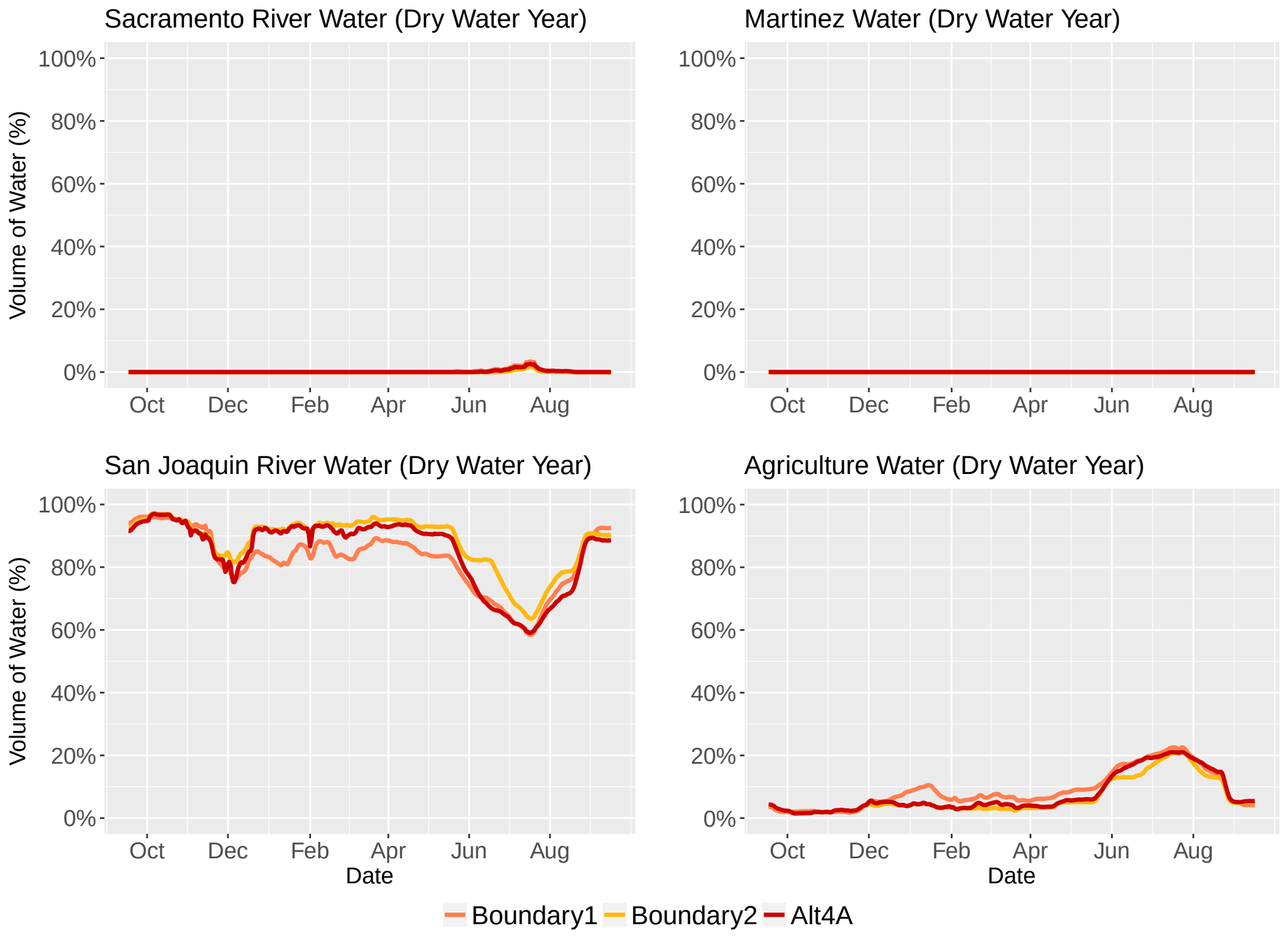

Sacramento River Water (Dry Water Year)
Martinez Water (Dry Water Year)
San Joaquin River Water (Dry Water Year)
Agriculture Water (Dry Water Year)
Volume of Water (%)
100%
80%
60%
40%
20%
0%
Oct
Dec
Feb
Apr
Jun
Aug
Date
Boundary1
Boundary2
EBC2
Alt4A

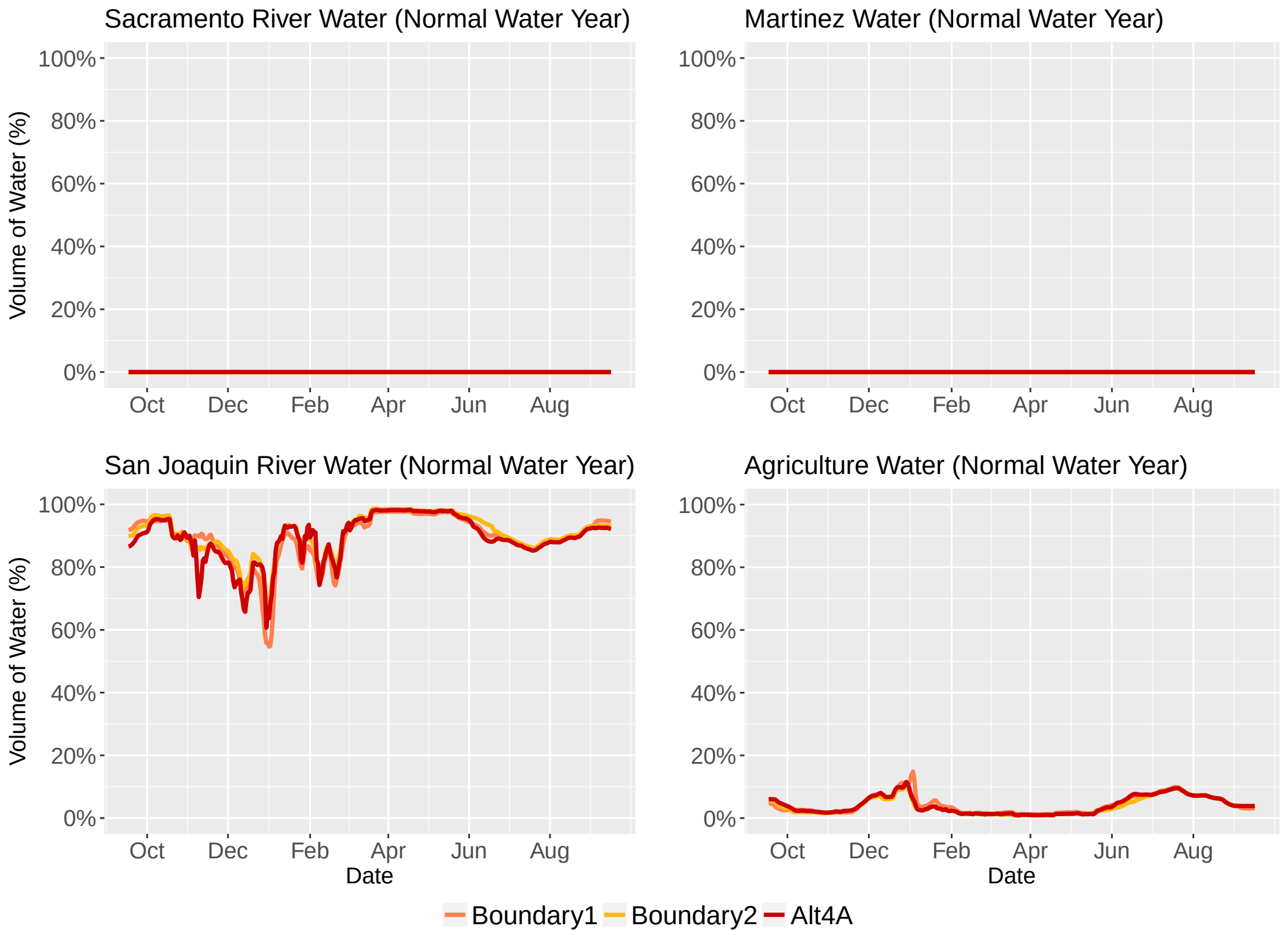

Sacramento River Water (Normal Water Year)
Martinez Water (Normal Water Year)
San Joaquin River Water (Normal Water Year)
Agriculture Water (Normal Water Year)
Volume of Water (%)
100%
80%
60%
40%
20%
0%
Oct
Dec
Feb
Apr
Jun
Aug
Date
Boundary1
Boundary2
EBC2
Alt4A

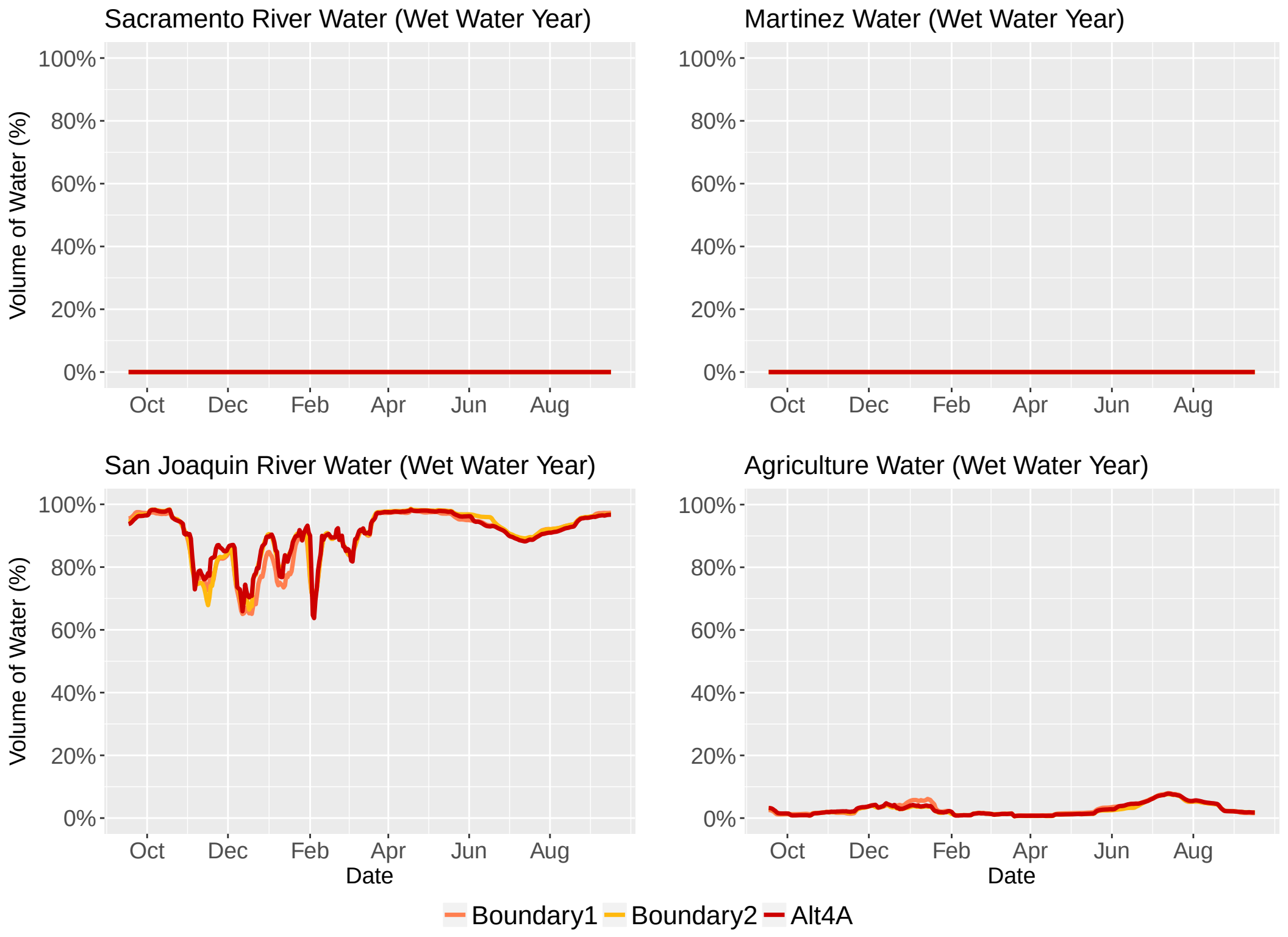

Sacramento River Water (Wet Water Year)
Martinez Water (Wet Water Year)
San Joaquin River Water (Wet Water Year)
Agriculture Water (Wet Water Year)
Volume of Water (%)
100%
80%
60%
40%
20%
0%
Oct
Dec
Feb
Apr
Jun
Aug
Date
Boundary1
Boundary2
EBC2
Alt4A

Source-water fingerprints at Buckley Cove


Sacramento River Water (Critical Water Year)
Martinez Water (Critical Water Year)
San Joaquin River Water (Critical Water Year)
Agriculture Water (Critical Water Year)
Volume of Water (%)
100%
80%
60%
40%
20%
0%
Oct
Dec
Feb
Apr
Jun
Aug
Date
Boundary1
Boundary2
Alt4A

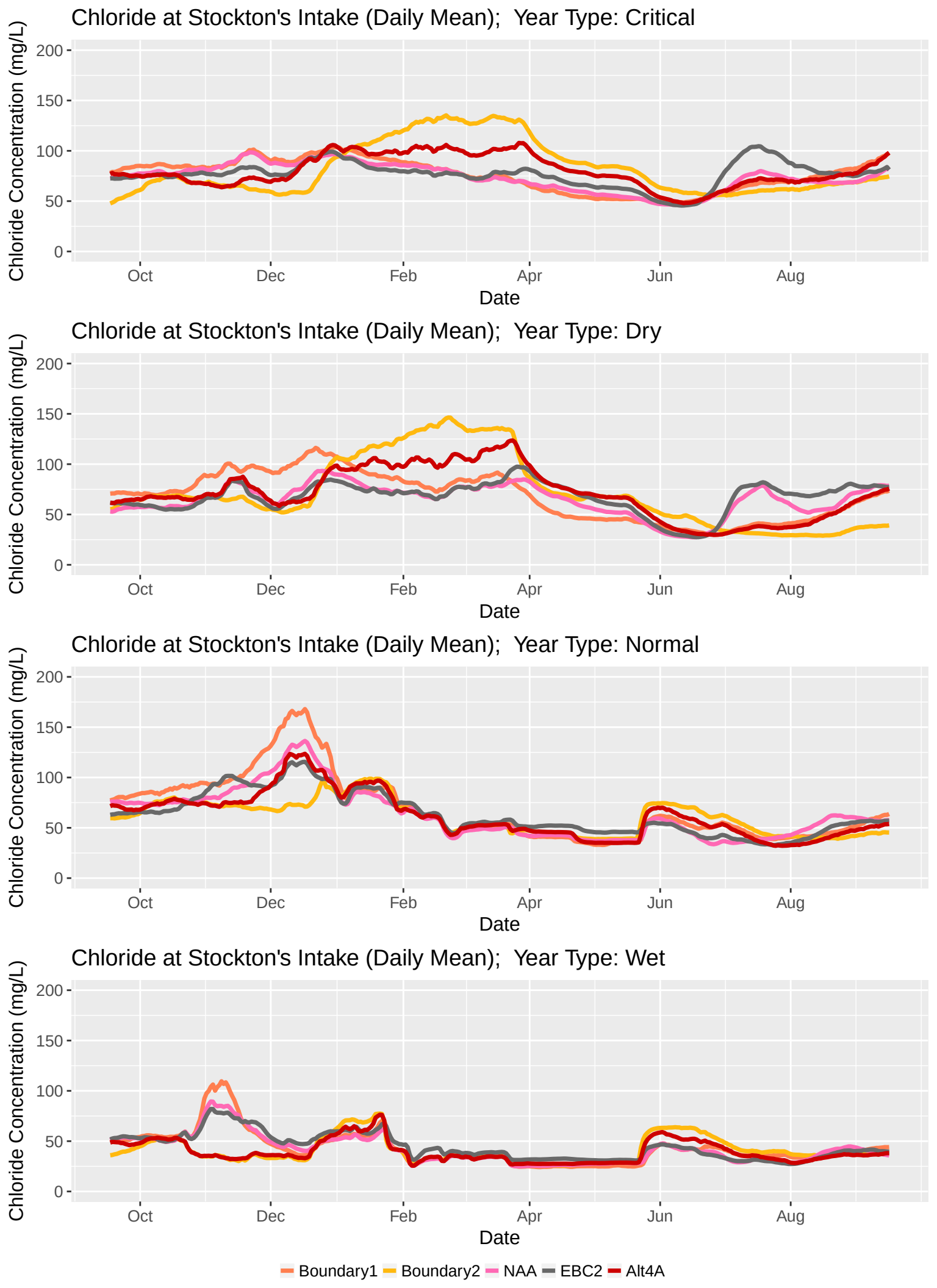

Sacramento River Water (Dry Water Year)
Martinez Water (Dry Water Year)
San Joaquin River Water (Dry Water Year)
Agriculture Water (Dry Water Year)
Volume of Water (%)
100%
80%
60%
40%
20%
0%
Oct
Dec
Feb
Apr
Jun
Aug
Date
Boundary1
Boundary2
Alt4A


Sacramento River Water (Normal Water Year)
Martinez Water (Normal Water Year)
San Joaquin River Water (Normal Water Year)
Agriculture Water (Normal Water Year)
Volume of Water (%)
100%
80%
60%
40%
20%
0%
Oct
Dec
Feb
Apr
Jun
Aug
Date
Boundary1
Boundary2
Alt4A


Sacramento River Water (Wet Water Year)
Martinez Water (Wet Water Year)
San Joaquin River Water (Wet Water Year)
Agriculture Water (Wet Water Year)
Volume of Water (%)
100%
80%
60%
40%
20%
0%
Oct
Dec
Feb
Apr
Jun
Aug
Date
Boundary1
Boundary2
Alt4A

Attachment 6

Chloride concentrations at the City's intake and Buckley Cove for Boundary 1, Boundary 2, Alternative 4A, NAA, and EBC2 scenarios during critical, dry, normal, and wet water year types


Chloride at Stockton's Intake (Daily Mean); Year Type: Critical
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Stockton's Intake (Daily Mean); Year Type: Dry
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Stockton's Intake (Daily Mean); Year Type: Normal
Chloride Concentration (mg/L)
200
150
100
50
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Stockton's Intake (Daily Mean); Year Type: Wet
Chloride Concentration (mg/L)
200
150
100
50
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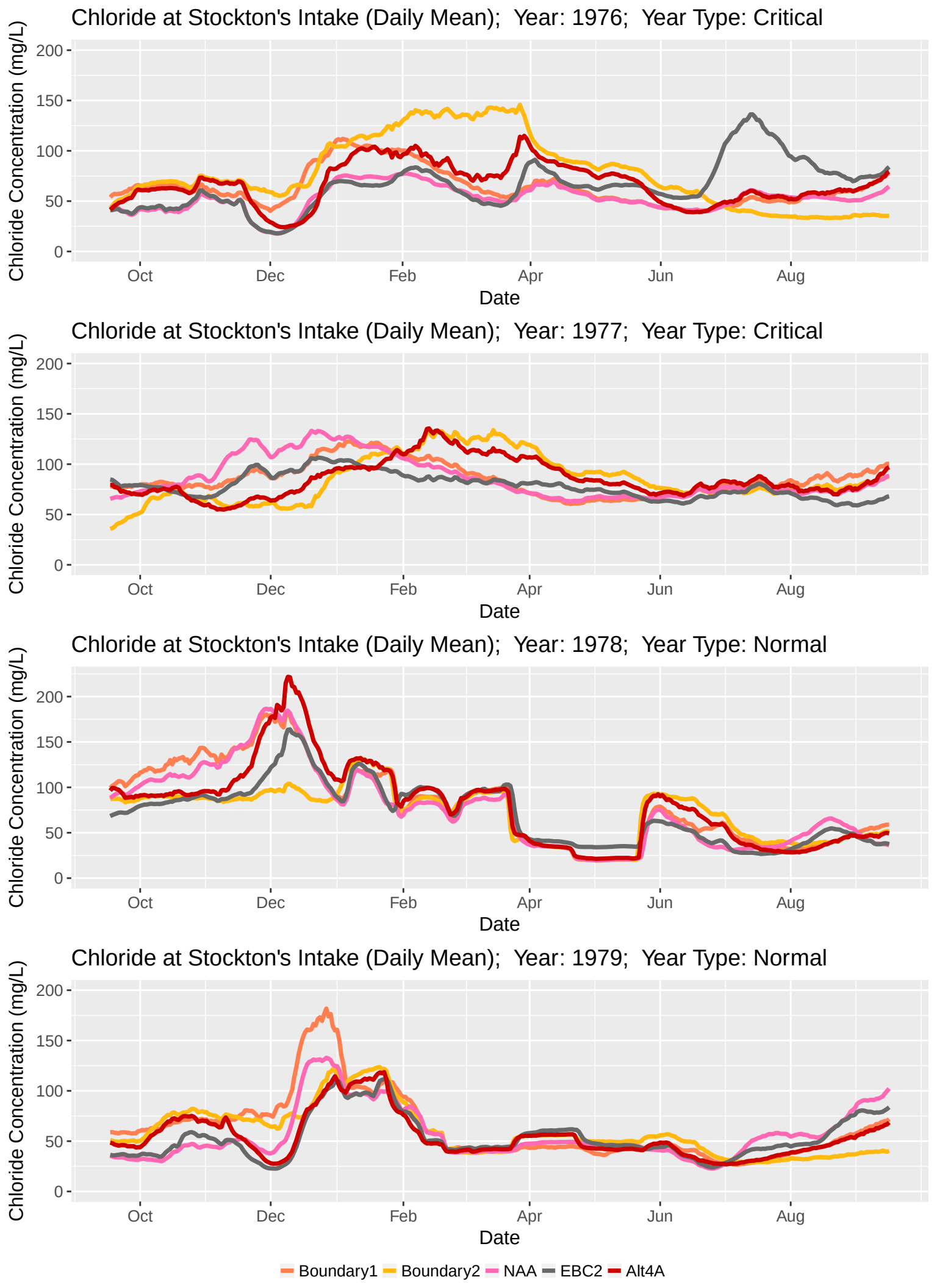
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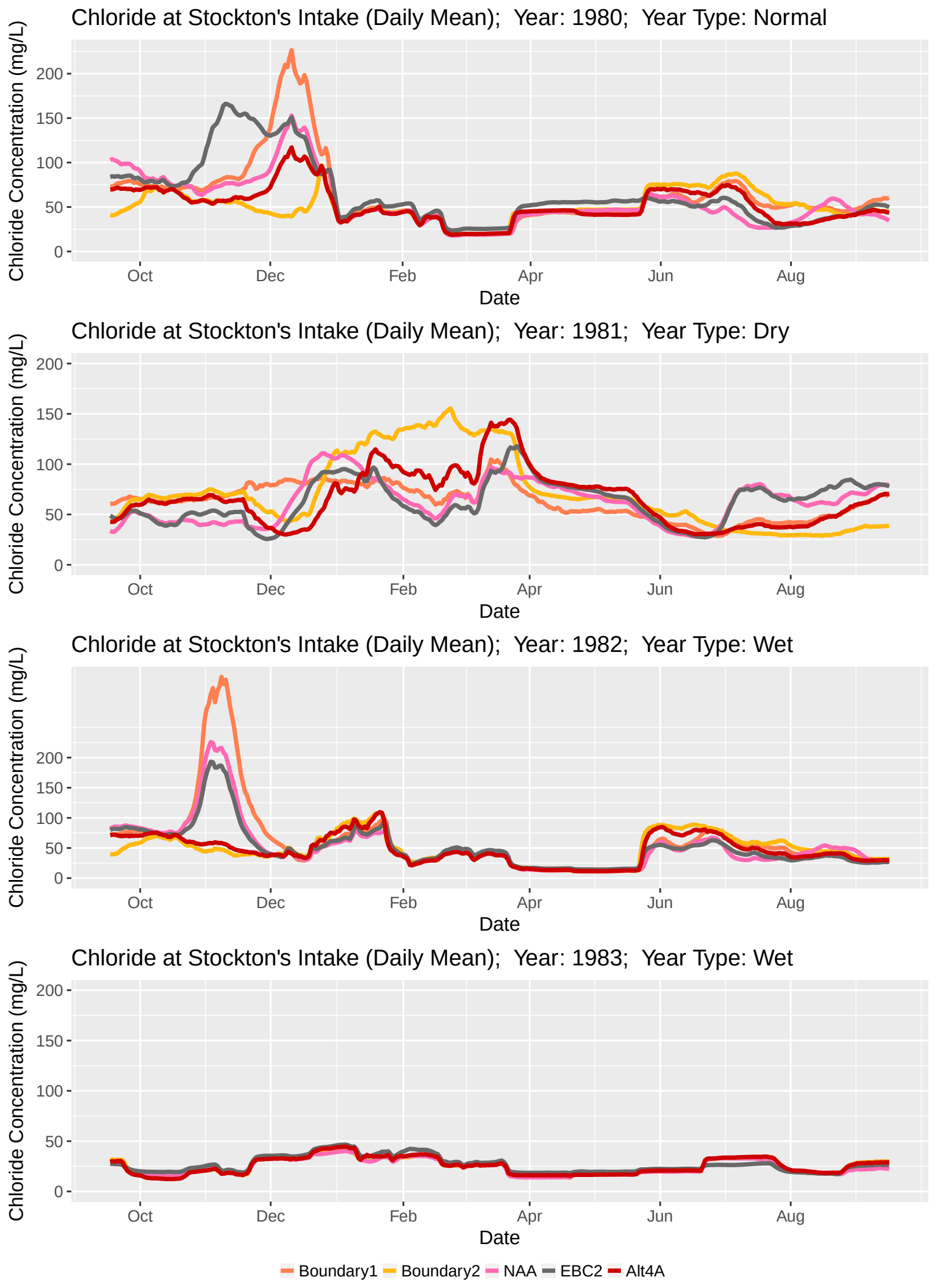
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Chloride at Stockton's Intake (Daily Mean); Year: 1983; Year Type: Wet
Chloride Concentration (mg/L)
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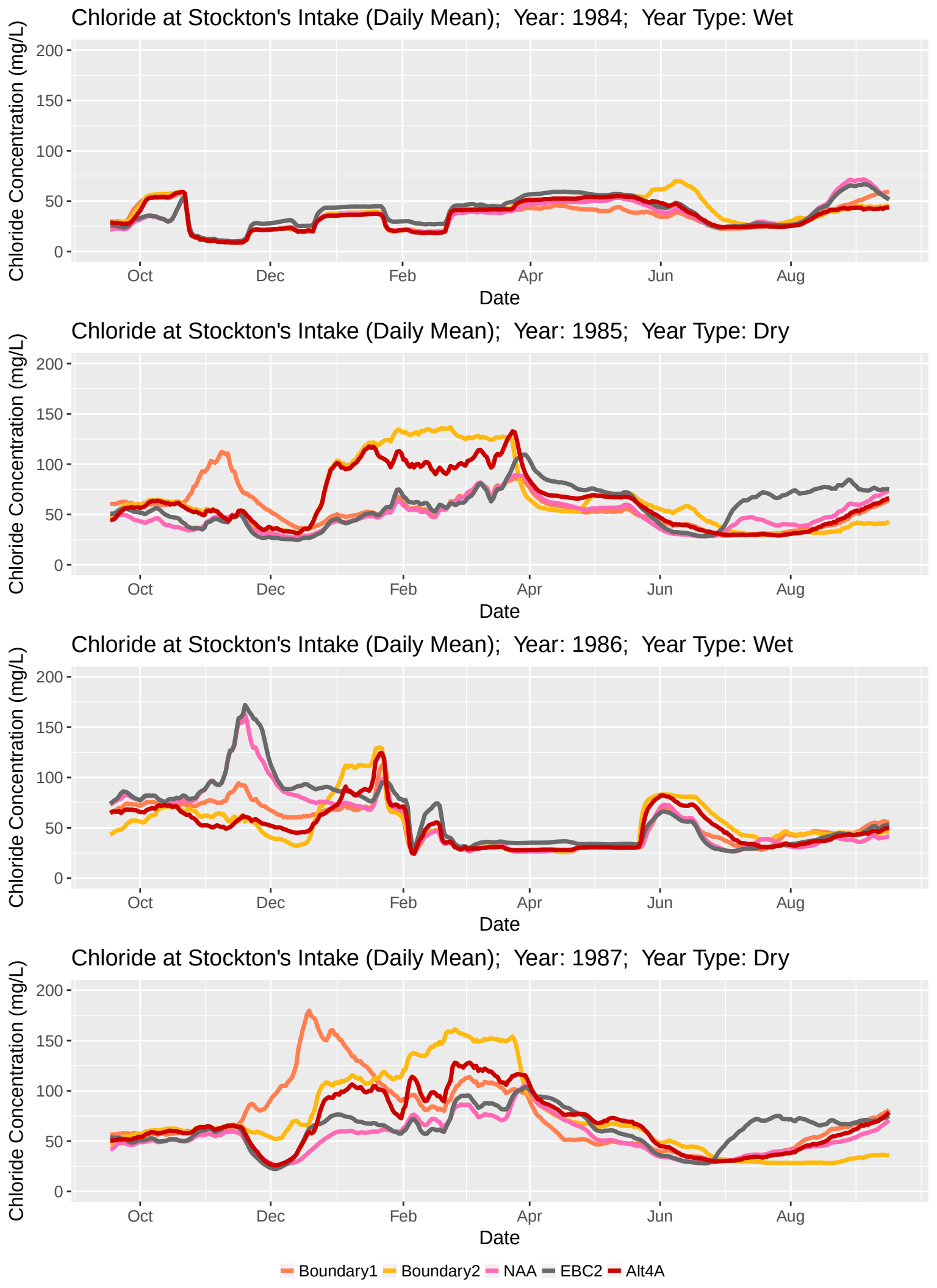
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Chloride at Stockton's Intake (Daily Mean); Year: 1987; Year Type: Dry
Chloride Concentration (mg/L)
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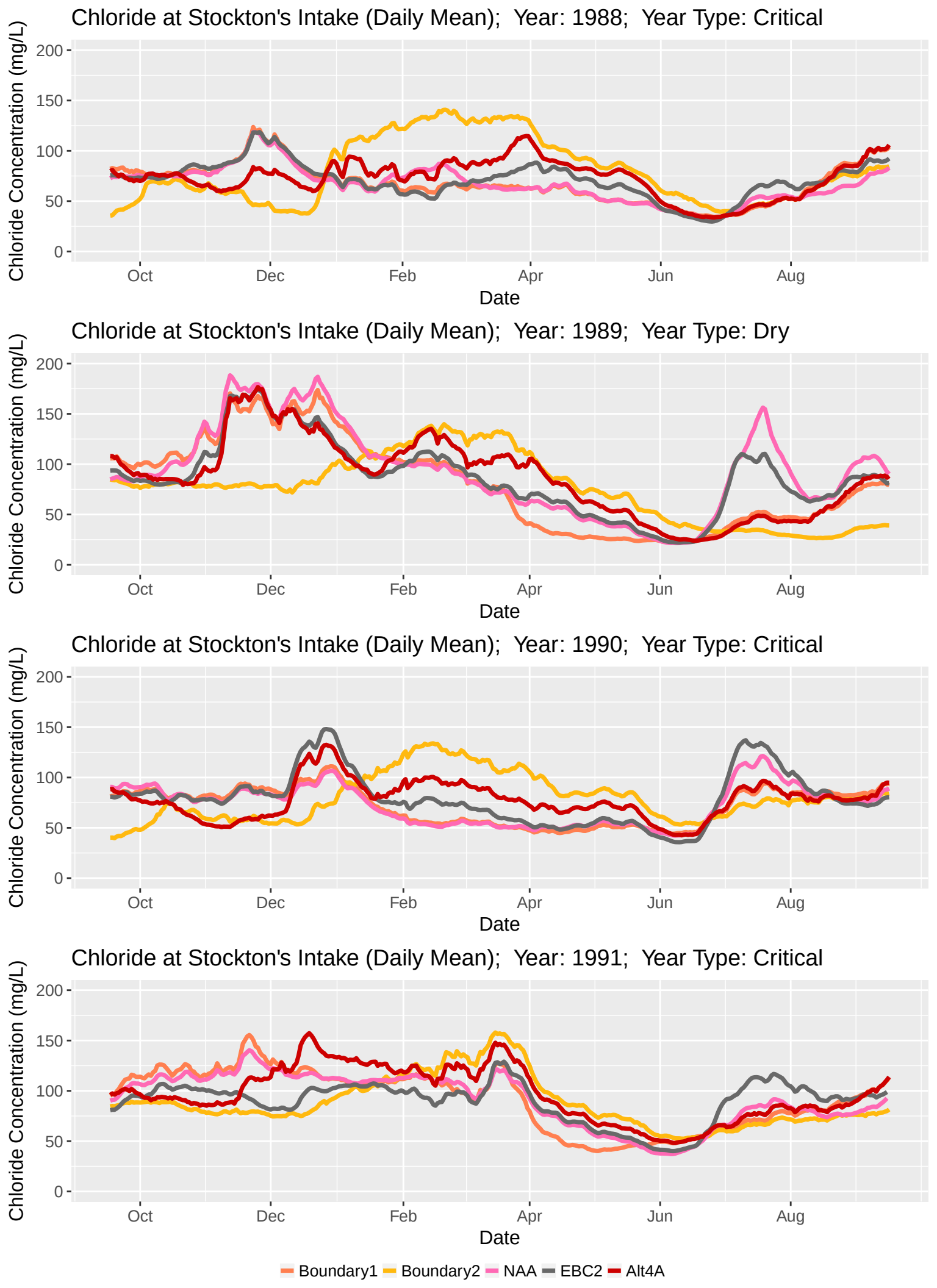
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Chloride at Stockton's Intake (Daily Mean); Year: 1991; Year Type: Critical
Chloride Concentration (mg/L)
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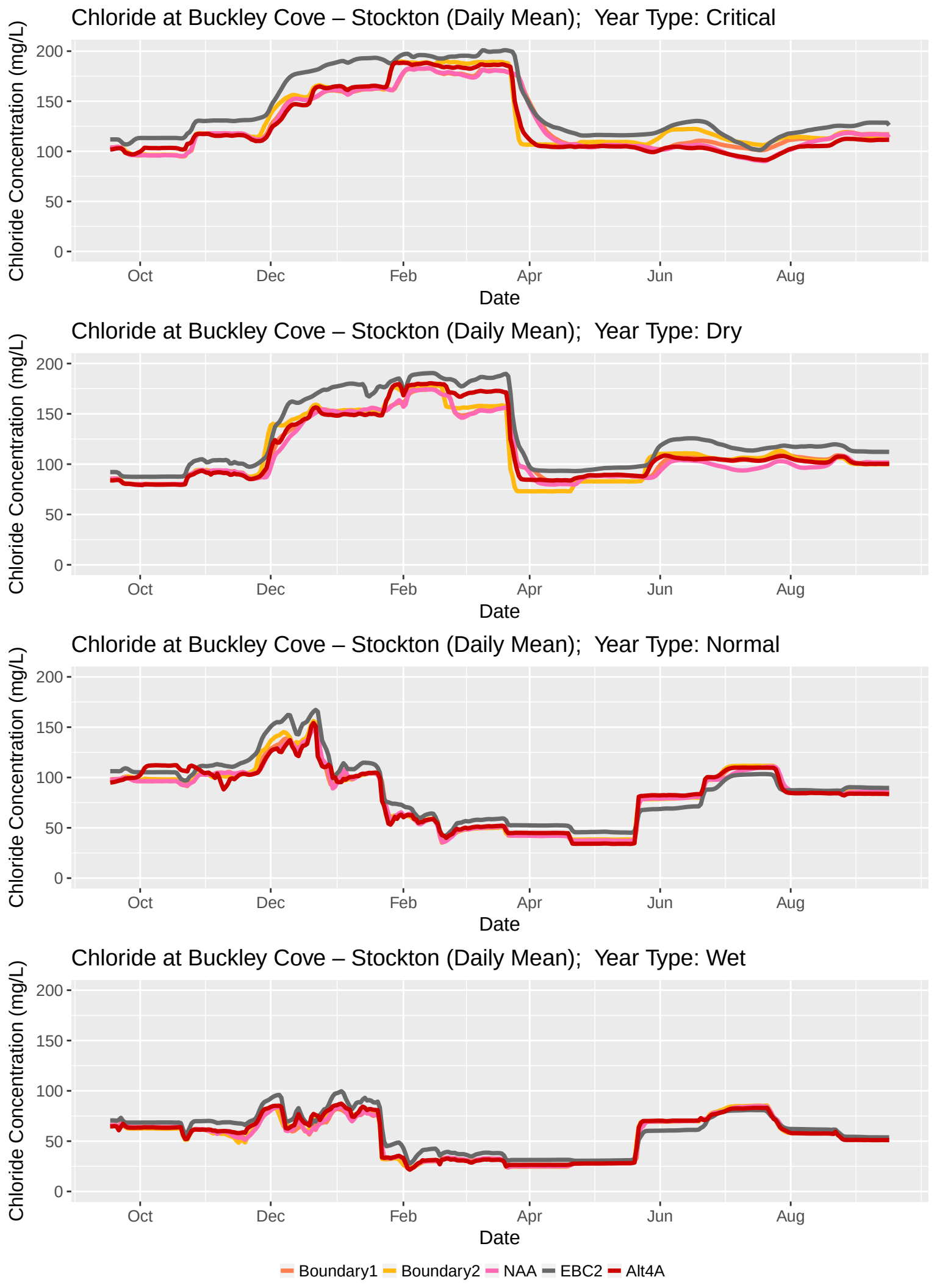
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Chloride at Buckley Cove – Stockton (Daily Mean); Year Type: Normal
Chloride Concentration (mg/L)
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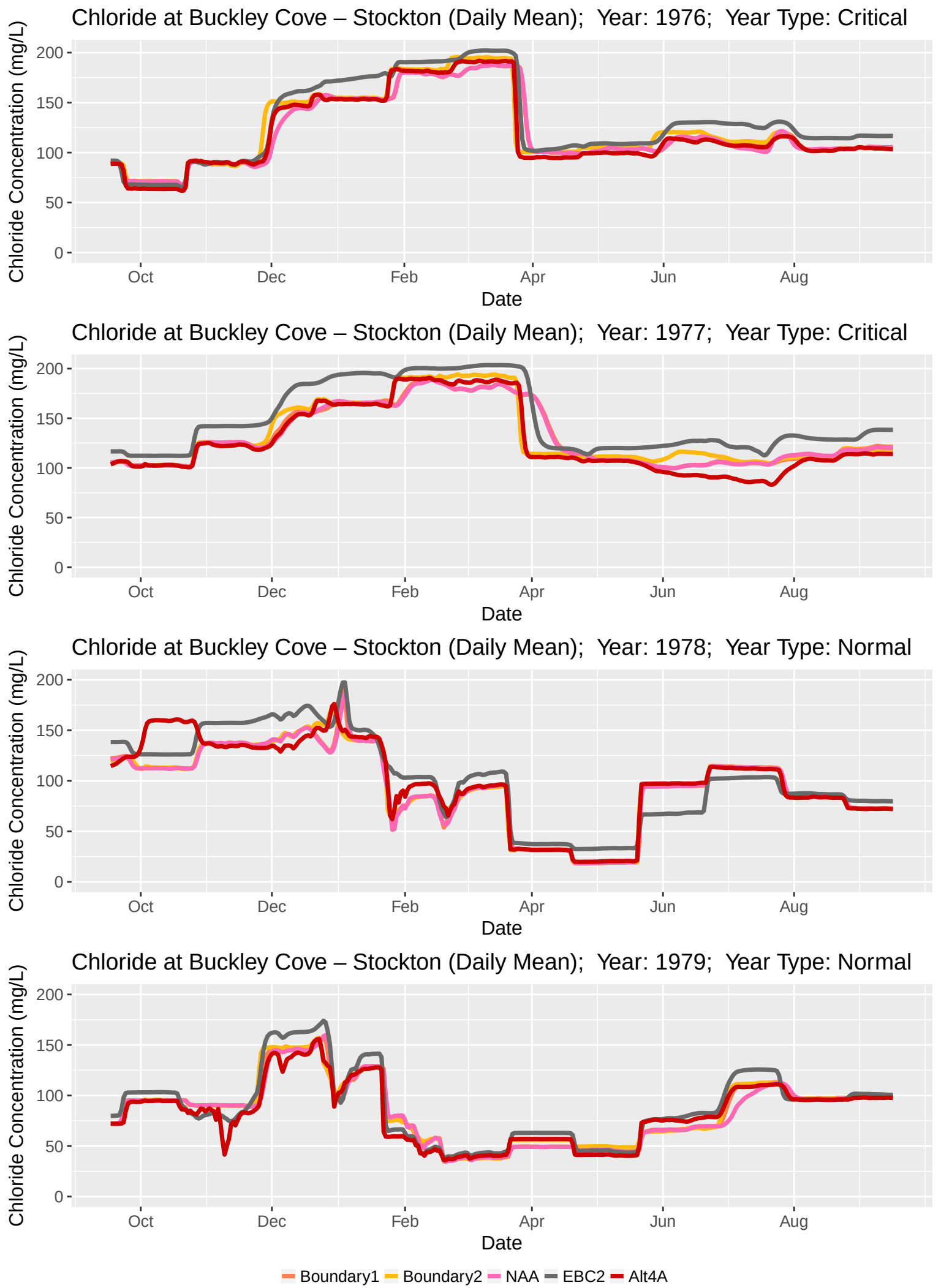
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Chloride at Buckley Cove – Stockton (Daily Mean); Year: 1979; Year Type: Normal
Chloride Concentration (mg/L)
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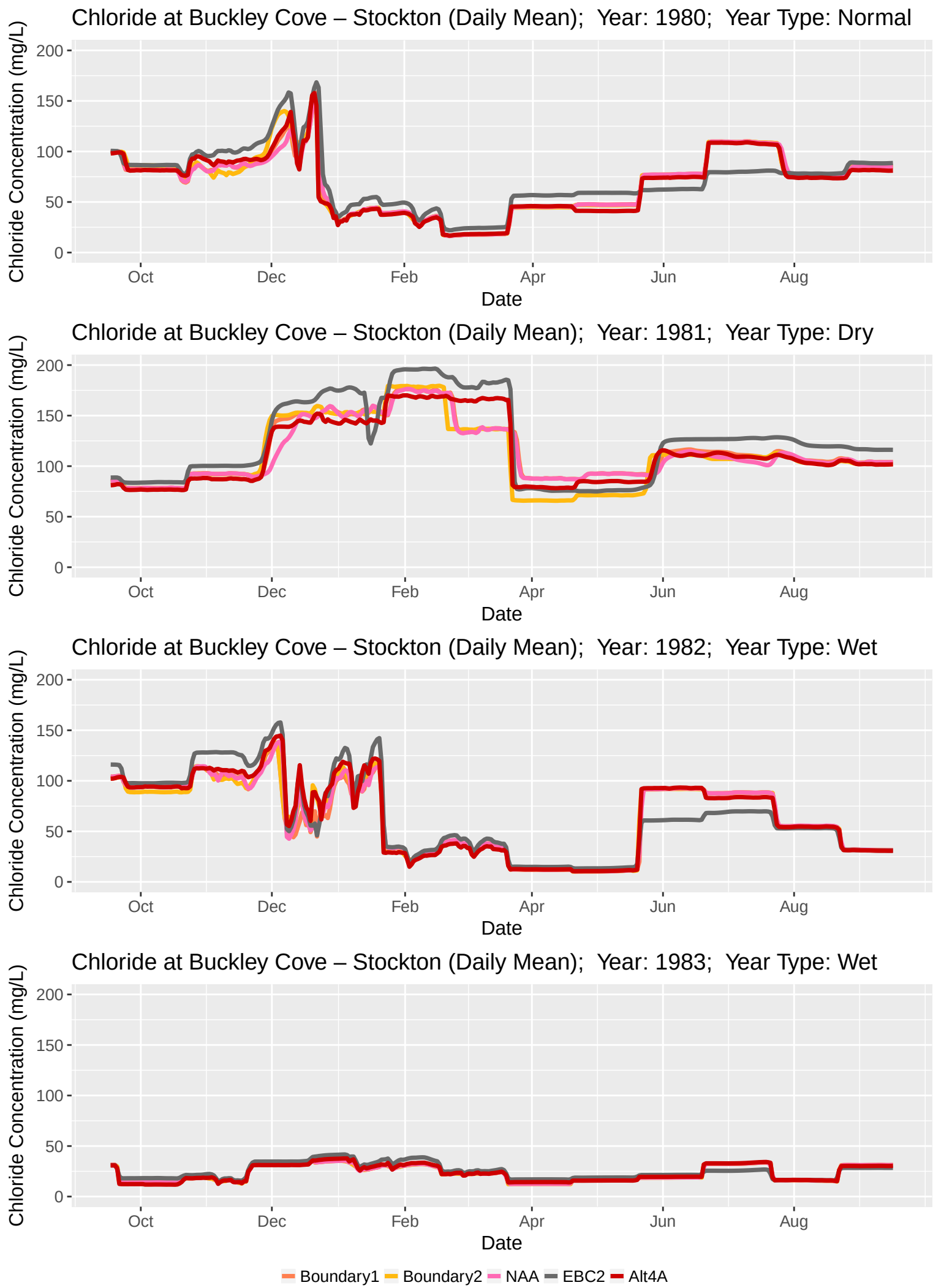
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Chloride at Buckley Cove – Stockton (Daily Mean); Year: 1981; Year Type: Dry
Chloride at Buckley Cove – Stockton (Daily Mean); Year: 1982; Year Type: Wet
Chloride at Buckley Cove – Stockton (Daily Mean); Year: 1983; Year Type: Wet
Chloride Concentration (mg/L)
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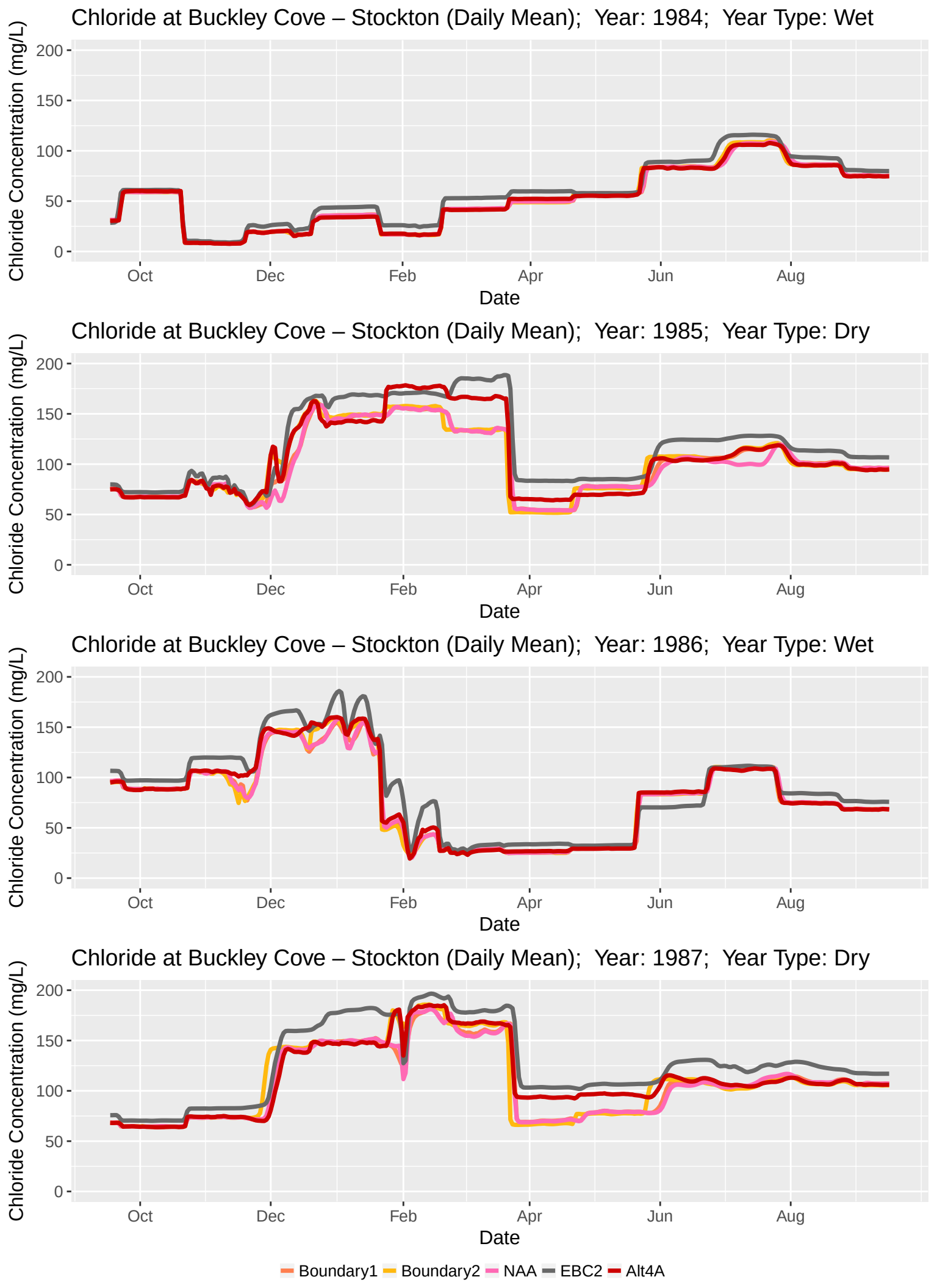
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Chloride at Buckley Cove – Stockton (Daily Mean); Year: 1987; Year Type: Dry
Chloride Concentration (mg/L)
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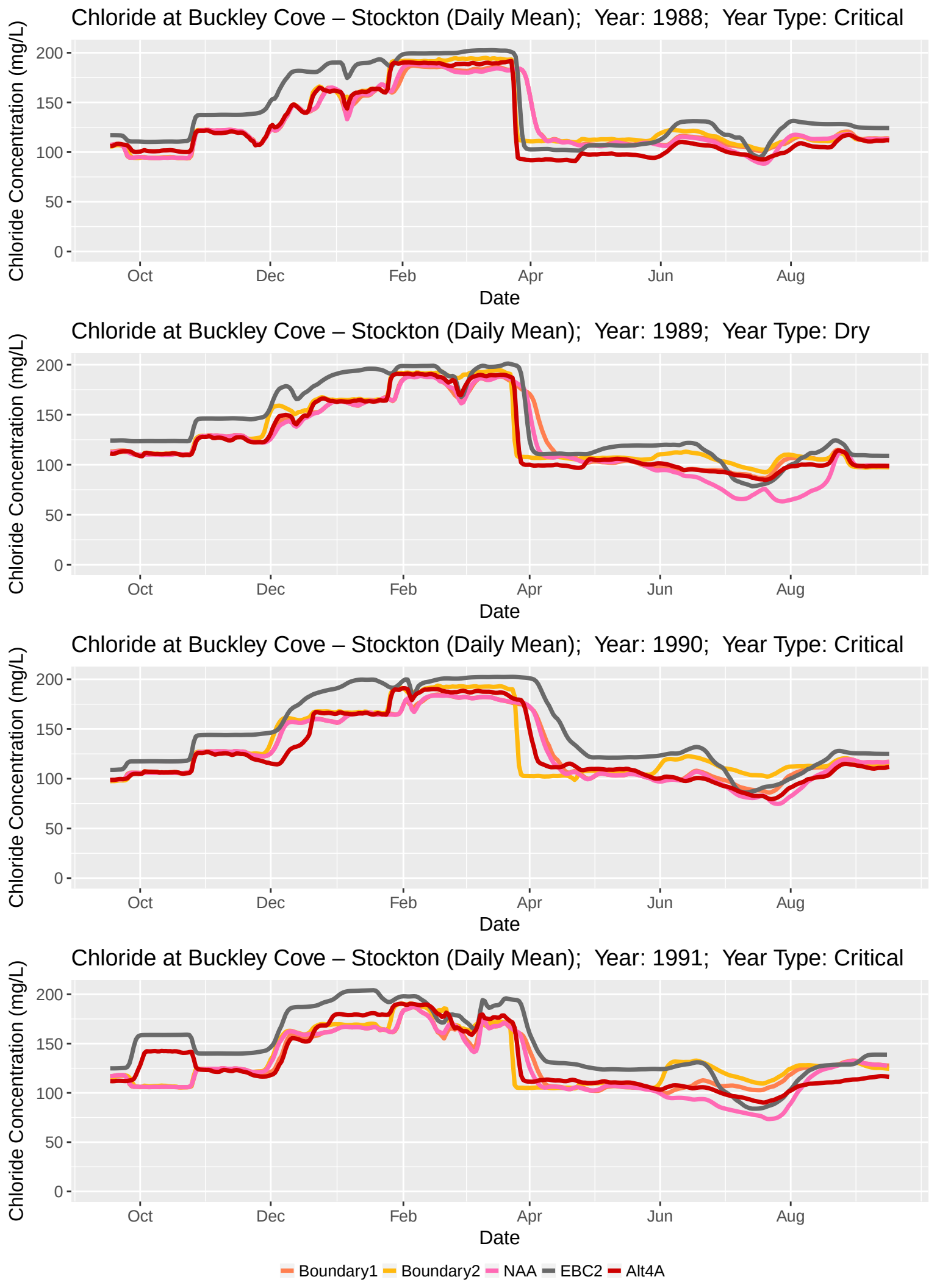
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Chloride at Buckley Cove – Stockton (Daily Mean); Year: 1991; Year Type: Critical
Chloride Concentration (mg/L)
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Appendix H

Excerpts from the FEIR/EIS for the California WaterFix Project

3.2.3.3 Adaptive Management and Monitoring Program

As described above, the BDCP conservation strategy under all the BDCP alternatives consists of 21 conservation measures that are designed to achieve the biological goals and objectives described in BDCP Chapter 3, Section 3.3, *Biological Goals and Objectives*. The conservation measures include actions to improve flow conditions, increase aquatic food production, restore habitat for the covered species, and reduce the adverse effects of many biological and physical stressors on those species. This strategy also recognizes the considerable uncertainty that exists regarding the understanding of the Delta ecosystem and the likely outcomes of implementing the conservation measures, in terms of both the nature and the magnitude of the response of covered species and of ecosystem processes that support the species.

As a component of the conservation strategy, the adaptive management and monitoring program has been designed to use new information and insight gained during the course of Plan implementation to develop and implement alternative strategies to achieve the biological goals and objectives. It is possible that some of the conservation measures will not achieve their expected outcomes, while others will produce better results than expected. The adaptive management process describes how changes to the conservation measures will be made to improve the effectiveness of the Plan over time.

Monitoring and research will be used to confirm Plan implementation and to measure the Plan's effectiveness, as well as to assess uncertainties and increase understanding of Delta ecosystems. Extensive monitoring and research are currently underway in the Delta. To address the specific requirements of the Plan, some of these monitoring activities will continue and, in some cases, be expanded. In other cases, existing monitoring activities will be modified to reflect specific implementation needs of the Plan. The BDCP will also require that new types of monitoring activities be conducted in the Delta to support Plan implementation. To guide these efforts, detailed monitoring and research plans will be developed that identify specific metrics and protocols.

Adaptive management and monitoring activities will be implemented through a single, comprehensive program. Information obtained from monitoring and research activities will be used by decision makers to improve the effectiveness of the conservation measures toward advancing the biological goals and objectives. The adaptive management and monitoring program is directly related to several key components of the BDCP, as fully described in BDCP Chapter 3Section 3.6, and BDCP Chapter 7, *Implementation Structure*.

3.2.4 Development of the California WaterFix

Among the comments received on the Draft EIR/EIS were suggestions that DWR should pursue permit terms shorter than 50 years, and that the proposed conveyance facilities should be untethered from the habitat restoration components of the BDCP, with the latter to be pursued separately. These comments highlighted two major challenges associated with the original 50-year term for the proposed Bay Delta Conservation Plan, which would be an HCP under the ESA and an NCCP under California law. The first such challenge related to the inherent difficulties in trying to predict the future status of the target aquatic species and other future environmental conditions over a 50-year period in light of climate change and other variables. The second challenge related to the difficulties, over such a long period, in trying to accurately predict the benefits of long-term conservation in contributing to the recovery of such species. Other comments questioned DWR's

and/or its tributaries that would then motivate a change to project implementation. The product of Phase 3 is an assessment report.

The collaborative science effort is expected to inform operational decisions within the ranges established by the biological opinion and 2081b permit for the proposed project. However, if new science suggests that operational changes may be appropriate that fall outside of the operational ranges evaluated in the biological opinion and authorized by the 2081b permit, the appropriate agencies will determine, within their respective authorities, whether those changes should be implemented. An analysis of the biological effects of any such changes will be conducted to determine if those effects fall within the range of effects analyzed and authorized under the biological opinion and 2081b permit. If NMFS, USFWS, or CDFW determine that impacts to listed species are greater than those analyzed and authorized under the biological opinion and 2081b permit, consultation may need to be reinitiated and/or the permittees may need to seek a 2081b permit amendment. Likewise, if an analysis shows that impacts to water supply are greater than those analyzed in the EIR/EIS, it may be necessary to complete additional environmental review to comply with CEQA or NEPA.

The collaborative science process will also inform the design and construction of the fish screens on the new intakes. This requires active study to maximize water supply, ensure flexibility in their design and operation, and minimize effects to covered species. The collaborative science process will similarly inform adaptive management of habitat restoration and other mitigation measures required by the existing and new biological opinions and 2081b permit.

Within Phase 3, the objective of Scoping is to determine whether assessment feedback is significant enough to trigger consideration of changes to a management action and the monitoring and research program, if so, then to diagnose the resources and actions needed to implement the change. Scoping is accomplished via a structured dialogue involving managers, scientists and stakeholders. The goal of the dialogue is to develop a common interpretation and understanding of the monitoring and research products. If it is determined that the new understanding is a significant insight or change in understanding that is relevant to making a change in implementation of management actions, the agencies will then develop management measures, and more effective management approaches.

The final activity associated with Phase 3 is the formulation of a management recommendation during which alternative approaches are evaluated in Phase 1 and 2 as appropriate and a management action recommendation is made. The final product is a report submitted to the Five Agency Directors for approval (Phase 4).

Phase 4 – Adapt and Adopt

The fourth phase of the adaptive management framework revolves around the decision to implement a management change through adjustments in water operations, restoration tactics, or monitoring and research support related to the project. Recommendations from Phase 3 are used to make management decisions.

The agencies, based on their authorities related to CVP/SWP (Existing BiOps/CESA, Coordinated Operations Agreement, California WaterFix) as implementing or regulatory agencies, would consider management changes, such as:

- Changes in project operations within BiOps and CESA authorizations, consistent with WQCP.

Master Response 14: Water Quality

A number of comments were received regarding the assessment methodology and water quality data sources for the EIR/EIS. Other comments questioned the water quality analyses and effects related to salinity, dissolved organic carbon, selenium, mercury, pesticides, temperature and Microcystis*. This master response addresses these topics.*

Because of the length of this master response, a short outline is presented to facilitate review of specific components of this response.

1. *Assessment Methodology and Data Sources*
    a. *Qualitative Assessments in Delta Region*
    b. *Qualitative Assessments in the Upstream of Delta Region*
    c. Qualitative Assessments in the San Francisco and San Pablo Bays
    d. *Water Quality Setting Data*
2. *Modeling for RDEIR/SDEIS and Final EIR/EIS - Alternatives 4A, 2D, and 5A*
3. *Salinity Effects Analysis*
4. *Contra Costa Water District and Antioch Intakes Water Quality Analysis*
    a. *Modeling Data Averaging Periods*
    b. *Delta Assessment Locations*
    c. *Los Vaqueros Reservoir*
    d. *CCWD Chloride Goal*
5. *Selenium Effects Analysis*
6. *Mercury Effects Analysis*
7. *Pesticides Effects Analysis*
8. *Temperature Effects on Drinking Water*
9. *Antidegradation Analysis*
10. Microcystis *Analysis*
    a. *Adequacy of the Assessment in the Upstream of Delta Region*
    b. *Adequacy of Assessment in the Delta Region*
    c. *Potential for Harmful Microcystin Levels in the San Francisco Bay*

Assessment Methodology and Data Sources

Multiple comments were received regarding the scope and adequacy of the water quality assessment presented in Chapter 8, *Water Quality*. Comments stated that constituents assessed qualitatively in the Delta should have been assessed quantitatively, that the constituent assessments conducted for the Upstream of the Delta region should have been conducted using quantitative

methods, and that more detailed assessment between Emmaton and Veterans Bridge should have been provided. Multiple comments were also received indicating that additional data should have been compiled for the affected environment/environmental setting and to support the assessment presented in Chapter 8, *Water Quality*.

Commenters also raised issues regarding the analysis regarding water quality impacts and the feasibility and/or level of detail related to proposed Best Management Practices (BMPs), mitigation measures and Environmental Commitments.

Qualitative Assessments in Delta Region

Comments stated that additional quantitative models should have been used or developed for those constituents assessed qualitatively for the Delta region. To the extent that a constituent assessment could be conducted quantitatively, using models currently developed and validated for the Delta, those tools were utilized for the water quality assessment. For some constituents, the state of the science is such that quantitative models do not exist and cannot be developed in a way that would provide reliable, meaningful results that would allow for evaluating the effects of changing source water fractions in the Delta due to the alternatives.

Commenters stated that dissolved oxygen should have been modeled. The variables that affect dissolved oxygen concentrations are numerous and include atmospheric reaeration rates, sediment oxygen demand rates, and biochemical oxygen demands of constituents in the water column. Further, dissolved oxygen rates vary daily in response to photosynthesis and respiration of algae and plants, and temperature also affects the saturation level. The fact that there are numerous variables contributes to the difficulty in applying a numerical dissolved oxygen model in this assessment. Each of these variables would have to be known, some of which are also assessed qualitatively (e.g., nutrient-related parameters, oxygen demand). While there has been work to calibrate DSM2-QUAL for dissolved oxygen modeling, work remains to allow for its use. Because the factors that affect dissolved oxygen are known, the assessment of the alternatives focused on considering how the alternatives would affect these factors in a qualitative manner and identified whether changes to these factors would contribute to a lowering of dissolved oxygen concentrations.

Similarly, for turbidity and total suspended solids (TSS), known factors that affect levels of these parameters, including river inflow rates and channel velocities, sediment loading, were considered relative to the potential for the alternative to affect these factors in an adverse direction. For turbidity and TSS, a qualitative analysis considering how the project alternatives would affect these sources and transport processes was the best available information from which to identify potential water quality changes associated with the project alternatives.

For other constituents, qualitative methods based on flow changes, sources and transport processes can fully assess potential impacts of the project on the constituent, and thus quantitative models would not add useful information to the assessment. For example, for trace metals, a qualitative assessment using historical monitoring data, which accounts for existing sources and transport processes, assesses the potential water quality changes without the need for a quantitative fate and transport model.

In summary, quantitative models are not always necessary or useful in determining effects of a project. The water quality assessment used the best available models when there was a need to use

those models to assess effects of the project alternatives, and did not use quantitative models when they were not available or necessary.

Qualitative Assessments in the Upstream of Delta Region

Similarly, the qualitative methodology used for the upstream of the Delta water quality assessment is sufficient for the purposes of the EIR/EIS given the nature of the types of changes this region is expected to experience as a result of the project alternatives. The primary effects of the alternatives on water bodies in the Upstream of Delta region are reservoir storage and releases, and thus river flows. Consideration of reservoir storage and river flow ranges under the alternatives relative to baseline conditions, and consideration to upstream sources of constituents of concern, provided the most effective assessment approach relative to the information available.

Regarding effects on the Sacramento River from Emmaton upstream to Veterans Bridge, this reach is addressed by both the assessment for the Upstream of the Delta assessments and the Delta Region assessments. The Upstream of the Delta assessments address the reach from Veterans Bridge down to Freeport/Hood. This reach is outside the domain of DSM2, and thus was addressed qualitatively. The Delta Region assessment addresses effects downstream of Freeport/Hood to Emmaton. This reach was assessed quantitatively or qualitatively, depending on constituent (see first part of response above), with modeling results provided for the Sacramento River at Emmaton.

Qualitative Assessments in the San Francisco and San Pablo Bays

Since completion of the Draft EIR/EIS, analyses of alternatives' effects on areas downstream of the Plan Area in the San Francisco and San Pablo bays was included in the RDEIR/SDEIS and this Final EIR/EIS in Chapter 8, *Water Quality*, and Chapter 11, *Fish and Aquatic Resources*. Impacts on sediment transport and turbidity were specifically analyzed in Chapter 11, Impact AQUA-218, and indicate that Alternative 4A would have a less-than-significant impact on aquatic habitat in the bay downstream of the Plan Area.

Water quality impacts on San Francisco Bay is analyzed in Chapter 8, Impact WQ-34. As stated therein, no substantial changes in DO, pathogens, pesticides, trace metals, turbidity or TSS, and *Microcystis* are anticipated in the Delta due to the implementation of Alternative 4A, relative to Existing Conditions, therefore, no substantial changes to these constituents' levels in the Bay are anticipated. Changes in Delta salinity would not contribute to measurable changes in Bay salinity, as the change in Delta outflow would be two to three orders of magnitude lower than (and thus minimal compared to) the Bay's tidal flow and thus, have minimal influence on salinity changes. Changes in nutrient load, relative to Existing Conditions, are expected to have minimal effect on water quality degradation, primary productivity, or phytoplankton community composition. As with Alternative 4, the change in mercury and methylmercury load (which is based on source water and Delta outflow), relative to Existing Conditions, would be within the level of uncertainty in the mass load estimate and not expected to contribute to water quality degradation, make the Clean Water Act Section 303(d) mercury impairment measurably worse or cause mercury/methylmercury to bioaccumulate to greater levels in aquatic organisms that would, in turn, pose substantial health risks to fish, wildlife, or humans. Similarly, based on Alternative 4 estimates, the increase in selenium load would be minimal, and total and dissolved selenium concentrations would be expected to be the same as Existing Conditions, and less than the target associated with white sturgeon whole-body fish tissue levels for the North Bay. For more information regarding updated selenium analysis please see Chapter 8, Section 8.3.1.7, *Constituent-Specific Considerations Use in the*

Assessment. These analyses described above indicate that potential effects on water quality in the San Francisco and San Pablo bays would be less than significant.

For more information on the *Microcystis* analysis, please see discussion below.

Water Quality Setting Data

The data sets compiled for the setting and assessment were selected based on availability, scope of analyses addressed, locations addressed, and period of record. The setting presents a comprehensive description of existing conditions complete with citations to current literature and data summaries. Additional data would not contribute to an appreciably altered characterization of existing conditions. The data that were compiled were of sufficient quantity and quality to characterize conditions for all constituents of concern to all beneficial uses that would be affected by the project alternatives throughout the study area and support the qualitative and quantitative assessments. Collection of additional field data is not part of the scope of the setting nor was it necessary given the extent of data that was available.

Modeling for RDEIR/SDEIS and Final EIR/EIS – Alternatives 4A, 2D, and 5A

Comments were received regarding the modeling approach employed in the RDEIR/SDEIS. These comments were concerned with:

1. The use of water quality modeling results for Alternatives 4A, 2D, and 5A based on assumptions inconsistent with the definition of the alternatives, and
2. the concurrent use of sensitivity analyses results to interpret the modeling results and resulting water quality impacts.

The comments were focused primarily on the water quality impact assessments for salinity-related parameters bromide (Impact WQ-5), chloride (Impact WQ-7), and electrical conductivity (WQ-11).

The water quality assessment in the RDEIR/SDEIS found that Alternatives 4A, 2D, and 5A would result in less-than-significant impacts on water quality for all parameters assessed except for mercury and electrical conductivity (EC). Impacts on EC would be less than significant with implementation of the proposed mitigation. The impact conclusions are based on modeling results available at the time the RDEIR/SDEIS was prepared, which included the assumption of 25,000 acres of tidal habitat restoration and implementation of Yolo Bypass enhancements, neither of which are components of Alternatives 4A, 2D, and 5A. The modeling also assumed Threemile Slough as a compliance location, even though the alternatives descriptions had the compliance location at Emmaton. Further, the Montezuma Slough Salinity Control Gate was not operated (i.e., open for the entire simulation) whereas the alternatives' description has the gate operated, consistent with the No Action Alternative. Hence, sensitivity analyses were relied upon to interpret how the operation of the Salinity Control Gate, removal of restoration areas, and Emmaton as the compliance location would change water quality relative to that shown in the modeling results. Commenters noted that "full DSM2 runs" of the alternatives should have been done to fully evaluate the water quality impacts that would occur, and that water quality impacts based on this modeling coupled with sensitivity analyses are speculative. While additional modeling is provided for the Final EIR/EIS, as discussed below, the water quality impact determinations in the RDEIR/SDEIS were not speculative. Rather, the impact analyses were based on thorough review of the modeling available, as well as

applicable sensitivity analyses, and were made based on the experience and professional judgment of water quality experts relying on the available data and modeling results. Where the modeling showed differences from the alternative definitions, explanations for expected differences in the water quality data evaluated were included to describe how professional judgment was used in the analysis.

Nevertheless, for the Final EIR/EIS, additional modeling for Alternatives 4A, 2D, and 5A is provided that removes the tidal habitat restoration and Yolo Bypass enhancements, includes Emmaton as the compliance location, and includes operation of the Montezuma Slough Salinity Control Gate. Final EIR/EIS appendices supporting Chapter 8, *Water Quality*, have been revised to show the updated modeling results, specifically Appendix 8D, *Source Water Fingerprinting Results,* Appendix 8E, *Bromide*, Appendix 8F, *Boron*, Appendix 8G, *Chloride*, Appendix 8H, *Electrical Conductivity*, Appendix 8I, *Mercury*, Appendix 8J, *Nitrate*, Appendix 8K, *Organic Carbon*, Appendix 8L, *Pesticides*, and Appendix 8M, *Selenium*. Based on the results of the updated modeling, the water quality impact conclusions presented in the RDEIR/SDEIS were confirmed, as presented in the Final EIR/EIS in Chapter 8, *Water Quality*. Alternatives 4A, 2D, and 5A would result in less-than-significant impacts on water quality for all parameters assessed except for mercury and EC. Mitigation for addressing periods of EC degradation at Emmaton was refined based on the updated modeling results. As explained in the following section, the revised analysis supports the determination that the impacts of Alternatives 4, 4A, 2D, and 5A on EC will be less than significant with mitigation.

Salinity Effects Analysis

A number of commenters asserted that there were deficiencies in the water quality assessment of the project alternatives effects on EC and chloride (i.e., salinity) in the Draft EIR/EIS. Commenters noted one or more of the following issues with the assessment:

- The frequency of exceedance of water quality objectives increased substantially under the project, relative to the baselines;
- The Draft EIR/EIS failed to include alternatives and modeling that met water quality objectives, or actions and commitments to avoid or mitigate significant adverse impacts for EC and chloride;
- Despite the Draft EIR/EIS acknowledging shortcomings in the modeling approach, modeling results are misinterpreted to provide predictions of actual future conditions and imply that whether or not BDCP (or California WaterFix) is implemented, the SWP and CVP will violate applicable salinity standards in the Delta;
- The acknowledgment of modeling shortcomings implies that some portion of the changes in chloride and EC identified for project alternatives are due to modeling artifacts or conservative modeling assumptions rather than actual project impacts, but the assessment does not attempt to differentiate between these; and
- Relocation of the Emmaton compliance location to Three Mile Slough near the Sacramento River would represent a serious degradation of Delta water quality, and this action is not assessed independent of the project.

Numerous additions and improvements to the water quality assessment of EC and chloride were made in the RDEIR/SDEIS and this Final EIR/EIS in response to these and other related comments.

In the Draft EIR/EIS, all project alternatives studied at that time (1A, 1B, 1C, 2A, 2B, 2C, 3, 4, 5, 6A, 6B, 6C, 7, 8, and 9) were found to have significant and unavoidable impacts on EC and chloride in the Delta. These impacts were due in part to apparent exceedances of Bay-Delta Water Quality Control Plan (WQCP) water quality objectives shown in the modeling results at several locations under Existing Conditions, the No Action Alternative, and BDCP alternatives. It was known that there are several factors related to the modeling approach that may result in modeling artifacts that show objective exceedance when, in reality, no such exceedance would occur. Appendix 8H, *Electrical Conductivity*, Section 8H.1, of the of the Draft EIR/EIS (now Section 8H.2 in the Final EIR/EIS) described some of these factors, but did not include an evaluation of how many of these exceedances were thought to be a result of these factors and how many were expected to be actual project impacts. Furthermore, in the Draft EIR/EIS, mitigation measures for EC and chloride called for additional modeling efforts to determine if impacts could be avoided or mitigated.

To address some of these issues, additional sensitivity analyses and other analyses were conducted to evaluate whether exceedances identified in the Draft EIR/EIS were modeling artifacts (and thus would not occur) or were potential project alternative-related impacts (which could occur). Based on the findings of these analyses, coupled with the original analyses in the Draft EIR/EIS, results of the EC and chloride assessments were qualified, and the impact determinations were revisited. Additionally, because these efforts shed light on why certain exceedances were occurring, it was possible to revise mitigation measures to better address the causes of the exceedances. All alternatives assessed in the Draft EIR/EIS (Alternatives 1A, 1B, 1C, 2A, 2B, 2C, 3, 4, 5, 6A, 6B, 6C, 7, 8, and 9), remained significant and unavoidable for chloride and EC. Although the impacts remain significant and unavoidable, the magnitude of the impacts would be substantially less than was indicated in the Draft EIR/EIS.

Regarding exceedances of the Sacramento River at Emmaton EC objective for protection of agricultural beneficial uses (which is a maximum 14-day running average of mean daily EC and applies April 1 through August 15, but varies in the specific numeric threshold by water year type and season) identified in the Draft EIR/EIS, assuming the EC compliance location at Emmaton instead of Threemile Slough greatly decreased exceedances of this objective at Emmaton to levels similar to those occurring under the No Action Alternative. Based on this finding, the project description for Alternative 4 was modified to remove the change in compliance point for the Emmaton EC objective. Previously, the project descriptions for all action alternatives included a change in compliance point from Emmaton to Threemile Slough. The revised version of Alternative 4 maintains, and does not propose to change the existing compliance point at Emmaton, while all other action alternatives assessed in the Draft EIR/EIS (Alternatives 1A, 1B, 1C, 2A, 2B, 2C, 3, 5, 6A, 6B, 6C, 7, 8, and 9) still include the proposed change to Threemile Slough. With this change, Alternative 4 no longer results in a significant impact with respect to the Bay-Delta WQCP EC objective exceedance at Emmaton, while all other alternatives assessed in the Draft EIR/EIS result in significant impacts due to EC objective exceedance at Emmaton.

The three new alternatives—Alternatives 4A, 2D, and 5A— maintain the existing compliance point at Emmaton, and thus, for the reasons discussed above, would not result in significant impacts due to EC objective exceedance at Emmaton. Also, Alternatives 4A, 2D and 5A would have less water quality effects in the western Delta related to EC, and would have fewer exceedances of the fish and wildlife EC objective between Prisoners Point and Jersey Point, such that it was feasible to introduce mitigation that would prevent significant impacts related to EC increases. After introduction of these mitigation measures, Alternatives 4A, 2D, and 5A were determined to result in less than significant impacts for EC. Finally, Alternatives 4A, 2D, and 5A would not result in substantial degradation in

the western Delta due to increased chloride concentrations, thus, the effects on chloride were determined to be less than significant.

Additional discussion of these EC and chloride analyses is included in Section 2.2.1 of the RDEIR/SDEIS, and Chapter 8, *Water Quality*, and Appendix 8H, *Electrical Conductivity*, of this Final EIR/EIS.

Contra Costa Water District and Antioch Intakes Water Quality Analysis

Some commenters asserted that there were deficiencies in the water quality assessment of the project alternatives on EC, chloride, and/or bromide (i.e., salinity), and organic carbon in the Draft EIR/EIS and/or RDEIR/SDEIS, specifically in regard to effects on drinking water intakes of Contra Costa Water District (CCWD) or City of Antioch. Commenters noted one or more of the following issues with the assessment:

- Effects at Antioch and CCWD intakes were underestimated because of coarse averaging periods (monthly, long-term, annual), and commenters assert that assessing impacts on a 15-minute or daily basis provides a more accurate representation of effects on the intake, and results in a greater level of effect than disclosed in the Draft EIR/EIS and RDEIR/SDEIS. Related, longer averaging periods are inappropriate because improvements during periods when water quality is high do not offset degradation of water quality during periods when the quality is low.
- The analysis only included two of CCWD's four intakes, and thus impacts on CCWD cannot be completely understood from the analysis.
- Modeling simulated CCWD operations, including Los Vaqueros Reservoir storage, but this information was not used in the water quality assessment.
- The project reduces the periods of time when there is good water quality in the Delta (e.g., periods when chloride concentrations at CCWD's intakes are less than 50 and 65 milligrams per liter [mg/L]), which causes a significant adverse impact on CCWD's delivered water quality and operation of the Los Vaqueros Reservoir. The Draft EIR/EIS fails to disclose impacts on CCWD's Los Vaqueros Reservoir.

Modeling Data Averaging Periods

Regarding use of 15-minute or daily data for assessment purposes, Appendix 5A, *BDCP/California WaterFix FEIR/FEIS Modeling Technical Appendix*, Section C under *Appropriate Use of Model Results* states:

> Due to the assumptions involved in the input data sets and model logic, care must be taken to select the most appropriate time-step for the reporting of model results. Sub-monthly (e.g. weekly or daily) reporting of model results is inappropriate for all models and the results should be presented on a monthly basis.

The models contain various assumptions and limitations that preclude use of daily or sub-daily modeling results for most assessments, particularly those that compare modeling results to specific thresholds. A detailed description of modeling limitations can be found in Appendix 5A as well as in Chapter 8, *Water Quality*, Sections 8.3.1.1 and 8.3.1.3. Given the models used and the associated limitations in interpreting the output, utilizing a shorter time step than monthly average for assessing water quality changes at the City of Antioch and CCWD's intakes would not result in a

more accurate assessment of effects of the project on salinity-related parameters (i.e., EC, chloride, bromide) or organic carbon. While there would be days within a month in which parameter concentrations/levels at a given location would be higher than the monthly average at that location (just as there would be days when it is lower), given the modeling limitations, comparing alternatives and baselines based on the monthly average at those locations is considered appropriate for the purposes of NEPA and CEQA.

Delta Assessment Locations

Regarding comments that the analysis only included two of CCWD's four intakes, and thus impacts on CCWD cannot be completely understood from the analysis, impacts on salinity were assessed at various locations throughout the Delta. Locations were chosen such that the assessment of changes under the alternatives relative to baselines would be representative of changes in various portions of the Delta as a whole. Some commenters have asserted that the chosen locations are not representative of other locations, in some cases by showing time-series plots of a water quality constituent concentration at the two locations and highlighting the differences. Water quality in the Delta does vary spatially and temporally. It is obvious that there are many locations in the Delta that would not have identical water quality to the chosen locations for assessment. However, assessment was done on a comparative basis (i.e., alternatives as compared to baselines). Given the purposes of the assessment, the effects of the project at the locations assessed are considered representative of the effects of the project in various portions of the Delta as a whole. Thus, although CCWD's four intakes vary in their instantaneous water quality, effects of the project on water quality at the two intakes assessed are considered representative of degree and direction of salinity changes at the other intakes.

Los Vaqueros Reservoir

Regarding use of modeling for Los Vaqueros Reservoir impacts, modeling conducted for the alternatives includes a representation of CCWD operations and Los Vaqueros Reservoir. However, the representation is a simplification and was not optimized for CCWD operations and intake options. The water quality assessment evaluated chloride levels relative to the Bay-Delta WQCP chloride objectives. Objectives that apply at Contra Costa Pumping Plant #1 ensure that the municipal and industrial beneficial use of surface water in the west Delta is protected, relative to salinity. Los Vaqueros Reservoir is not a named water body in the Basin Plan and does not contain surface water beneficial uses. Furthermore, the alternatives would not cause direct effects in Los Vaqueros Reservoir; rather, effects would be indirect and due to CCWD diversion of water from the Delta into the reservoir. Therefore, the assessment did not directly assess effects to Los Vaqueros Reservoir, but did assess effects of the project alternatives on surface water near CCWD intakes that divert water into the reservoir.

CCWD Chloride Goal

CCWD has a goal of 65 mg/L chloride in water delivered to customers. This goal is not a state or federal water quality objective. Arguments made in some comments imply that any increases in chloride represent an impact on the beneficial use of water in Los Vaqueros Reservoir, but small increases in chloride concentrations when chloride is < 100 mg/L typically do not adversely affect the municipal and industrial beneficial use of the surface water body. Adverse effects to the municipal and industrial beneficial use may occur when water quality objectives are exceeded (which was assessed via comparison of the modeling results to Bay-Delta WQCP objectives), or

when substantial water quality degradation occurs, such that exceedance is more likely and beneficial uses may be impacted. The chloride analysis include an assessment of degradation on a monthly average basis for the entire period modeled and the drought period modeled. This analysis evaluated use of assimilative capacity relative to the Bay-Delta WQCP objective of 250 mg/L that applies year-round, which is the California Department of Public Health secondary maximum contaminant level applicable to drinking water at the tap. Adverse impacts were identified where degradation would result in substantially increased risk for adverse effects to municipal and industrial beneficial uses, including at Antioch and CCWD Pumping Plant #1. Thus, the Draft EIR/EIS, RDEIR/SDEIS, and this Final EIR/EIS disclose adverse effects associated with chloride degradation where they would occur.

Finally, for chloride, project alternatives evaluated in the Draft EIR/EIS (Alternatives 1A, 1B, 1C, 2A, 2B, 2C, 3, 4, 5, 6A, 6B, 6C, 7, 8, 9) were considered to have significant and unavoidable impacts in the Delta due in part to water quality degradation occurring in the western Delta, and for some alternatives, exceedance of the 150 mg/L chloride objective. Various analyses and improvements to the assessment were added, as described in Section 2.2.1 of the RDEIR/SDEIS and as incorporated into this Final EIR/EIS. Alternatives 2D, 4A, and 5A did not show significant impacts for chloride from substantial degradation or objective exceedance in the western Delta, and thus impacts for chloride are considered less than significant for these alternatives.

Selenium Effects Analysis

A number of commenters asserted that there were deficiencies in the water quality assessment of the project alternatives effects on selenium. Commenters noted one or more of the following issues with the assessment:

- The Draft EIR/EIS failed to consider the effects of the project alternatives on selenium concentration and loading to San Francisco Bay.
- The Draft EIR/EIS underestimated the increases in selenium concentrations and loads in the Delta associated with the project alternatives.
- The Draft EIR/EIS relied on inappropriate regulatory standards.
- The Draft EIR/EIS did not provide sufficient context for the North San Francisco Bay selenium total maximum daily load (TMDL), and either inappropriately assumed future refinery effluent selenium concentrations, and/or relied on these decreases to offset increases in selenium concentrations from the Delta.
- The Draft EIR/EIS did not adequately address changes in residence time and the potential effects on selenium bioaccumulation.

The assessment of selenium was updated in the RDEIR/SEIS and this Final EIR/EIS to address these issues. As noted above, some commenters asserted that the Draft EIR/EIS failed to consider the effects of the project alternatives on San Francisco Bay. The western seaward boundary of the BDCP Plan Area has been delineated at Carquinez Strait. There are no actions in the BDCP or California WaterFix proposed to occur in the bays seaward of the Plan Area. Thus, the water quality analysis focused on assessing the alternatives' effects on water quality in the upstream of the Delta Region, within the Plan Area, and in the SWP/CVP Export Service Areas. However, public and agency comments raised questions regarding water quality effects of the alternatives in the bays seaward of Carquinez Strait. Because net flows move seaward from the Delta toward the bays, water quality

constituents present in the Delta water column could potentially be transported seaward. New screening and assessment of water quality constituent effects in San Francisco Bay were conducted in response to these concerns. These new assessments, which are reflected in the RDEIR/SDEIS and this Final EIR/EIS analysis, did not identify any new adverse or significant impacts or any substantial increase in the severity of previously identified impacts, except in the case of selenium. For Alternatives 6A–9, projected increases in selenium loading and concentrations in North San Francisco Bay were considered adverse (under NEPA) and significant and unavoidable (under CEQA), while Alternatives 1A–5A, including Alternatives 4A and 2D, were considered not adverse and less than significant. This is consistent with findings for the assessment of selenium in the Delta, in which the same conclusions were reached for the same alternatives. The driving factor for the adverse impacts under Alternatives 6A–9 in both the western Delta and the North Bay is modeled increases in selenium concentrations and loading, leading to potentially higher body burdens of selenium in certain species.

As noted above, some commenters asserted that the Draft EIR/EIS underestimated the increases in selenium concentrations and loads in the Delta associated with the project alternatives. Section 2.2.2 of the RDEIR/SDEIS describes changes made relative to the Draft EIR/EIS, which have been carried forward into this Final EIR/EIS. The relevant portion of this section that addresses this issue reads:

> Modeling for selenium (water concentrations and bioaccumulation modeling) was updated on the basis of a review and update of Delta source water concentrations of selenium. Public comments on the Draft EIR/EIS indicated that the source water concentrations for both the Sacramento River and San Joaquin River were likely biased high (i.e., the modeling approach used concentrations for both rivers that indicated more selenium than is currently actually present in the rivers). This bias was due to inclusion of older monitoring data that used higher detection limits (on both rivers), as well as to the decrease of selenium concentrations on the San Joaquin River that has occurred over time. The source water concentrations for the Sacramento River, San Joaquin River, Yolo Bypass, and San Francisco Bay were reevaluated and re-derived using the most recent data available, and the water concentration and bioaccumulation modeling was updated based on these updated source water concentrations. Results showed that there was generally a greater increase from Existing Conditions and No Action concentrations to the concentrations under the alternatives than previously predicted (i.e., the relative effect of the project was greater). However, the absolute values of all of the estimated concentrations for Existing Conditions, the No Action Alternative, and all Project Alternatives were lower than modeled previously in the Draft EIR/EIS, and thus were lower relative to thresholds of concern and water quality criteria used in the assessment.

As noted above, some commenters asserted that the Draft EIR/EIS relied on inappropriate regulatory standards. Section 2.2.2 of the RDEIR/SDEIS describes changes made relative to the Draft EIR/EIS which have been carried forward into this Final EIR/EIS. The relevant portion of this section that addresses this issue reads:

> Numeric thresholds used in the selenium assessment were also updated. Current ambient water quality criteria are based on waterborne selenium concentrations, but EPA released draft water quality criteria for the protection of freshwater aquatic life from toxic effects of selenium in May 2014. The draft criteria include tissue-based concentrations, which are most closely associated with reproductive effects. The criteria also include water concentrations, which are to be used when fish tissue data is not available. The draft criteria have not been finalized, but they represent the most current science on numeric thresholds protective of beneficial uses. Accordingly, these draft criteria were used in the updated assessment. Specifically, the whole-body fish tissue threshold was lowered from 9 mg/kg to 8.1 mg/kg. Additionally, the criterion against which water concentration changes were compared was lowered from 2 µg/L to 1.3 µg/L, which is the EPA draft criterion for lentic (i.e., still or slow-moving) water bodies.

As noted above, some commenters asserted that the Draft EIR/EIS did not provide sufficient context for the North San Francisco Bay selenium TMDL, and either inappropriately assumed future refinery effluent selenium concentrations, and/or relied on these decreases to offset increases in selenium concentrations from the Delta. Chapter 8, *Water Quality,* Section 8.1.3.15, has been revised to state that the primary selenium loading to the North Bay and the Suisun Bay area is from the Delta and oil refineries in the vicinity of Carquinez Strait. Text was added regarding the methods of assessment of San Francisco Bay selenium, in Chapter 8, Section 8.3.1.8*,* that states:

> Selenium levels in the North Bay have declined gradually since the early 1990s before the North Bay was first 303(d) listed (Tetra Tech 2008). This was due in part to the fact that petroleum refineries, which were a major source of dissolved selenium to the North Bay at that time, implemented controls by 1999 that decreased selenium in their discharges by up to 66% (Tetra Tech 2008).

Text was also added in Section 8.3.1.8 and in the assessment of Conservation Measure (CM) 2–CM21 provided in Impact WQ-26 in Chapter 8, which states:

> The San Francisco Bay Water Board is conducting a TMDL project to address selenium toxicity in the North San Francisco Bay (North Bay), defined to include a portion of the Delta, Suisun Bay, Carquinez Strait, San Pablo Bay, and the Central Bay (State Water Resources Control Board 2011).The North Bay selenium TMDL will identify and characterize selenium sources to the North Bay and the processes that control the uptake of selenium by wildlife. The TMDL will quantify selenium loads, develop and assign waste load and load allocations among sources, and include an implementation plan designed to achieve the TMDL and protect beneficial uses.

Language regarding the expectation that point sources in North San Francisco Bay would be reduced under the TMDL was removed. The assessment did not rely on these decreases, but was stating the expectation based on a reasonably foreseeable change in water quality at the early and late-long-term time steps. However, because the language implied that these point sources were the primary source of selenium in the North Bay (which they are not—the Delta is the primary source), and because the TMDL is still under development, the language was removed.

As noted above, some commenters asserted that the Draft EIR/EIS did not adequately address changes in residence time and the potential effects on selenium bioaccumulation. Section 2.2.2 of the RDEIR/SDEIS describes changes made relative to the Draft EIR/EIS, which have been carried forward into this Final EIR/EIS. The relevant portion of this section that addresses this issue reads:

> An expanded discussion of residence time in the Delta and its effect on selenium bioaccumulation in the Delta was added in response to agency comments. Increased water residence times could increase the bioaccumulation of selenium in biota, thereby potentially increasing fish tissue and bird egg concentrations of selenium. However, if increases in fish tissue or bird egg selenium were to occur due to residence time changes alone, the increases would likely be of concern only where fish tissues or bird eggs are already elevated in selenium to near or above thresholds of concern. That is, where biota concentrations are currently low and not approaching thresholds of concern, changes in residence time alone would not be expected to cause them to then approach or exceed thresholds of concern. Based on the analysis, the most likely area in which biota tissues would be at levels high enough that additional bioaccumulation due to increased residence time from restoration areas would be a concern is the western Delta and Suisun Bay for sturgeon. Nevertheless, estimates of residence time increases in these areas are small enough that they are not expected to substantially affect selenium bioaccumulation in the western Delta.

As noted in Section 2.2.2 of the RDEIR/SDEIS:

> The changes discussed above did not result in any changes to the impact conclusions. Alternatives 6-9 remain adverse (under NEPA) and significant and unavoidable (under CEQA) due to modeled

substantial increases in fish tissue concentrations for sturgeon in the western Delta, while Alternatives 1–5 remain less than significant.

Refer to Chapter 8, *Water Quality*, Section 8.1.3.15 in Appendix A for updated existing selenium concentrations in the affected environment and a description of the EPA draft criteria. Refer to Section 8.3.1.7 in Appendix A for the updated source water concentrations used in the modeling and updated thresholds used in the assessment. Refer to Impact WQ-25 in Sections 8.3.3.1 through 8.3.3.16 in Appendix A for the selenium assessment updated based on the new modeling. Further details on the updates can be found in Appendix 8M, *Selenium*, in Appendix A.

Finally, some commenters asserted that the Draft EIR/EIS erred in making an assumption that selenium loading to, and concentrations in, the San Joaquin River would decrease over time as a result of the TMDL, Grassland Bypass Project, and Basin Plan objectives. Additionally, some commenters asserted that selenium loading would increase as a result of greater water deliveries to the San Joaquin River watershed, and thus greater agricultural irrigation drainage would occur. The analysis of Alternatives 1A, 1B, 1C, 2A, 2B, 2C, 3, 4, 5, 6A, 6B, 6C, 7, 8, and 9 was conducted at the late long-term time step, and analysis of Alternatives 2D, 4A, and 5A at the early and late long-term time steps, both of which would be after implementation of the project. Just as climate change and sea level rise were assumed at this time step, other reasonably foreseeable changes in water quality were included in the assessment. The TMDL and Basin Plan limit the amount of selenium that can be discharged to the San Joaquin River, which in turn will require San Joaquin Valley agricultural dischargers to reduce selenium loading in their drainage. If selenium concentrations in discharges cannot come into compliance with the limits set forth in these regulations, the discharges will be prohibited. In either case, selenium loading to the San Joaquin River is expected to decrease at the early and late long-term time steps, relative to Existing Conditions. Thus, although there is uncertainty over whether treatment technologies will be cost effective, and therefore whether selenium concentrations in drainage water can be reduced, the current regulatory framework can be reasonably expected to result in decreasing loads of selenium to the San Joaquin River, relative to Existing Conditions. Furthermore, project alternatives are not expected to substantially increase the long term average amount of water exported from the Delta or delivered to the San Joaquin River watershed, relative to Existing Conditions or the No Action Alternative. Appendix 5A, *BDCP/California WaterFix FEIR/FEIS Modeling Technical Appendix*, Section C, provides these data for alternatives assessed in the Draft EIR/EIS and Alternatives 4A, 2D, and 5A. Therefore, it is not expected that the project would result in greater amounts of irrigation drainage water entering the San Joaquin River. Finally, selenium concentrations in the water exported to the San Joaquin Valley is expected to decrease as a result of the project alternatives, as described in Chapter 8, *Water Quality*, in the *SWP/CVP Export Service Areas* sections of the Impact WQ-25 discussions.

Mercury Effects Analysis

A number of commenters asserted that there were deficiencies in the water quality assessment of the project alternatives on mercury in the Draft EIR/EIS. Commenters noted one or more of the following issues with the assessment:

- The assessment did not introduce mitigation for potential effects on mercury of restoration activities;
- The assessment did not adequately characterize or quantify the potential effects on mercury of restoration activities;
- The assessment did not evaluate compliance with the Delta Methylmercury TMDL.

The assessment performed for CM2–CM22 for Alternatives 1A, 1B, 1C, 2A, 2B, 2C, 3, 4, 5, 6A, 6B, 6C, 7, 8, and 9 was qualitative, and indicated that increases in methylmercury could occur as a result of restoration activities. Restoration activities under these alternatives would include approximately 75,000 acres of restoration, including (generally) 65,000 acres of tidal restoration and 10,000 acres of floodplain restoration, including Yolo Bypass improvements. Specific mitigation measures to address the potential increases in methylmercury were not proposed, because *CM12 Methylmercury Management*, already included commitments to do everything practicable to minimize conditions that promote production of methylmercury in restored areas and subsequent introduction to the foodweb. Due to uncertainties as to the effectiveness of CM12, the conclusion was that CM2–CM22 could have a significant and unavoidable effect on mercury.

Alternatives 4A, 2D, and 5A differ from the other alternatives (1A, 1B, 1C, 2A, 2B, 2C, 3, 4, 5, 6A, 6B, 6C, 7, 8, and 9) in their evaluation of effects on mercury from other Environmental Commitments (Environmental Commitments 3, 4, 6, 7, 9–12, 15, and 16). These three alternatives contain substantially less tidal restoration acreage than the other alternatives. Thus, although the potential types of effects on mercury resulting from implementation of the Environmental Commitments under Alternatives 4A, 2D, and 5A would be generally similar to those described for the other alternatives, the magnitude of effects on mercury and methylmercury at locations in the Delta related to habitat restoration would be considerably lower.

It is not expected that the level of tidal restoration proposed under Alternatives 4A, 2D, and 5A would cause fish tissue concentrations to increase, at a measurable level, outside of the immediate localized area of the tidal restoration sites. However, habitat restoration has the potential to increase water residence times and increase accumulation of organic sediments that are known to enhance methylmercury bioaccumulation in biota in the vicinity of the restored habitat areas. Fish tissue concentrations in the Delta already frequently exceed the Water Quality Control Plan (Basin Plan) for the Sacramento River and San Joaquin River Basins objective of 0.24 mg/kg for trophic level 4 fish in the Delta. The proposed tidal restoration may cause or contribute to increased fish tissue concentrations at a local level, though the magnitude of the increase is not quantifiable. The Basin Plan also includes methylmercury allocations for wetlands for various areas of the Delta. Because the proposed tidal restoration acreage is very small, it is possible that, relative to the allocations, the increased loading would be very small. However, it is still unknown how and if the allocations can be attained. The Basin Plan also requires that for many areas of the Delta (i.e., those needing reductions in methylmercury), proponents of wetland restoration projects shall (a) participate in Control Studies, or implement site-specific study plans, that evaluate practices to minimize methylmercury discharges, and (b) implement methylmercury controls as feasible. Design of restoration sites would be guided by Environmental Commitment 12, which requires development of site-specific mercury management plans as restoration actions are implemented to minimize methylmercury production. The effectiveness of minimization and mitigation actions implemented according to the mercury management plans is not known at this time, although the potential to reduce methylmercury concentrations exists based on current research.

Although this would constitute a potential environmental impact, these increases would not be expected to cause injury to downstream water rights holders or other downstream water users, because effects would be localized to the restoration sites. Nor would such localized impacts adversely affect any other downstream beneficial users.

Additionally, Alternatives 2D, 4A, and 5A do not include Yolo Bypass improvements. As with the other alternatives, specific mitigation measures were not proposed for mercury in the Draft EIR/EIS,

RDEIR/SDEIS, or this Final EIR/EIS, because all practicable activities are included as part of the project in Environmental Commitment 12, which references CM12.

The discussion of CM12 in Chapter 3, *Description of Alternatives*, Section 3.6.2.2, contains a full description of activities, including commitment to produce and implement project-specific mercury management plans for each restoration project. This description also describes that these plans will be prepared in conjunction with the Central Valley Regional Water Quality Control Board Methylmercury TMDL program. The section also states the following:

> Because methylmercury is an area of active research in the Delta, each new project-specific methylmercury management plan would be updated based on the latest information about the role of mercury in Delta ecosystems or methods for its characterization or management. Results from monitoring of methylmercury in previous restoration projects would also be incorporated into subsequent project-specific methylmercury management plans. This program would be developed and implemented within the context of Methylmercury TMDL and Mercury Basin Plan Amendment requirements. In each of the BDCP project-specific methylmercury management plans developed under CM12, relevant findings and mercury control measures identified as part of TMDL Phase I Control Studies will be considered and integrated into restoration design and management plans. CM12 would also be implemented to meet any requirements of the U.S. Environmental Protection Agency (EPA) or the California Department of Toxic Substances Control actions.

Quantification of the effects or range of effects of restoration activities was not conducted both because of lack of site-specific information, and because research is ongoing regarding these activities and their effects on mercury. That is, quantification of effectiveness and performance is not possible generally, but can only be performed on a site-specific basis and with appropriate monitoring data to inform the site-specific evaluation. Although studies have been performed which provide useful information on the effects of restoration on methylmercury production, and also which provide insight into potential management strategies, application of the findings of these studies to the restoration areas proposed under the project is not possible without site-specific information on restoration areas. Further, as current and future research is conducted, it is expected that a more comprehensive understanding of how to design and manage restored areas, and thus further minimize the effects of restoration on mercury will be possible. Project-Specific Mercury Management Plans for each restoration project proposed under Environmental Commitment 12 or CM12 allow for the latest research and for site-specific information to be incorporated into the assessment and design.

Given the limitations regarding quantification of effects on mercury, a specific evaluation of achieving Delta methylmercury TMDL load allocations for various subareas was not feasible. As described above, the Basin Plan language implementing the TMDL states that in those areas of the Delta needing reductions in methylmercury, proponents of wetland restoration projects either "(a) participate in Control Studies, or implement site-specific study plans, that evaluate practices to minimize methylmercury discharges, and (b) implement methylmercury controls as feasible." Design of restoration sites will be guided by CM12 or Environmental Commitment 12, which requires development of site-specific mercury management plans as restoration actions are implemented to minimize methylmercury production. Actions proposed under the project are and will be in full compliance with the Delta Methylmercury TMDL and Basin Plan Amendments implementing it.

Pesticides Effects Analysis

Numerous comments were received regarding the characterization of existing pesticide conditions and method of assessment. Comments on the characterization of existing pesticide conditions focused on data that should have been or not been used to characterize existing conditions in Chapter 8, *Water Quality*, Section 8.1, *Environmental Setting/Affected Environment*. The comments on the pesticides assessment focused on whether the assessment should have been quantitative, instead of qualitative, and that discussion of concentrations and bioaccumulation were needed.

With regard to the characterization of existing pesticides conditions please see the discussion of data sources above. With regard to the pesticides assessment, the project condition with implementation of the alternatives at 2060 precludes the ability to perform a quantitative assessment for pesticides. As explained in the "Pesticides" sub-section of the Section 8.3.1.7, *Constituent-Specific Considerations Used in the Assessment*, while data availability was one consideration of the analysis, another primary consideration was the dynamic state of the pesticide market. It is unknown which pesticides and practices will be in use upon implementation of the proposed project, and data availability regarding current application rates will not resolve this unknown. Therefore, the assessment uses best available information and assesses conceptually the major mechanism of change that the project alternatives will affect and can be reasonably foreseen, which is changes in river flows and source water fractions in the Delta, and thus dilution. Hence, the pesticides assessment in Impacts WQ-21 and WQ-22 were performed qualitatively, based on quantitative changes in flow and source water fractions. Because the assessment was qualitative, the discussion addressed whether concentrations of pesticides, as a class of constituents, would increase or decrease, but could not provide specific concentration changes for specific pesticides. Also, because the assessment was qualitative, and due to the inability to predict future pesticide conditions at the project implementation timeframe, specific information regarding pesticide interactions (e.g., synergistic or additive effects) were not a component of the assessment.

Comments stated that the modeled increases in San Joaquin River fraction and increase in residence time, which is accounted for in the modeled source water fractions, at certain Delta locations would mix with local municipal, industrial, and agricultural inputs of pesticides. Discharges from these sources are not a component of the project alternatives or otherwise being conducted by the project proponents. These discharges come from individual entities that are regulated through the state's various NPDES regulatory programs and toxicity that may be caused by these discharges containing pesticides is addressed through that program.

In response to comments related to the combined effects of water conveyance facilities and the conservation measures or Environmental Commitments, these concurrent effects on pesticides are addressed in the RDEIR/SDEIS and this Final EIR/FEIS, in Section 8.3.3.21, *Concurrent Effects of the Action Alternatives*.

Temperature Effects on Drinking Water

A number of comments were received regarding the potential for the temperature changes identified in the Draft EIR/EIS and RDEIR/SDEIS for the American River and Sacramento River to affect municipal and domestic water supply uses.

As noted by the commenters, the effects of temperature changes in the Draft EIR/EIS and RDEIR/SDEIS focused on effects to aquatic life, because of all the beneficial uses of the waters in the

affected environment, aquatic life uses were identified as the uses that would be most sensitive to the projected changes in temperature that would occur with the project alternatives. This was not to conclude that other uses (e.g., MUN, recreation, irrigation) are not affected by water temperature. Rather, it was concluded that aquatic life uses would be *most sensitive* to the changes due to the project alternatives, because these other uses are typically not precluded by small changes in seasonal water temperature that would occur due to the project alternatives.

Temperature can be a factor in disinfection byproduct (DBP) formation in drinking water supplies. There are other factors that can affect the degree to which DBPs are formed, including chlorine dose and contact time, and the duration of time the water spends in the distribution system. In its *Initial Distribution System Evaluation Guidance Manual for the Final Stage 2 Disinfectants and Disinfection Byproducts Rule, Appendix A, Formation of Disinfection Byproducts* (2006), the U.S. Environmental Protection Agency (EPA) notes that because the formation rate of DBPs increases with increasing temperature, the highest levels may occur in the warm summer months. EPA also notes that water demands are often higher during summer months, resulting in lower water age within the distribution system, which helps to control DBP formation. Furthermore, high temperature conditions in the distribution system promote the accelerated depletion of residual chlorine, which can mitigate DBP formation and promote biodegradation of haloacetic acids (HAAs). Therefore, higher temperatures in diverted surface waters do not necessarily translate to higher DBPs in the delivered water supply.

Temperature changes relative to Existing Conditions, which reflects the combined effects of the project alternative, climate change, and increased water demands, and relative to the No Action Alternative, which reflects the effects of the project alternative, are provided in Appendix 11D, *Sacramento River Water Quality Model and Reclamation Temperature Model Results Utilized in the Fish Analysis*, for the Sacramento River at Hamilton City and American River at Watt Avenue. Results relative to the No Action Alternative, which show the project alternative effects, show both increases and decreases in river temperature due to the project alternatives of relatively low magnitude, with most monthly average temperature changes being in the range of -0.5–+0.5°F, though a few alternatives in some months would result in increased monthly average temperatures of up to 1.4°F. Thus, while the modeling results may show large increases in monthly average temperatures in the Sacramento and American rivers in some months relative to Existing Conditions, those changes are primarily due to climate change and the warming ambient air temperatures. The project alternatives would cause relatively small increases and decreases in river temperatures.

The temperature increases relative to the No Action Alternative, and thus due to the project alternatives, in the American River would occur primarily in the months of July through September, though slight increases of 0.1°F would occur under some alternatives in April, November, and December. Similarly, for the Sacramento River, the temperature increases would occur primarily in the months of July through September, though slight increases of 0.1°F would occur under some alternatives in April, October, and December. The summer months, when the greatest temperature increases would occur, also correspond to the period of highest water use.

In the Journal AWWA (American Water Works Association), Westerhoff et al. (2000) published *Applying DBP models to full-scale plants*, in which an empirical model was developed relating raw temperature, along with dissolved organic carbon, bromide, pH, chlorine dose and contact time to total trihalomethane (TTHM) formation according to the equation:

$$TTHM = 0.0412\ [TOC]^{1.10}[Cl_2]^{0.152}[Br^-]^{0.068}\ [Temp]^{0.61}[pH]^{1.60}[Time]^{0.26}$$

TTHM (in micrograms per liter, µg/L) is a function of chlorine dose (Cl_2 in mg/L), bromide concentration (Br^- in µg/L), water temperature (degrees Celsius), pH, and contact time between the chlorine and water (hours). At temperatures between 68 and 82°F, a 0.5°F increase in temperature would result in a 0.6–0.8% increase in TTHM concentration. Conversely, a 2°F increase in temperature would result in a 2.5–3.4% increase in TTHM concentration, and a 4°F increase would result in a 5–7% increase in TTHM concentration. Based on this model, a substantially larger increase in temperature than what would occur due to the project alternatives would be necessary for there to be a noticeable increase in TTHM concentrations in delivered water supply, particularly considering the other variables involved.

Finally, one comment refers to information in the 2013 American River Sanitary Survey as evidence that higher river temperatures would contribute to higher DBP concentrations. While temperature is known to be a factor in DBP formation, the 2013 American River Sanitary Survey is not definitive evidence of a relationship between higher surface water temperature and DBP formation in the American River basin. The 2013 American River Sanitary Survey anecdotally indicates that San Juan Water District TTHM concentrations in recent years are related to higher Folsom Dam release temperatures, through time-series plots and a general comparison of average TTHM concentrations over a period and average temperature over the same period. However, there is no formal correlation analysis presented to confirm that there is indeed a significant relationship between TTHM concentration and dam release temperature, or the extent of the relationship relative to other factors. Information in the American River Sanitary Survey is insufficient to conclude that the small increases (or decreases) in temperature identified in the EIR/EIS relative to the No Action Alternative (and thus due to the project alternatives) would contribute to adverse (or beneficial) effects to drinking water.

Based on this discussion it is concluded that this Final EIR/EIS appropriately considered aquatic life uses to be the beneficial uses most sensitive to the temperature changes that would occur due to the project alternatives. No changes to the analysis related to this issue have been made.

Antidegradation Analysis

Several comments on the Draft EIR/EIS and RDEIR/SDEIS state that the discussion of potential water quality effects of BDCP and California WaterFix implementation is inadequate with respect to the federal and state antidegradation policies. Three common themes addressed in the comments include: 1) inadequate regulatory background setting provided; 2) inadequate analysis of degradation effects; 3) and/or incomplete analysis of project alternative-related effects relative to all provisions of the federal and state antidegradation policies. These issues are addressed sequentially in this response.

First, regarding the descriptions of the federal and state antidegradation policies, the descriptions of the federal antidegradation policy (Chapter 8, *Water Quality*, Section 8.2.1.3) and the state policy (Section 8.2.2.6) are sufficient for the purposes of the EIR/EIS analysis. Moreover, the descriptions summarize the key provisions of the policies verbatim, but admittedly do not include introductory or other information provided in the policy documents. The adequacy of the policy descriptions is directly related to the methods of assessment of degradation, which are described below in response to other aspects of the comments.

Regarding the second theme (adequacy) and third theme (completeness) of the comments regarding the assessment of degradation per se, the degradation assessment methods are described in Chapter

8, Section 8.3.2, *Effects Determinations*. As described, degradation was assessed via reduction of assimilative capacity with respect to regulatory objectives. The potential for each alternative to cause water quality degradation was addressed for each constituent of concern identified in Chapter 8, *Water Quality*. For those constituents with modeling results available, degradation was evaluated from the quantitative use of assimilative capacity relative to that occurring under existing conditions and the No Action Alternative. The comparison to the No Action Alternative allowed for identifying effects solely due to the alternative, separate from climate change. For constituents assessed qualitatively, the potential for degradation considered the degree to which that constituent could be increased by the alternative, and whether current conditions were degraded (i.e., Clean Water Act section 303(d) listings). Moreover, for constituents regulated by narrative regulatory water quality objectives, only a qualitative analysis of potential degradation is possible.

Thirdly, regarding completeness of the constituent degradation analyses, the comments generally suggest that impact determinations for constituents addressed in Chapter 8 should be based on consistency with the federal and state policies. However, the project proponents disagree with this assertion. In California, consistency with the federal and state antidegradation policies falls to the Regional and State Water Boards in considering point-source discharge and certain water rights permits. The State Water Board has interpreted the state antidegradation policy to incorporate the federal antidegradation policy in situations where the policy is applicable. (SWRCB Order WQ 86-17.) However, the application of federal antidegradation policy to nonpoint source discharges such as the California Water Fix is limited.[204] For the California Water Fix, application of antidegradation policy will be considered by the State Water Board with respect to DWR's and Reclamation's application to change the points of diversion in their water right permits. The water quality degradation analysis presented in the EIR/EIS is but one part in the subsequent application of the policy. As noted in many of the comment letters, antidegradation policy addresses both the amount of water quality lowering that would occur and determination of whether lowered water quality is necessary to accommodate economic or social development in the area and consistent with maximum benefit to the State. Water development and water conservation projects may be considered to be important social and economic developments that justify a lowering of water quality (see Water Code Section 13000). Similarly, environmental protection may constitute important social development, justifying a change in water quality, even if no other social or economic benefits to the community are demonstrated (see Letter from William R. Attwater to Regional Water Board Executive Officers, Federal Antidegradation Policy [Sept. 7, 1987]). Where there are two conflicting uses, the quality of water for one use may be reduced where the change improves water quality for the other, in appropriate circumstances (see 40 CFR Section 131.11(a)(1)). This latter analysis is outside the scope of CEQA and NEPA and necessarily requires evaluation of economic value and social issues associated with the existing beneficial uses, and the economic costs and changes in these conditions that may occur as a result of lowered water quality.

[204] 40 Code of Federal Regulations (CFR) 131.12(a)(2) requires that the "State shall assure that there shall be achieved the highest statutory and regulatory requirements for all new and existing point sources and all cost-effective and reasonable best management practices for nonpoint source control." The EPA Handbook, Chapter 4, clarifies this as follows: "Section 131.12(a)(2) does not mandate that States establish controls on nonpoint sources. The Act leaves it to the States to determine what, if any, controls on nonpoint sources are needed to provide attainment of State water quality standards (See CWA Section 319). States may adopt enforceable requirements, or voluntary programs to address nonpoint source pollution. Section 40 CFR 131.12(a)(2) does not require that States adopt or implement best management practices for nonpoint sources prior to allowing point source degradation of a high quality water. However, States that have adopted nonpoint source controls must assure that such controls are properly implemented before authorization is granted to allow point source degradation of water quality."

Furthermore, such socio-economic evaluation is stipulated in the federal and state policies to consider these issues via "intergovernmental coordination", "public participation", and "the State's planning processes". The evaluation of socio-economic changes is not the purview of the water quality analysis, which is rightfully focused on providing the numerical and qualitative assessment of only the potential for implementation of the project alternatives to degrade existing water quality with respect to regulatory water quality objectives and beneficial uses. The socio-economic evaluation must be conducted based on the results of the EIR/EIS and the later stages of regulatory agency review and permitting of changes to the CVP and SWP water rights orders, or other regulatory actions.

Microcystis Analysis

Commenters raised several concerns with the discussion and assessment of the effects of the project alternatives on *Microcystis* blooms and associated toxicity in the affected surface water bodies. Based on public comments received on the Draft EIR/S, new Impacts WQ-32 and WQ-33 were added to the assessments of Alternatives 1A, 1B, 1C, 2A, 2B, 2C, 3, 4, 5, 6A, 6B, 6C, 7, 8, and 9 in Chapter 8, *Water Quality*, and included with the assessments of Alternatives 4A, 2D, and 5A in Section 4 of the RDEIR/SDEIS. Common themes in the comments on the *Microcystis* assessment included:

1. Adequacy of the assessment in the upstream of Delta region.
2. Adequacy of the assessment in the Delta region.
3. Potential for harmful microcystin levels in the San Francisco Bay.

Adequacy of the Assessment in the Upstream of Delta Region

Impact WQ-32, which addresses water quality impacts due to *Microcystis*, addresses the upstream of Delta region, as well as the Delta and SWP/CVP export service areas. As described in Impact WQ-32, *Microcystis* bloom development is limited upstream of the Delta due to high water velocity and low residence times. Further, *Microcystis* blooms upstream of the Delta have only been documented in eutrophic lakes such as Clear Lake. Large reservoirs upstream of the Delta are typically characterized by low nutrient concentrations, where other phytoplankton outcompete cyanobacteria, including *Microcystis*. Thus, bloom development is limited in watersheds of the eastern tributaries (Cosumnes, Mokelumne, and Calaveras Rivers), and the San Joaquin River upstream of the Delta. The Sacramento River and American River are also characterized by high water velocity and low residence times, providing inadequate conditions for the development of *Microcystis* blooms. High water velocity and low residence times are not expected to change under the No Action Alternative (early long-term [ELT] and late long-term [LLT]) or the project alternatives. Thus, any modified reservoir operations under the project alternatives are not expected to promote *Microcystis* production upstream of the Delta, relative to Existing Conditions and the No Action Alternative (ELT and LLT).

Adequacy of Assessment in the Delta Region

Commenters have suggested that the assessment of *Microcystis* does not properly link acknowledged alternative-related increases in residence times in the Delta to a worsening of the *Microcystis* problem. The assessment of *Microcystis* for all the project alternatives considers the degree to which the alternative would change in residence time as a factor in making a significant impact determination for the alternative. For Alternatives 1A, 1B, 1C, 2A, 2B, 2C, 3, 4, 5, 6A, 6B, 6C, 7,

8, and 9, modeled long-term average residence time data was available from which to determine the overall magnitude and direction of the change in residence time. Reductions in residence time contributed to the significant impact calls for these alternatives and the provision of Mitigation Measures WQ-32a and WQ32b.

Commenters are concerned that under Alternatives 4A, 2D and 5A there would be increases in residence time that would cause increased *Microcystis* production in the Delta, and with the adequacy of the assessment conducted to determine impacts in the Delta region. At the time of preparation of the RDEIR/SDEIS, Delta residence time modeling data was not available for Alternatives 4A, 2D, and 5A. Thus, a qualitative assessment was conducted to determine anticipated changes to residence times. This qualitative assessment considered how climate change, restoration activities, and changes in flows that may occur from the alternatives would affect water quality in the Delta. Residence time modeling completed for Alternative 4 was used as a basis for the qualitative assessment. Impact conclusions were then based on the qualitative assessment. Residence time modeling for Alternative 4A and the No Action Alternative has since been conducted for the Biological Assessment for the California WaterFix. The quantified changes in residence times within Delta sub-regions allows for more definitively determining the overall magnitude and direction of the change in residence time. However, modeling was not available for Alternatives 2D and 5A. Thus, there is some uncertainty regarding the degree to which operations and maintenance of Alternatives 2D and 5A would affect water residence times in the Delta.

In response to comments, and based on *Microcystis* life history strategy to outcompete other algal species and the inhibitory effect of flow and turbulence on its ability to do so, maximum daily channel velocities (which creates channel turbidity and turbulence) also were assessed using DSM2 velocity output for a number of locations throughout the Delta. The supplemental evaluation of residence time and flow velocities has been incorporated into the *Microcystis* assessment for Alternative 4A in Impact WQ-32 of the Final EIR/S. The evaluation of flow velocities shows little to no effects on peak daily velocities under Alternative 4A compared to the No Action Alternative at each location assessed. This indicates that areas of the Delta that are currently turbid will remain turbid and vertical mixing of the water column will be similar under Alternative 4A and the No Action Alternative. As described in Impact WQ-32 of the Final EIR/EIS, *Microcystis* cannot effectively retain its buoyancy or outcompete other faster growing phytoplankton in turbid, turbulent waters. Therefore, based on Alternative 4A maintaining similar to equivalent peak daily flow velocities in Delta channels (and turbidity and turbulence conditions), Alternative 4A would not be expected to substantially increase the frequency or geographic extent of *Microcystis* blooms in the Delta, relative to what would occur under the No Action Alternative.

To ensure project operations do not create increased *Microcystis* blooms in the Delta, water flow through Delta channels would be managed through real-time operations, particularly the balancing of the north and south Delta diversions. By operating the south Delta pumps more frequently during periods conducive to increased *Microcystis* blooms, residence times could be substantially reduced when necessary.

Commenters are concerned that under Alternatives 4A, 2D, and 5A there would be warmer temperatures that would cause increased *Microcystis* production in the Delta. As described in BDCP Appendix 5F, *Biological Stressors on Covered Fish*, climate warming, not water operations, will determine future water temperatures in the Delta. Thus, Alternatives 4A, 2A, or 5D are not expected to contribute to *Microcystis* bloom formation, relative to the No Action Alternative (ELT and LLT),

because water residence time, peak daily flow velocities, and water temperatures are not projected to notably change throughout the Delta due to project operations.

Finally, commenters are concerned that under Alternatives 4A, 2D, and 5A there would be reduced turbidity that would cause increased *Microcystis* production in the Delta. As described in Chapter 8, *Water Quality*, Section 8.3.1.7 and in the discussion of Impact WQ-29: Effects on TSS and Turbidity Resulting from Facilities Operations and Maintenance, changes in TSS and turbidity levels within the Delta under the project alternatives could not be quantified, but are expected to be similar to Existing Conditions and the No Action Alternative (ELT and LLT). Thus, no substantial changes to water clarity that would substantially affect *Microcystis* levels are anticipated.

The potential effects of all the project alternatives on *Microcystis* bloom formation potential in the Delta, and impacts on human health, has been fully assessed in Final EIR/EIS Chapter 8, *Water Quality*, in Impacts WQ-32 and WQ-33 and in Chapter 25, *Public Health*, in Impacts PH-8 and PH-9. The assessments recognize the potential impacts on drinking water uses and human health. Hence, Mitigation Measure WQ-32 is provided to address the significant impacts identified for Alternatives 1A, 1B, 1C, 2A, 2B, 2C, 3, 4, 5, 6A, 6B, 6C, 7, 8, and 9; Alternatives 4A, 2D, and 5A would not have significant impacts related to *Microcystis*.

Potential for Harmful Microcystin Levels in the San Francisco Bay

The assessment of *Microcystis* in San Francisco Bay in Impact WQ-34 in Chapter 8, *Water Quality*, acknowledges the presence of microcystin in the bay, and also acknowledges the potential for it to be transported in from the Delta inflow. The potential for increased *Microcystis* blooms and microcystin concentrations due to the project alternatives must be considered separate from the effects of climate change and associated temperature increases that would contribute to increased blooms. Potential increases in *Microcystis* blooms in the Delta are not expected to affect San Francisco Bay for three reasons: 1) the amount of dilution available in San Francisco Bay to dilute downstream transport of Delta-derived *Microcystis* and associated microcystins, 2) *Microcystis* is intolerant to San Francisco Bay salinity, and 3) high Delta outflows that could potentially transport *Microcystis* primarily occur during the winter and spring runoff season when the environment of San Pablo Bay (the only embayment of San Francisco Bay that would have low enough salinities to possibly support *Microcystis* blooms) is unsuitable for *Microcystis* growth. Nevertheless, Mitigation Measures WQ-32a and WQ-32b, which are provided for Alternatives 1A, 1B, 1C, 2A, 2B, 2C, 3, 4, 5, 6A, 6B, 6C, 7, 8, and 9 due to the potential impacts of CM2 and CM4 discussed in Impacts WQ-32 and WQ-33, would be available to lessen the effects in the Delta, which would further reduce any potential for effects in San Francisco Bay.

Table Cl-70. Period average change in chloride concentrations (mg/L) for Alternative 4A ELT relative to existing conditions and the No Action Alternative ELT.
Calculation of chloride concentrations was based on EC-chloride relationship.

Chloride			OCT		NOV		DEC		JAN		FEB		MAR		APR		MAY		JUN		JUL		AUG		SEP		Annual Avg. Change	
Alt 4A ELT	Location	Period [a]	Ex. Cond.	No Act. ELT	Ex. Cond.	No Act. ELT	Ex. Cond.	No Act. ELT	Ex. Cond.	No Act. ELT	Ex. Cond.	No Act. ELT	Ex. Cond.	No Act. ELT	Ex. Cond.	No Act. ELT	Ex. Cond.	No Act. ELT	Ex. Cond.	No Act. ELT	Ex. Cond.	No Act. ELT	Ex. Cond.	No Act. ELT	Ex. Cond.	No Act. ELT	Ex. Cond.	No Act. ELT
Delta Interior	Moke. R. (SF) at Staten Island	ALL	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
			(3%)	(3%)	(3%)	(2%)	(1%)	(1%)	(5%)	(4%)	(4%)	(4%)	(5%)	(4%)	(3%)	(3%)	(0%)	(1%)	(0%)	(1%)	(3%)	(3%)	(2%)	(1%)	(1%)	(1%)	(3%)	(2%)
		DROUGHT	0	0	0	0	0	0	1	1	0	1	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0
			(2%)	(2%)	(1%)	(1%)	(-0%)	(1%)	(4%)	(3%)	(1%)	(3%)	(1%)	(3%)	(-0%)	(1%)	(0%)	(1%)	(0%)	(1%)	(5%)	(4%)	(2%)	(-1%)	(1%)	(0%)	(1%)	(2%)
	SJR at Buckley Cove	ALL	-8	0	-12	-1	-22	4	-21	3	-13	6	-10	5	-18	-6	-9	1	-6	4	-7	7	-11	6	-12	-1	-12	2
			(-8%)	(0%)	(-11%)	(-1%)	(-15%)	(4%)	(-13%)	(3%)	(-9%)	(5%)	(-7%)	(4%)	(-18%)	(-7%)	(-12%)	(2%)	(-6%)	(5%)	(-7%)	(7%)	(-10%)	(6%)	(-11%)	(-1%)	(-11%)	(2%)
		DROUGHT	-14	0	-18	-1	-33	2	-32	6	-14	12	-12	9	-32	-12	-14	3	-22	7	-11	15	-15	18	-17	0	-20	5
			(-11%)	(-0%)	(-13%)	(-1%)	(-20%)	(2%)	(-15%)	(4%)	(-6%)	(6%)	(-6%)	(5%)	(-19%)	(-8%)	(-12%)	(3%)	(-17%)	(7%)	(-9%)	(17%)	(-12%)	(20%)	(-12%)	(-0%)	(-13%)	(4%)
	Franks Tract	ALL	-60	-41	-125	-97	-67	-44	-32	-30	-10	-6	2	3	5	5	2	3	3	2	-49	-32	-44	-32	-29	-20	-34	-24
			(-32%)	(-24%)	(-54%)	(-48%)	(-32%)	(-24%)	(-24%)	(-23%)	(-16%)	(-10%)	(5%)	(8%)	(15%)	(16%)	(5%)	(9%)	(6%)	(5%)	(-38%)	(-28%)	(-29%)	(-23%)	(-15%)	(-11%)	(-28%)	(-22%)
		DROUGHT	-38	-52	-98	-112	-41	-40	-22	-35	-11	-15	2	1	5	6	7	5	9	0	-88	-61	-55	-24	31	18	-25	-26
			(-17%)	(-21%)	(-36%)	(-39%)	(-15%)	(-15%)	(-12%)	(-18%)	(-15%)	(-20%)	(6%)	(1%)	(18%)	(19%)	(22%)	(14%)	(22%)	(1%)	(-42%)	(-33%)	(-24%)	(-12%)	(13%)	(7%)	(-16%)	(-17%)
	Old R. at Rock Slough	ALL	-35	-22	-96	-76	-60	-40	-28	-29	-7	-2	4	7	2	4	-1	2	5	5	-36	-23	-39	-29	-22	-17	-26	-18
			(-23%)	(-16%)	(-51%)	(-45%)	(-33%)	(-25%)	(-21%)	(-21%)	(-10%)	(-4%)	(9%)	(15%)	(4%)	(9%)	(-2%)	(4%)	(12%)	(13%)	(-35%)	(-26%)	(-31%)	(-25%)	(-14%)	(-11%)	(-24%)	(-18%)
		DROUGHT	-15	-25	-75	-92	-37	-34	-16	-33	-12	-13	2	5	5	8	7	7	9	4	-69	-49	-54	-29	20	12	-19	-20
			(-8%)	(-13%)	(-35%)	(-40%)	(-16%)	(-15%)	(-9%)	(-18%)	(-13%)	(-14%)	(4%)	(8%)	(9%)	(16%)	(18%)	(17%)	(24%)	(8%)	(-43%)	(-35%)	(-28%)	(-17%)	(10%)	(6%)	(-14%)	(-15%)
Western Delta	Sac. R. at Emmaton	ALL	-145	-126	-144	-100	-9	-12	-36	-34	-12	-11	8	0	7	2	1	0	2	-10	110	88	140	85	58	82	-2	-3
			(-25%)	(-23%)	(-26%)	(-20%)	(-3%)	(-4%)	(-28%)	(-27%)	(-17%)	(-15%)	(21%)	(-1%)	(20%)	(4%)	(1%)	(0%)	(1%)	(-5%)	(49%)	(36%)	(42%)	(22%)	(10%)	(15%)	(-1%)	(-1%)
		DROUGHT	-146	-156	-134	-128	33	-14	-50	-74	-5	-18	16	0	13	5	27	-1	36	-6	211	171	204	76	215	84	35	-5
			(-19%)	(-20%)	(-17%)	(-17%)	(7%)	(-3%)	(-26%)	(-34%)	(-5%)	(-15%)	(36%)	(-1%)	(35%)	(11%)	(23%)	(-1%)	(15%)	(-2%)	(64%)	(46%)	(46%)	(13%)	(27%)	(9%)	(10%)	(-1%)
	SJR at Antioch	ALL	-547	-321	-524	-292	-142	-58	-140	-116	-63	-60	19	-7	22	3	1	-3	-7	-40	36	39	151	123	-111	55	-109	-56
			(-37%)	(-26%)	(-35%)	(-23%)	(-14%)	(-6%)	(-28%)	(-25%)	(-25%)	(-24%)	(16%)	(-5%)	(19%)	(2%)	(1%)	(-1%)	(-2%)	(-8%)	(4%)	(5%)	(14%)	(11%)	(-8%)	(4%)	(-14%)	(-8%)
		DROUGHT	-485	-390	-448	-272	-78	-56	-164	-191	-52	-94	47	-6	40	14	44	-10	37	-39	89	82	273	219	259	129	-36	-51
			(-26%)	(-22%)	(-23%)	(-16%)	(-5%)	(-4%)	(-23%)	(-26%)	(-13%)	(-21%)	(29%)	(-3%)	(28%)	(8%)	(12%)	(-2%)	(5%)	(-5%)	(7%)	(7%)	(21%)	(16%)	(14%)	(7%)	(-4%)	(-5%)
	Sac. R. at Mallard Island	ALL	-697	-273	-670	-276	-237	-75	-238	-196	-97	-104	78	2	73	14	28	-6	3	-100	136	116	294	226	-194	131	-127	-45
			(-23%)	(-10%)	(-23%)	(-11%)	(-11%)	(-4%)	(-19%)	(-16%)	(-12%)	(-13%)	(17%)	(0%)	(14%)	(2%)	(3%)	(-1%)	(0%)	(-6%)	(7%)	(6%)	(12%)	(9%)	(-7%)	(5%)	(-7%)	(-3%)
		DROUGHT	-640	-310	-666	-270	-194	-76	-343	-347	-86	-182	136	18	123	46	77	-15	46	-61	207	190	396	284	297	156	-54	-47
			(-17%)	(-9%)	(-18%)	(-8%)	(-6%)	(-3%)	(-18%)	(-18%)	(-6%)	(-12%)	(21%)	(2%)	(17%)	(6%)	(5%)	(-1%)	(2%)	(-3%)	(8%)	(7%)	(14%)	(9%)	(8%)	(4%)	(-2%)	(-2%)
Major Diversions (Pumping Stations)	NBA at Barker Slough PP	ALL	-1	0	0	0	0	0	0	0	1	0	0	0	-1	0	0	0	-1	0	-1	0	0	0	0	0	0	0
			(-3%)	(1%)	(-1%)	(1%)	(1%)	(1%)	(1%)	(1%)	(4%)	(-0%)	(1%)	(1%)	(-3%)	(1%)	(-0%)	(1%)	(-3%)	(0%)	(-3%)	(0%)	(-0%)	(1%)	(-1%)	(1%)	(-1%)	(1%)
		DROUGHT	-1	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	-1	0	0	0	0	0	0	0	0	0
			(-4%)	(1%)	(-1%)	(0%)	(3%)	(2%)	(1%)	(-0%)	(2%)	(0%)	(4%)	(1%)	(5%)	(2%)	(3%)	(1%)	(-3%)	(-0%)	(-2%)	(0%)	(1%)	(1%)	(0%)	(1%)	(1%)	(1%)
	Contra Costa PP #1	ALL	-28	-5	-59	-45	-78	-59	-43	-26	4	-17	-9	1	0	8	-6	-4	4	6	-21	-17	-52	-33	-27	-26	-26	-18
			(-17%)	(-4%)	(-37%)	(-31%)	(-43%)	(-36%)	(-24%)	(-16%)	(4%)	(-13%)	(-10%)	(2%)	(0%)	(12%)	(-9%)	(-7%)	(8%)	(14%)	(-24%)	(-20%)	(-37%)	(-27%)	(-19%)	(-19%)	(-22%)	(-16%)
		DROUGHT	-5	12	-49	-68	-71	-76	-15	-27	-4	-28	-2	-10	5	9	5	0	8	5	-44	-38	-86	-46	-6	2	-22	-22
			(-3%)	(7%)	(-26%)	(-33%)	(-31%)	(-32%)	(-7%)	(-12%)	(-4%)	(-21%)	(-3%)	(-12%)	(6%)	(13%)	(8%)	(0%)	(17%)	(10%)	(-35%)	(-31%)	(-39%)	(-25%)	(-4%)	(1%)	(-16%)	(-15%)
	Banks PP	ALL	-42	-33	-63	-51	-59	-42	-56	-52	-31	-29	-34	-30	-15	-10	-3	2	-9	-7	-33	-27	-47	-35	-38	-35	-36	-29
			(-38%)	(-32%)	(-48%)	(-43%)	(-41%)	(-33%)	(-41%)	(-39%)	(-30%)	(-29%)	(-39%)	(-36%)	(-18%)	(-13%)	(-4%)	(3%)	(-14%)	(-11%)	(-45%)	(-40%)	(-46%)	(-39%)	(-35%)	(-33%)	(-35%)	(-31%)
		DROUGHT	-27	-26	-52	-64	-50	-40	-37	-49	-31	-36	-70	-59	-26	-16	0	6	6	7	-46	-37	-74	-50	-21	-18	-36	-32
			(-20%)	(-19%)	(-35%)	(-39%)	(-28%)	(-24%)	(-22%)	(-27%)	(-22%)	(-25%)	(-52%)	(-48%)	(-20%)	(-14%)	(0%)	(6%)	(8%)	(11%)	(-45%)	(-40%)	(-48%)	(-38%)	(-15%)	(-14%)	(-27%)	(-25%)
	Jones PP	ALL	-38	-32	-59	-51	-41	-26	-60	-48	-57	-46	-62	-56	-21	-17	-21	-17	-26	-30	-28	-24	-34	-25	-24	-21	-39	-33
			(-35%)	(-31%)	(-46%)	(-42%)	(-27%)	(-19%)	(-40%)	(-35%)	(-44%)	(-39%)	(-52%)	(-50%)	(-24%)	(-20%)	(-28%)	(-24%)	(-41%)	(-44%)	(-34%)	(-31%)	(-33%)	(-27%)	(-23%)	(-20%)	(-36%)	(-32%)
		DROUGHT	-32	-36	-45	-58	-41	-32	-81	-72	-68	-51	-101	-91	-21	-17	-30	-26	-22	-23	-50	-42	-45	-26	-7	-5	-45	-40
			(-24%)	(-26%)	(-30%)	(-36%)	(-23%)	(-19%)	(-42%)	(-39%)	(-36%)	(-29%)	(-52%)	(-50%)	(-16%)	(-13%)	(-26%)	(-24%)	(-35%)	(-36%)	(-47%)	(-42%)	(-30%)	(-20%)	(-5%)	(-4%)	(-31%)	(-29%)

[a] ALL: Water years 1976-1991 represent the 16-year period modeled using DSM2. DROUGHT: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).

evaluation of the project's impacts in the meantime does not 'giv[e] due consideration to both the short-term and long-term effects' of the project … and does not serve CEQA's informational purpose well" (*Ibid*., quoting State CEQA Guidelines Section 15126.2, subd. (a)). Although the Supreme Court did not adopt a strict prohibition against the exclusive use of a future baseline consisting of anticipated conditions at the commencement or mid-point of project implementation, any sole reliance on such a future baseline is only permissible where a CEQA lead agency can show, based on substantial evidence, that an existing conditions analysis would be "misleading or without informational value" (*Ibid*., 457).

Existing Conditions

Although originally formulated prior to the issuance of the *Neighbors for Smart Rail* decision, the CEQA baseline employed in this EIR/EIS is consistent with the principles outlined above. Following CEQA Guidelines Section 15125(a), the CEQA baseline was developed to assess the significance of impacts of the BDCP alternatives in relation to the Existing Conditions at the time of the NOP. The Existing Conditions assumptions for the EIR/EIS include facilities and ongoing programs that existed as of February 13, 2009 (publication date of the most recent NOP and Notice of Intent [NOI] to prepare this EIS/EIR), that could affect or could be affected by implementation of the action alternatives (refer to Appendix 1D, *Final Scoping Report*, for copies of the NOP and NOI).

In some instances, though, certain assumptions were updated within the CEQA lead agency's reasonable discretion. For example, the June 2009 Biological Opinion (BiOp) for salmonid species from National Marine Fisheries Service (NMFS) was included within the CEQA baseline even though it had not been issued in its final form as of February 2009. Because the December 2008 BiOp for the delta smelt from the United States Fish and Wildlife Service (USFWS) was in place as of February 2009, it made sense to also include the NMFS BiOp, which had been released in draft form prior to February 2009. The California Department of Water Resources (DWR) decided that it would have been anomalous to rely on the most current USFWS BiOp with respect to delta smelt issues, but to ignore the soon-to-be-adopted NFMS BiOp with respect to salmonid issues.

Even so, because of the importance of focusing on Existing Conditions, DWR as CEQA lead agency did not assume implementation of *all* aspects of either BiOp. In particular, DWR did not assume full implementation of a particular requirement of the delta smelt BiOp, known as the "Fall X2" salinity standard, which in certain water-year types can require large upstream reservoir releases in fall months of wet and above normal years to maintain the location of "X2" at approximately 74 or 81 river kilometers inland from the Golden Gate Bridge. As of spring 2011, when a lead agency technical team began a new set of complex computer model runs in support of this EIR/EIS, DWR determined that full implementation of the Fall X2 salinity standard as described in the 2008 USFWS BiOp was not certain to occur within a reasonable near-term timeframe because of a recent court decision and reasonably foreseeable near-term hydrological conditions. As of that date, the United States District Court has not yet ruled in litigation filed by various water users over the issue of whether the delta smelt BiOp had failed to sufficiently explain the basis for the specific location requirements of the Fall X2 action, and its implementation was uncertain in the foreseeable future. This uncertainty, together with CEQA's focus on Existing Conditions, led DWR to the decision to use a CEQA baseline without the implementation of the Fall X2 action. However, for the purposes of the NEPA comparison, which uses a different method for assessing environmental effects of the action alternatives, the Fall X2 action is included in the NEPA point of comparison as discussed below in the *No Action Alternatives* section.

- Changes in monitoring to support project operations.
- Re-initiation of consultation (ESA Section 7) and 2081(b) permit amendment (CESA) to address changes outside of existing authorizations.

Memorandum of Agreement

Commitments to adaptive management and collaborative science will be secured through a MOA between DWR, Reclamation, the public water agencies, CDFW, NMFS, and USFWS. Details of the collaborative science and adaptive management process, including adaptive management decision-making, an organizational structure for adaptive management decisions, and funding for collaborative science will be developed and incorporated through the MOA, as needed.

Possible Operational Scenarios

Under the real time operational decision-making process, as well as the adaptive management and monitoring program, both of which are described above, the RTO team will have flexibility for operations. The RTO team, in making operational decisions, will take into account operational constraints, such as coldwater pool management, instream flow, and temperature requirements. The extent to which real time adjustments that may be made to each parameter (e.g., OMR flow target) shall be limited by the criteria and/or ranges set out in the section describing Scenario H (Alternative 4A). Operations are flexible, so long as they are in compliance with existing and applicable permitting requirements and standards, as may be amended, and any other regulatory and contractual obligations. In addition, following the initial operations, the adaptive management and monitoring program could be used to make long-term changes in initial operations criteria, if appropriate, to address uncertainties about spring outflow for longfin smelt and fall outflow for delta smelt, among others.

For that reason, Appendix 5E, *Supplemental Modeling Requested by the State Water Resources Control Board Related to Increased Delta Outflows,* also presents a broader operational boundary analysis, as well as an additional operational scenario requested by the State Water Board that results in increased Delta outflow and decreased SWP/CVP exports (Modified Alternative 8). As shown in Appendix 5E, the operation of the future conveyance facility under a possible adaptive management range represented by Boundary 1 and Boundary 2 will be consistent with the impacts discussed for the range of alternatives considered in this document (see Appendix 5E, Section 5E.2, for additional information on these boundaries). Boundary 1 and Boundary 2 also encompass the full range of impacts found in the analysis prepared for H1 and H2(as well as H3 and H4). For modeling information on H1 and H2, please see Appendix 11G, *Supplemental Modeling Results at ELT for Alternative 4 at H1 and H2*.

3.7 Environmental Commitments

As part of the project planning and environmental assessment process, DWR will incorporate certain environmental commitments and BMPs into the proposed action alternatives to avoid or minimize potential impacts. These *environmental commitments* refer to design features, construction methods, and other BMPs that have been incorporated as part of the project description to preclude the occurrence of environmental effects that could arise without such commitments in place. These environmental commitments tend to be relatively standardized and are often already compulsory;

Appendix 5E
Supplemental Modeling Related to the State Water Resources Control Board

5E.1 Introduction and Purpose of the Supplemental Modeling

The State Water Resources Control Board (State Water Board) is expected to issue discretionary approvals considered a "project" under California Environmental Quality Act (CEQA), and therefore, the State Water Board is identified as a Responsible Agency for purposes of California Department of Water Resources (DWR's) CEQA document. DWR prepared the Bay Delta Conservation Plan (BDCP) Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS) in consideration of the State Water Board and other Responsible Agency approvals and specifically included Alternative 8 in the BDCP Draft EIR/EIS at the request of State Water Board staff. The 2015 Partially Recirculated Draft EIR/Supplemental Draft EIS (RDEIR/SDEIS) included, at the request of State Water Board staff, supplemental modeling at year 2025 (Early Long Term [ELT]), conducted to evaluate an operational scenario that provides higher Delta outflows than the Preferred Alternative (Alternative 4A), while including model assumptions that avoid impacts to fish and aquatic resources attributable to reductions in cold water pool storage and flow modifications under Alternative 8 and other higher outflow scenarios analyzed in the BDCP Draft EIR/EIS.

This appendix includes a revised and updated version of the State Water Board staff requested scenario that was presented in the RDEIR/SDEIS (referred to as Scenario 2 in this appendix) and also provides supplemental modeling and analysis of 2 additional scenarios, each at year 2025 (Early Long Term [ELT]) that were presented in the State Water Board water rights petition process (Boundary 1 and Boundary 2). Boundaries 1 and 2 were presented to the State Water Board during the water rights petition process as a means to represent a potential range of operations that could occur as a result of the proposed Adaptive Management Program, and the conditions of any approvals obtained as a result of the ongoing regulatory review of U.S. Fish and Wildlife Service, National Marine Fisheries Service, California Department of Fish and Wildlife, and State Water Board. The description and analysis included in this appendix for Boundaries 1 and 2 incorporates by reference the testimony presented to the State Water Board July 29 through September 27, 2016, for the California WaterFix change in point of diversion petition. The testimony exhibits on which this analysis relied are posted at:

http://cms.capitoltechsolutions.com/ClientData/CaliforniaWaterFix/uploads/CWF_ChangePetition_TOC_V212.pdf

The transcripts on which this analysis relied are posted at:

http://cms.capitoltechsolutions.com/ClientData/CaliforniaWaterFix/uploads/CWF_ChangePetitionHearingTranscript.pdf

Chapter 8 – Water Quality	Existing Condition	Alternative																	
		No Action	1A	1B	1C	2A	2B	2C	3	4	5	6A	6B	6C	7	8	9	4A	2D	5A
WQ-5: Bromide (CM1) - Percent increase in long-term average concentration at Barker Slough	–	–2%	38/43%	38/43%	38/43%	22/26%	22/26%	22/26%	34/38%	40/44%	23/27%	19/22%	19/22%	19/22%	-2/1%	4/8%	19/23%	-2/2%	-2/2%	-4/0%
		LTS	S/A	S/A	S/A	S/A	S/A	S/A	S/A	S/A	S/A	S/A	S/A	S/A	S/A[a]	S/A[a]	S/A	LTS/NA	LTS/NA	LTS/NA
WQ-7: Chloride - Percent of years when 150 mg/L water quality objective exceeded at CCPP#1[b]	7%	0	13%	13%	13%	13%	13%	13%	7%	7%	13%	13%	13%	13%	20%	13%	13%	0%	0%	0%
		S	S/A	S/A	S/A	S/A	S/A	S/A	S/A	S/A	S/A	S/A	S/A	S/A	S/A	S/A	S/A	LTS/NA	LTS/NA	LTS/NA
WQ-11: EC- Percent of days Emmaton objective would be exceeded	6%	14	31%	31%	31%	26%	26%	26%	30%	27-29%[c]	25%	32%	32%	32%	19%	22%	18%	16%[c]	7%[c]	10%[c]
		S	S/A	S/A	S/A	S/A	S/A	S/A	S/A	S/A	S/A	S/A	S/A	S/A	S/A	S/A	S/A	LTS/NA	LTS/NA	LTS/NA
WQ-13: Mercury (CM1) - Maximum percent increase in fish tissue concentrations at Delta locations	6%	6%	8/10%	8/10%	8/10%	13/11%	13/11%	13/11%	6/8%	15/12%	8/7%	64/58%	64/58%	64/58%	45/39%	46/41%	66/59%	8/7%	10/9%	5/3%
		LTS	LTS/NA	LTS/NA	LTS/NA	LTS/NA	LTS/NA	LTS/NA	LTS/NA	LTS/NA	LTS/NA	S/A	S/A	S/A	S/A	S/A	S/A	LTS/NA	LTS/NA	LTS/NA

Notes

[a] While the long-term average increases in bromide would be low, the drought period increases would be 34% for Alternative 7 and 50% for Alternative 8, relative to Existing Conditions and the No Action Alternative. These increases in the drought period were considered significant/adverse.

[b] Water quality degradation as measured by use of available assimilative capacity also played a significant role in determining effects by alternative, and degradation varied by alternative.

[c] Alternative 4 does not include a change in compliance location from Emmaton to Threemile Slough, but the modeling used to evaluate the alternative did include the change. Thus, although the percent of days the Emmaton objective was exceeded is high, it is expected that under the alternative it would be similar to the No Action.

Key

Level of significance or effect **before** mitigation
(Quantity of impact: number of sites, structures, acres, etc. affected)

Increasing level of significance →

Bromide - Percent increase (%)	<0	1 - 20	21 - 40	>40
Chloride - % of years objective exceeded (%)	0	1-12	13-19	>20
EC - percent of days objective exceeded (%)	<10	11 - 20	20 - 30	>30
Mercury (CM1) - Percent increase (%)	<10	10 - 20	21 - 50	>50
Mercury (CM2-CM22) - restoration acres	0	1 - 100	25,000	65,000
Organic Carbon (CM1) - mg/L	<0.1	0.1 - 0.5	0.6 - 1.0	>1.0
Organic Carbon (CM2-CM21) - restoration acres	0	1 - 100	25,000	65,000
Selenium - Exceedance Quotient	0.87	0.88 - 0.93	0.94 - 0.99	>1.0
Microcystis - relative rank	1	2	3	4

Level of significance or effect **after** mitigation
(CEQA Finding / NEPA Finding)

CEQA Finding		NEPA Finding	
NI	No Impact	B	Beneficial
LTS	Less than significant	NE	No Effect
S	Significant	NA	Not Adverse
SU	Significant and unavoidable	A	Adverse

n/a not applicable
> greater than
< less than
≈ about equal to

Continued on Figure 8-0b

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Figure 8-0a
Comparison of Impacts on Water Quality

STKN-026

Chapter 8 – Water Quality (continued)	Alternative																		
	Existing Condition	No Action	1A	1B	1C	2A	2B	2C	3	4	5	6A	6B	6C	7	8	9	4A	2D	5A
WQ-14: Mercury(CM2-CM21) - Amount (acres) of new tidal habitat restoration that could contribute additional methylmercury	0	0	65,000	65,000	65,000	65,000	65,000	65,000	65,000	65,000	25,000	65,000	65,000	65,000	65,000	65,000	65,000	59	65	55
		-- [d]	S/A	S/A	S/A	S/A	S/A	S/A	S/A	S/A	S/A	S/A	S/A	S/A	S/A	S/A	S/A	S/A	S/A	S/A
WQ-17: Organic Carbon (CM1) – Maximum increase in long-term average DOC (mg/L) at interior Delta locations	--	<0.1	0.3	0.3	0.3	0.4	0.4	0.4	0.2	0.4	0.2	1.2	1.2	1.2	0.8	0.8	0.7	0.2	0.2	0.1
		LTS	LTS/NA	LTS/NA	LTS/NA	LTS/NA	LTS/NA	LTS/NA	LTS/NA	LTS/NA	LTS/NA	S/A	S/A	S/A	S/A	S/A	S/A	LTS/NA	LTS/NA	LTS/NA
WQ-18: Organic Carbon (CM2-CM21) - Amount (acres) of new tidal habitat restoration that could contribute additional DOC	0	0	65,000	65,000	65,000	65,000	65,000	65,000	65,000	65,000	25,000	65,000	65,000	65,000	65,000	65,000	65,000	59	65	55
		-- [d]	S/A	S/A	S/A	S/A	S/A	S/A	S/A	S/A	S/A	S/A	S/A	S/A	S/A	S/A	S/A	LTS/NA	LTS/NA	LTS/NA
WQ-25: Selenium (CM1) - High threshold exceedance quotient for whole body sturgeon (concentration divided by threshold) during drought period	.87	0.87	0.89	0.89	0.89	0.92	0.92	0.92	0.89	0.93	0.89	1.1	1.1	1.1	1.1	1.1	1.2	0.91	0.89	0.90
		LTS	LTS/NA	LTS/NA	LTS/NA	LTS/NA	LTS/NA	LTS/NA	LTS/NA	LTS/NA	LTS/NA	S/A	S/A	S/A	S/A	S/A	S/A	LTS/NA	LTS/NA	LTS/NA
WQ-32 and 33: Microcystis (CM1-CM21) - potential for increased production in Delta [e]	--	2	4	4	4	4	4	4	4	4	3	4	4	4	4	4	4	2	2	2
		5	S/A	S/A	S/A	S/A	S/A	S/A	S/A	S/A	S/A	S/A	S/A	S/A	S/A	S/A	S/A	LTS/NA	LTS/NA	LTS/NA

Notes

[d] CM2-CM21 are not a component of Existing Conditions or the No Action Alternative, thus, no impact call was made for this effect in the EIR/EIS.

[e] The Microcystis was qualitative. Thus, the severity of the impact was established as a rank from 1 to 4, with the rankings based on the alternative-specific factors that would contribute to increased Microcystis production, including restoration area, diversions of Sacramento River water at the north intakes, and net Delta outflow.

Key

Level of significance or effect **before** mitigation
(Quantity of impact: number of sites, structures, acres, etc. affected)

Increasing level of significance →

Bromide - Percent increase (%)	<0	1 - 20	21 - 40	>40
Chloride - % of years objective exceeded (%)	0	1-12	13-19	>20
EC - percent of days objective exceeded (%)	<10	11 - 20	20 - 30	>30
Mercury (CM1) - Percent increase (%)	<10	10 - 20	21 - 50	>50
Mercury (CM2-CM22) - restoration acres	0	1 - 100	25,000	65,000
Organic Carbon (CM1) - mg/L	<0.1	0.1 - 0.5	0.6 - 1.0	>1.0
Organic Carbon (CM2-CM21) - restoration acres	0	1 - 100	25,000	65,000
Selenium - Exceedance Quotient	0.87	0.88 - 0.93	0.94 - 0.99	>1.0
Microcystis - relative rank	1	2	3	4

Level of significance or effect **after** mitigation
(CEQA Finding / NEPA Finding)

CEQA Finding		NEPA Finding	
NI	No Impact	B	Beneficial
LTS	Less than significant	NE	No Effect
S	Significant	NA	Not Adverse
SU	Significant and unavoidable	A	Adverse

n/a not applicable
> greater than
< less than
≈ about equal to

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Figure 8-0b
Comparison of Impacts on Water Quality (continued)

Potential Impact	Alternatives	Impact Conclusions Before Mitigation	Proposed Mitigation (CEQA and NEPA)	Impact Conclusion After Mitigation	
		CEQA		CEQA	NEPA
WQ-4: Effects on boron concentrations resulting from implementation of CM2–CM21	NAA (LLT), NAA (ELT), 1A, 1B, 1C, 2A, 2B, 2C, 3, 4, 5, 6A, 6B, 6C, 7, 8, 9, 2D, 4A 5A	LTS		LTS	NA
WQ-5: Effects on bromide concentrations resulting from facilities operations and maintenance (CM1)	NAA (LLT), NAA (ELT), 2D, 4A, 5A	LTS		LTS	NA
	1A, 1B, 1C, 2A, 2B, 2C, 3, 4, 5, 6A, 6B, 6C, 7, 8, 9	S	WQ-5: Avoid, minimize, or offset, as feasible, adverse water quality conditions; site and design restoration sites to reduce bromide increases in Barker Slough	SU	A
WQ-6: Effects on bromide concentrations resulting from implementation of CM2–CM21	NAA (LLT), NAA (ELT), 1A, 1B, 1C, 2A, 2B, 2C, 3, 4, 5, 6A, 6B, 6C, 7, 8, 9, 2D, 4A, 5A	LTS		LTS	NA
WQ-7: Effects on chloride concentrations resulting from facilities operations and maintenance (CM1)	NAA (LLT), NAA (ELT)	S		S	NA
	1A, 1B, 1C, 2A, 2B, 2C, 3, 4, 5, 6A, 6B, 6C, 7, 8, 9	S	WQ-7: Conduct additional evaluation and modeling of increased chloride levels and develop and implement phased mitigation actions WQ-7a: Conduct additional evaluation of operational ability to reduce or eliminate water quality degradation in western Delta incorporating site-specific restoration areas and updated climate change/sea level rise projections, if available WQ-7b: Site and design restoration sites to reduce or eliminate water quality degradation in the western Delta WQ-7c: Consult with Delta water purveyors to identify means to avoid, minimize, or offset for reduced seasonal availability of water that meets applicable water quality objectives WQ-7d: Site and design restoration sites and consult with CDFW/USFWS, and Suisun Marsh stakeholders to identify potential actions to avoid or reduce chloride concentration increases in the Marsh	SU	A
	4A	LTS	WQ-7e: Implement Terms of the Contra Costa Water District Settlement Agreement	LTS	NA
	2D, 5A	LTS		LTS	NA
WQ-8: Effects on chloride concentrations resulting from implementation of CM2–CM21	NAA (LLT), NAA (ELT), 1A, 1B, 1C, 2A, 2B, 2C, 3, 4, 5, 6A, 6B, 6C, 7, 8, 9, 2D, 4A, 5A	LTS		LTS	NA
WQ-9: Effects on dissolved oxygen resulting from facilities operations and maintenance (CM1)	NAA (LLT), NAA (ELT), 1A, 1B, 1C, 2A, 2B, 2C, 3, 4, 5, 6A, 6B, 6C, 7, 8, 9, 2D, 4A, 5A	LTS		LTS	NA
WQ-10: Effects on dissolved oxygen resulting from implementation of CM2–CM21	NAA (LLT), NAA (ELT), 1A, 1B, 1C, 2A, 2B, 2C, 3, 4, 5, 6A, 6B, 6C, 7, 8, 9, 2D, 4A, 5A	LTS		LTS	NA

Level of Significance/Determination of Effects:

CEQA

SU = significant and unavoidable (any mitigation not sufficient to render impact less than significant).
S = significant.
LTS = less than significant.
NI = no impact.
B = beneficial.
ND = no determination.

NEPA

A = adverse.
NA = not adverse.
NE = no effect.
B = beneficial.
ND = no determination.

variations can also be attributed to phytoplankton, zooplankton and other biological material in the water.

The TSS and turbidity assessments were conducted in a qualitative manner based on anticipated changes in these factors.

Microcystis

Microcystis has an annual life cycle characterized by two phases. The first is a benthic phase, during which cysts overwinter in the sediment. In the second planktonic phase, during summer and fall, *Microcystis* enters the water column and begins to grow. When environmental conditions, such as sufficiently warm water temperatures, trigger *Microcystis* recruitment from the sediment, the organism is resuspended into the water column through a combination of active and passive processes (Verspagen et al. 2004; Mission and Latour 2012). In the Delta, there are five primary environmental factors that trigger the emergence and subsequent growth of *Microcystis*.

1. Warm water temperatures (>19°C) (Lehman et al. 2013).
2. Nutrient availability (e.g., nitrogen and phosphorus) (Smith 1986; Paerl 2008 as cited in Davis et al. 2009).
3. Water column irradiance and clarity (surface irradiance >100 Watts per square meter per second and total suspended solid concentration <50mg/L (Lehman et al. 2013).
4. Flows and long residence times (Lehman et al. 2013).

Microcystis blooms typically develop over a period of several weeks after cells emerge from the benthic state (Marmen et al. 2016). Because environmental conditions and benthic recruitment drive *Microcystis* formation within the water column, it is common for many *Microcystis* cells to enter the water column at the same time. Once in the water column, and when environmental conditions are favorable, *Microcystis* rapidly multiplies. One study found the doubling time of *Microcystis aeruginosa* strains ranged from 1.5 to 5.2 days, with an average doubling time of 2.8 days (Wilson et al. 2006). This fast growth rate allows cells to form colonies which come together to form a "scum" layer at the water surface. In the Delta, scums are primarily composed of the colonial form of *Microcystis*, but single cells are also present (Baxa et al. 2010).

Like many cyanobacteria species, *Microcystis* possess specialized intracellular gas vesicles that enable the organism to regulate its buoyancy (Reynolds 1981 as cited in Paerl et al. 2014). This buoyancy allows *Microcystis* to take advantage of near surface areas with optimal growth conditions (e.g., light). The collection of cells at the surface, primarily in calm waters, allows *Microcystis* to sustain a competitive advantage over other phytoplankton species by optimizing their photosynthetic needs while shading out other algal species, which they compete with for nutrients and light (Huisman et al. 2004).

Wind and tides can enhance the aggregation of *Microcystis* cells in slow moving waters (Baxa et al. 2010), but in faster moving, turbulent waters, the ability of *Microcystis* to maintain its positive buoyancy is reduced (Visser et al. 1996). Therefore, high flow rates make it difficult for *Microcystis* to collect and form dense colonies at the water surface. Turbulence effects metabolic processes and cell division (Koch 1993; Thomas et al. 1995 as cited in Li et al. 2013) and thus can be a negative growth factor (Paerl et al. 2001 and articles cited within). Turbulent water mixes all algae throughout the photic zone of the water column and reduces light through turbidity which allows faster growing chlorophytes (green algae) and diatoms to outcompete the slower growing

cyanobacteria, including *Microcystis* (Wetzel et al. 2001; Huisman et al. 2004; Li et al. 2013). Although the amount of flow required to disrupt a *Microcystis* bloom varies by system, in the Zhongxin Lake system China, flow velocities of 0.5–1.0 feet/second shifted the dominant phytoplankton species from cyanobacteria to green algae and diatoms (Li et al. 2013).

As described under Impact WQ-29 (Effects on TSS and Turbidity), changes in TSS and turbidity levels within the Delta under the project alternatives could not be quantified, but are expected to be similar under the project alternatives to Existing Conditions and the No Action Alternative. Minimal changes in water clarity would result in minimal changes in light availability for *Microcystis* under the project alternatives. As such, the project alternatives' influence on *Microcystis* production in the Delta, as influenced by the project alternatives' effects on Delta water clarity, is considered to be negligible.

Regarding nutrients the maintenance of *Microcystis* blooms in the Delta requires the availability of the nitrogen and phosphorus. However, the body of science produced by scientists studying *Microcystis* blooms in the Delta and elsewhere does not indicate that the specific levels of these nutrients, or their ratio, currently control the seasonal or inter-annual variation in the bloom. A large fraction of ammonia in the Sacramento River will be removed due to planned upgrades to the Sacramento Regional County Sanitation District's SRWTP, which will result in >95% removal of ammonia from the effluent discharge from this facility. Following the SRWTP upgrades, levels of ammonia in Sacramento River are expected to be similar to background ammonia concentrations in the San Joaquin River and San Francisco Bay (see Section 8.3.3.1, Impact WQ-1). The response of *Microcystis* production in the Delta to the substantial reduction in river ammonia levels (from removing ammonia from the SRWTP discharge) is unknown because nitrate and phosphorus levels in the Delta will remain well above thresholds that would limit *Microcystis* blooms.

Nutrient ratios in excess of the Redfield N:P ratio of 16 have also been hypothesized to favor *Microcystis* growth in the Delta (Glibert et al. 2011). However, considerable doubt has been cast on this hypothesis because median N:P molar ratios in the Delta during peak bloom periods are usually near or a little lower than the Redfield ratio of 16 needed for optimum phytoplankton growth, and when ammonia is considered the sole N source, the N:P ratio drops substantially to a median of 1.31:1 (Lehman et al. 2013). Based on this information, there is no evidence as to what type of effect small changes in nutrient concentrations and ratios would have on *Microcystis* blooms, given that such blooms are largely influenced by a host of other physical factors, including water temperature and water residence time within channels.

Based on the above, water clarity and nutrient effects on *Microcystis* were determined to not have substantial effects on *Microcystis* abundance under the project alternatives, relative to Existing Conditions and the No Action Alternative. A qualitative evaluation was performed to determine if the action alternatives would result in an increase in frequency, magnitude, and geographic extent of *Microcystis* blooms in the Delta based on the following two additional abiotic factors that may affect *Microcystis*: 1) changes to water operations and creation of tidal and floodplain restoration areas that change water residence times within Delta channels, and 2) increases in Delta water temperatures.

The methodology used to determine residence time for Alternatives 1A, 1B, 1C, 2A, 2B, 2C, 3, 4, 5, 6A, 6B, 6C, 7, 8, and 9 is described in BDCP Appendix 5.C, Section 5C.4.4.7, *Residence Time*. Briefly, residence time in different subregions of the Plan Area was assessed using the results of the DSM2 Particle Tracking Model for multiple neutrally buoyant particle release locations. Residence time

was defined as the time at which 50% of particles from a given release location exited the Plan Area (either by movement downstream past Martinez or through entrainment at the south Delta export facilities, north Delta diversion, North Bay Aqueduct, or agricultural diversions in the Delta). The data were reduced into mean residence time by subregion and season. The data do not represent the length of time that water in the various subregions spends in the Delta in total, but do provide a useful parameter with which to compare generally how long algae would have to grow in the various subregions of the Delta. Table 8-60a shows the residence time results that are used in the *Microcystis* assessments. Results for summer and fall are most relevant for the *Microcystis* assessment, but all seasons are presented for completeness.

Table 8-60a. Average Residence Time for Subregions of the Plan Area by Season and Alternative

		Average Residence Time (days)										
Subregion	Season	Ex Cond.	No Act.	Alt 1	Alt 2	Alt 3	Alt 4 Scn H3	Alt 5	Alt 6	Alt 7	Alt 8	Alt 9
North Delta	Summer	33	38	43	38	41	39	41	43	40	46	40
	Fall	49	50	61	56	60	57	55	55	57	58	55
	Winter	36	37	40	40	40	39	41	37	37	37	40
	Spring	30	33	37	35	36	35	36	34	34	29	35
	Overall	35	38	43	41	43	41	41	40	40	40	41
Cache Slough	Summer	18	21	46	40	45	39	39	49	46	59	46
	Fall	46	46	44	39	43	40	39	39	45	56	39
	Winter	29	31	33	32	33	32	33	28	29	27	31
	Spring	22	24	33	33	33	33	33	31	30	33	31
	Overall	27	29	38	36	38	35	36	36	36	42	36
West Delta	Summer	22	24	32	28	30	28	29	40	27	33	28
	Fall	25	27	34	30	33	30	30	30	31	32	27
	Winter	18	20	21	21	21	21	21	19	19	19	19
	Spring	18	20	24	22	24	22	23	20	20	17	20
	Overall	20	22	27	25	26	25	25	27	23	24	23
East Delta	Summer	22	26	40	34	35	34	31	76	32	48	21
	Fall	15	35	33	47	32	48	48	58	55	55	21
	Winter	28	32	40	42	40	42	40	50	51	50	26
	Spring	42	47	57	54	59	54	56	61	57	54	35
	Overall	29	36	45	45	44	45	44	61	49	52	27
South Delta	Summer	8	10	16	17	14	16	11	70	23	33	35
	Fall	5	11	8	42	8	43	34	79	53	52	33
	Winter	10	11	19	19	14	16	15	59	57	56	28
	Spring	25	26	24	29	20	28	27	65	60	58	31
	Overall	13	16	18	26	15	25	21	67	49	50	32
Suisun Marsh	Summer	51	58	38	35	37	35	36	37	36	39	42
	Fall	17	19	39	34	38	34	33	32	34	34	38
	Winter	9	9	28	28	29	27	29	24	24	24	32
	Spring	45	51	32	31	31	30	30	29	28	25	33
	Overall	33	37	33	32	33	31	32	30	30	30	36

was defined as the time at which 50% of particles from a given release location exited the Plan Area (either by movement downstream past Martinez or through entrainment at the south Delta export facilities, north Delta diversion, North Bay Aqueduct, or agricultural diversions in the Delta). The data were reduced into mean residence time by subregion and season. The data do not represent the length of time that water in the various subregions spends in the Delta in total, but do provide a useful parameter with which to compare generally how long algae would have to grow in the various subregions of the Delta. Table 8-60a shows the residence time results that are used in the *Microcystis* assessments. Results for summer and fall are most relevant for the *Microcystis* assessment, but all seasons are presented for completeness.

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North Delta	Summer	33	38	43	38	41	39	41	43	40	46	40
	Fall	49	50	61	56	60	57	55	55	57	58	55
	Winter	36	37	40	40	40	39	41	37	37	37	40
	Spring	30	33	37	35	36	35	36	34	34	29	35
	Overall	35	38	43	41	43	41	41	40	40	40	41
Cache Slough	Summer	18	21	46	40	45	39	39	49	46	59	46
	Fall	46	46	44	39	43	40	39	39	45	56	39
	Winter	29	31	33	32	33	32	33	28	29	27	31
	Spring	22	24	33	33	33	33	33	31	30	33	31
	Overall	27	29	38	36	38	35	36	36	36	42	36
West Delta	Summer	22	24	32	28	30	28	29	40	27	33	28
	Fall	25	27	34	30	33	30	30	30	31	32	27
	Winter	18	20	21	21	21	21	21	19	19	19	19
	Spring	18	20	24	22	24	22	23	20	20	17	20
	Overall	20	22	27	25	26	25	25	27	23	24	23
East Delta	Summer	22	26	40	34	35	34	31	76	32	48	21
	Fall	15	35	33	47	32	48	48	58	55	55	21
	Winter	28	32	40	42	40	42	40	50	51	50	26
	Spring	42	47	57	54	59	54	56	61	57	54	35
	Overall	29	36	45	45	44	45	44	61	49	52	27
South Delta	Summer	8	10	16	17	14	16	11	70	23	33	35
	Fall	5	11	8	42	8	43	34	79	53	52	33
	Winter	10	11	19	19	14	16	15	59	57	56	28
	Spring	25	26	24	29	20	28	27	65	60	58	31
	Overall	13	16	18	26	15	25	21	67	49	50	32
Suisun Marsh	Summer	51	58	38	35	37	35	36	37	36	39	42
	Fall	17	19	39	34	38	34	33	32	34	34	38
	Winter	9	9	28	28	29	27	29	24	24	24	32
	Spring	45	51	32	31	31	30	30	29	28	25	33
	Overall	33	37	33	32	33	31	32	30	30	30	36

current conditions will continue and that *Microcystis* blooms will not increase here (ICF International 2016).

Based on *Microcystis* life history strategy to outcompete other algal species and the inhibitory effect of flow and turbulence on its ability to do so, maximum daily channel velocities (which creates channel turbidity and turbulence) also were assessed using DSM2 velocity output for a number of locations throughout the Delta (Appendix 8P). The evaluation of flow velocities shows little to no effects on peak daily velocities under Alternative 4A compared to the No Action Alternative at each location assessed. This indicates that areas of the Delta that are currently turbid will remain turbid and vertical mixing of the water column will be similar under Alternative 4A and the No Action Alternative. As stated in Section 8.3.1.7, *Microcystis* cannot effectively retain its buoyancy or outcompete other faster growing phytoplankton in turbid, turbulent waters. Therefore, based on Alternative 4A maintaining similar to equivalent peak daily flow velocities in Delta channels (and turbidity and turbulence conditions), Alternative 4A would not be expected to substantially increase the frequency or geographic extent of Microcystis blooms in the Delta, relative to what would occur under the No Action Alternative.

Changes in flow paths of water through the Delta and change in operation of the south Delta pumps that would occur due to facilities operations and maintenance of Alternative 4A could result in localized increases in residence time in various Delta sub-regions and decreases in residence time in other areas. In addition to the effects of operations and maintenance of Alternative 4A, increases in water residence times are expected occur due to separate factors and actions concurrent with the alternative, including habitat restoration (8,000 acres of tidal habitat and enhancements in the Yolo Bypass) and sea level rise due to climate change.

Residence times in 19 Delta sub-regions during the *Microcystis* bloom season of July through October was modeled for the Biological Assessment for the California WaterFix (ICF International 2016). The Proposed Action modeled in the Biological Assessment is Alternative 4A. Modeling results show varying levels of change in residence time, depending on sub-region, month and water year type (Tables 6.6-5 through 6.6-25, ICF International 2016). DSM2 PTM output indicates residence times may increase in parts of the southern and central Delta. Because there is no published analysis of the relationship between *Microcystis* occurrence and residence time, there is uncertainty on how increased residence times may affect *Microcystis* occurrences (ICF International 2016). In some areas of the Delta currently affected by *Microcystis* blooms, decreasing median residence times in some months (decreases from 0.1 – 3.8 days) has potential to lower the magnitude and duration of *Microcystis* blooms. However, in other areas of the Delta that experience *Microcystis* blooms, longer median residence times in some months (0.1 - 16.5 days) has potential to increase the magnitude and duration of *Microcystis* blooms.

The changes in residence time are driven by a number of factors accounted for in the modeling, including diversion of Sacramento River water at the proposed north Delta intake facilities, which does not account for the flexibility of operations of the north and south Delta intakes or real-time management of reservoir releases. To ensure project operations do not create increased *Microcystis* blooms in the Delta, water flow through Delta channels would be managed through real-time operations, particularly the balancing of the north and south Delta diversions. By operating the south Delta pumps more frequently during periods conducive to increased *Microcystis* blooms, residence times would be substantially reduced from those modeled for Alternative 4A. Reducing residence times would decrease the potential for blooms to develop, and thus decrease potential microcystin increases due to project operations. As such, effects of Alternative 4A on *Microcystis*

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		which is critical for RD 551. The BDCP proponents must address this issue in the RDEIR/SDEIS and then recirculate the document for public review.	storage. DWR will consult directly with landowners to refine the storage area footprint to further minimize impacts to surrounding land uses, including agricultural operations. • Where feasible, dredged material will be stored on higher elevation land that is set back from surface water bodies a minimum of 150 feet. Upland disposal will help ensure that the material will not be in direct contact with surface water prior to its draining, characterization, and potential treatment. Based upon these factors in the project description, it was determined that the RTM would not be placed within a floodway or flood channel unless the material was specifically being used for levee or habitat restoration maintenance which would require subsequent engineering and environmental analyses. For additional information regarding RTM, please see Master Response 12.
2496	1	The City of Stockton is greatly concerned that the Project will have significant impacts that would adversely affect the City of Stockton and its residents. The City expressed its concerns with the BDCP in its July 29, 2014 comments on the Draft EIR/EIS. Those comments identified numerous problems with the BDCP and DEIR/DEIS, which failed to adequately assess or mitigate the BDCP's impacts to the City's water supply and operations or the Delta ecosystem, among other concerns. Chief among these problems was the failure to recognize the City as a major diverter of water for municipal and industrial uses whose supply could be at risk by the BDCP. To the City's surprise and dismay, none of the problems identified in our July 29, 2014 comments were addressed by the changes to the Project or the revised environmental documents. By altering flows and water quality in the Delta, the California Water Fix Project, like the BDCP, threatens to have significant impacts that would adversely affect the City and its residents. The DEIR/DEIS contained no analysis of potential changes to water quality at the location of the City's drinking water intake on the San Joaquin River. Despite the City's comments, the RDEIR/SDEIS failed to incorporate, or address any of our concerns regarding potential water quality impacts at our intake. As a result, the City remains unable to understand the California Water Fix Project impacts on the issues of greatest concern to our residents.	Public comments submitted during the official public comment period and the previous comment period for the 2013 Public Draft will be made available to the public upon the release of the Final EIR/EIS. The Final EIR/EIS will include all comments received during the official comment period and responses to substantive comments. For more information about water quality analysis, please see Master Response 14. For more details about the adequacy of operational criteria, please also see Master Response 28.
2496	2	The RDEIR/SDEIS fails to address the City's prior comments on the effects of the proposed north Delta diversions & conveyance. The City of Stockton provided extensive comments on the DEIR/DEIS. None of the concerns raised in these comments was addressed in the supplemental or revised analyses included in the RDEIR/SDEIS, including the new evaluation of Alternative 4A and Alternatives 2D and 5A. As noted, among the City's chief concerns with the BDCP was the potential for the North Delta diversion to adversely affect water quality and the City's water supply. In particular the City objected to the DEIR/DEIS's failure to evaluate water quality and flow changes at the location of the City's drinking water intake. The City also raised concerns about impacts to agricultural resources, groundwater, air quality, roadways and traffic, as well as socioeconomic impacts. These issues remain unaddressed in the RDEIR/SDEIS. Because no changes were made to the Project or RDEIR/SDEIS that would address the City's comments and concerns, to the extent new alternatives, including Alternative 4A, are similar to the previously proposed BDCP CM1 , the City's prior comments apply to the California Water Fix Project and RDEIR/SDEIS, and the City reasserts its prior comments here and incorporates them by reference as comments on the RDEIR/SDEIS and California Water Fix Project alternatives.	Public comments submitted during the official public comment period and the previous comment period for the 2013 Public Draft will be made available to the public upon the release of the Final EIR/EIS. The Final EIR/EIS will include all comments received during the official comment period and responses to substantive comments. For more information about water quality analysis, please see Master Response 14. For more details about the adequacy of operational criteria, please also see Master Response 28.
2496	3	The RDEIR/SDEIS repeats and compounds the problems of the DEIR/DEIS. The water quality impact analysis provided for Alternative 4A fails to answer or address any of the questions	The assessment locations for the water quality Impacts analysis in Chapter 8, Water Quality, were selected within key portions of the Delta, including the eastern Delta where the City's intake is located. Given the

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		or concerns the City of Stockton raised in its comments on the original project proposal. There is no discussion of water quality effects at the City's intake. Moreover, the analysis of impacts at the locations that were included is hopelessly vague, convoluted and, ultimately, uninformative. The analysis is made even more unintelligible and factually suspect by the RDEIR/SDEIS's reliance on the flawed modeling methodology of the DEIR/DEIS. Rather than conduct a comprehensive analysis of the fundamental project changes in the California Water Fix Project, the RDEIR/SDEIS attempts to bootstrap an analysis of California Water Fix impacts on to modeling that was unique to the abandoned BDCP. The authors thus spend considerable time explaining why the model results are not necessarily accurate, or predictive of actual Project impacts, with the result that the public is asked to take on faith the RDEIR/SDEIS's conclusion of no significant impacts.	purposes of the assessment, the effects of alternatives at the locations assessed are considered representative of the effects of the alternatives in various portions of the Delta as a whole. Thus, although different locations can vary in their instantaneous water quality, effects of the project on water quality at locations assessed are considered representative of the degree and direction of water quality changes at other locations. Four interior Delta locations were assessed, including one in the eastern Delta at Buckley Cove, which provides information regarding the direction of water quality changes in this portion of the Delta. Also, please refer to Master Response 30regarding the assumptions used in the modeling to support the water quality assessment.
2496	4	An example is the discussion of electrical conductivity (EC) impacts for Alternative 4A on pages 4.3-24 through 4.3-26. (footnote 1: The problems with the RDEIR/SDEIS EC analysis are representative of the analysis in other water quality areas of key concern to the City, including bromide, chloride, organic carbon, nitrate and pesticides.) The section starts by attempting to explain the methodology used to estimate electrical conductivity impacts and justify the lead agencies' decision not to model the effects of the Alternative 4A changes, which eliminate habitat restoration actions that affect Delta hydrodynamics, a fundamental factor in the analysis. The result of these shortcuts and omissions is that "the quantitative modeling results presented in this assessment is not entirely predictive of actual effects under Alternative 4A, and the results should be interpreted with caution .... In this assessment the modeling results are described and then in most cases are qualified in light of findings from sensitivity analyses." (p 4.3.4-23.)	Please see Master Response 30 regarding the modeling approach used for the RDEIR/SDEIS and updated for the Final EIR/EIS.
2496	5	Of concern to the City of Stockton regarding adverse effects to the water quality is the failure of the RDEIR/SDEIS to adequately consider the effects of modified in-Delta flow regimes and increased residence time changes associated with the proposed project. For example, it is commonly accepted that flow is a prime driver of the undesirable proliferation of cyanobacteria (e.g. Microcystis) in the Delta. The occurrence and magnitude of this undesirable species is associated with low velocities and increased residence times in the system. While the RDEIR/SDEIS includes new information regarding Microcystis and other harmful aquatic species, the document does not properly link the acknowledged project-related increases in residence times in the Delta to a worsening of the Microcystis problem. The RDEIR/SDEIS should be modified to acknowledge these impacts in the vicinity of the City's drinking water intake. The RDEIRISDEIS then states that model results show the Project will result in an increase in the number and frequency of exceedances of electrical conductivity (EC) water quality objectives. However, the RDEIR/SDEIS downplays the significance of these exceedances, offering vague and noncommittal assurances that "modeling results without restoration areas would be expected to show a lesser effect and are expected to be able to be addressed [in] real time operations, including real time management of the north Delta and south Delta intakes, as well as Head of Old River Barrier management." (pp. 4.3-25 through 4.3-26.) Not only does this statement fail to quantify the actual exceedances, or the degree of any "lesser effect," but the assurance that effects could be "addressed" is not tied to any definable or enforceable mitigation commitment. The RDEIR/SDEIS provides no information about how "real time management" will occur, what type and extent of water quality sampling will occur to verify project effects on EC, the specific actions that Project operators will take, including the time lapse between identification of an exceedance and changes to operations, and the corresponding time lapse between any change in operations resulting from "real time management" and	Regarding the Microcystis assessment and consideration of residence time changes, please see Master Response 14. Also see section 8.1.3.18, Microcystis, in Ch. 8 of the Final EIR/EIS. Also see Master Response 22, for more details about the standards governing the adequacy of mitigation measures. Please see Master Response 30 regarding the modeling approach used for the RDEIR/SDEIS and updated for the Final EIR/S. Please see Master Response 32, Adaptive Management and Monitoring.

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Adaptive management process requires defined management objectives and clearly identified sources of ecological uncertainty that respectively become the basis for, and barriers to, a desired resource management regime (Williams, 2010). Based on those objectives and the identification of uncertainty, resource managers develop hypotheses about the potential resource responses to management actions, and then manage the resource in a way that incorporates explicit assumptions about those expected outcomes for comparison with actual outcomes (Williams *et al.* 2009).

Adaptive management incrementally reduces uncertainty and management risks by improving understanding. The challenge then becomes how to use the flexibility provided by an adaptive management approach in a way that balances gaining knowledge to improve management in the future and achieving the best near-term outcome (Stankey and Allan 2009).

Time Scale of Adaptive Management Program/Implementation and Relationship of Adaptive Management to Real-Time Operations

Adaptive management of the SWP/CVP will consider the multiple different time-scales applicable to CVP/SWP actions. Adaptive management changes to SWP/CVP operations are expected to be implemented on an annual or longer (multi-year) basis.

Under the current BiOps and future operations under California WaterFix, a "real-time operations" (RTO) mechanism will allow for adjustment of water operations, within established conditions, to respond in real time to changing conditions for the purpose of maximizing opportunities to benefit covered fish species. The adaptive management and decision-making processes described here do not apply to these real-time operations because individual decisions have to be made too quickly. However, changing operational criteria in existing BiOps and California WaterFix authorizations through the adaptive management process may affect how real-time operations are implemented.

Evaluation of Effects of Adaptive Management

The outcome of adaptive management will vary based on the information developed as part of the research and implementation aspects of the adaptive management program. The full potential of adjustments made under the adaptive management program cannot be anticipated, and is speculative at this time. However, any adjustments made would require compliance with CEQA, NEPA, ESA, and/or CESA and would be evaluated as proposed for the need for any additional environmental compliance or permitting requirements beyond what is done for the California WaterFix at this time.

Collaborative Science

The program will provide guidance and recommendations on relevant science related to the operations of the CVP and SWP within the Delta to inform implementation of the existing BiOps for the coordinated operations of the SWP and CVP and the 2081b permit for the SWP facilities and operations, as well as for the new biological opinion and 2081b for this proposed project. The collaborative science effort will build on the progress being made by the existing Collaborative Science and Adaptive Management Program (CSAMP) that was established to make recommendations on the science needed to inform implementation of or potential changes to the existing BiOps for the SWP and CVP operations, and proposed alternative management actions. The CSAMP process and its Collaborative Adaptive Management Team (CAMT) rely on the Delta Science Program to coordinate independent peer review of both science proposals and products.

CEQA Conclusion: Demands for supplemental water supplies to offset declines in SWP and CVP allocations will increase, and demand for cross-Delta water transfers will increase, due to reductions in SWP and CVP water deliveries. The reductions in SWP and CVP water deliveries under the No Action Alternative as compared to Existing Conditions would be mainly due to a combination of effects of sea level rise and climate change, increased future upstream and in-Delta water demand or in-basin consumptive use (having priority over SWP and CVP rights) and implementation of Fall X2.

5.3.4.2 Alternative 4A—Dual Conveyance with Modified Pipeline/Tunnel and Intakes 2, 3, and 5 (9,000 cfs; Operational Scenario H)

Facilities construction under Alternative 4A would be identical to that described under Alternative 4. Alternative 4A water conveyance operations would be similar to the range of possible operations for the spring Delta outflow requirements that would occur under Alternative 4 H3 and Alternative 4 H4.

Model simulation results for Alternative 4A ELT are summarized in Tables 5-10 through 5-12. The effects of Alternative 4A at LLT were assessed qualitatively based on the results at ELT. As the LLT model simulations of the Alternative 4A and the No Action Alternative would only differ by climate change and sea level rise effects from their ELT counterparts and given that the climate change and sea level rise assumptions are consistent between the Alternative 4A and the No Action Alternative at both ELT and LLT, the incremental changes between the No Action Alternative and Alternative 4A at LLT are expected to be similar to the ELT.

Modeling for Alternative 4A was conducted for Operational Scenario H3+, a point that generally falls between Scenario H3 and H4 operations, as the initial conveyance facilities operational scenario. As specified in Chapter 3, *Description of Alternatives*, Section 3.6.4 the Delta outflow criteria under Scenario H for Alternative 4A would be determined by the Endangered Species Act and California Endangered Species Act Section 2081 permits, and operations to obtain such outflow would likely be between Scenarios H3 and H4. Modeling results for Scenarios H3 and H4 using the 2015 CALSIM II model are shown in Appendix 5E, *Supplemental Modeling Requested by the State Water Resources Control Board Related to Increased Delta Outflows*, Attachment 1. In addition, following the initial operations, the adaptive management and monitoring program could be used to make long-term changes in initial operations criteria to address uncertainties about spring outflow for longfin smelt and fall outflow for delta smelt, among other species.

Future conveyance facilities operational changes may also be made as a result of adaptive management to respond to advances in science and understanding of how operations affect species. Conveyance facilities would be operated under an adaptive management range represented by Boundary 1 and Boundary 2 (see Section 5E.2 of Appendix 5E for additional information on Boundary 1 and Boundary 2). Impacts as a result of operations within this range would be consistent with the impacts discussed for the alternatives considered in this EIR/EIS. As shown in Appendix 5F, water supply modeling results for H3+ are within the range of results for Scenarios H3 and H4, and are consistent with the impacts discussed in the Recirculated Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement. The following analysis of Alternative 4A impacts reflects modeling results of Operational Scenario H3+.

In the following impact analysis No Action Alternative and Alternative 4A refer to both at ELT and LLT, unless specified.

Bromide

Bromide concentrations at a particular location and time in the Delta are determined primarily by the sources of water to that location, at a given time. Hence, long-term average concentrations at a particular Delta location are determined primarily by the long-term average sources of water to that location, and the long-term average concentration of bromide in each of the major source waters to the location. The major source waters to any given Delta location are: (1) Sacramento River, (2) San Joaquin River, (3) Bay water, (4) eastside tributaries, and (5) agricultural return water.

Bromide is not routinely monitored in surface water samples collected north of the Delta, primarily due to the low concentration of bromide in this region. Data available for the American River suggests that bromide concentrations are <10 µg/L. Table 8-43 provides a summary of bromide concentrations in the primary source waters of the Delta, as well as information on the source of the data and summary statistics. Due to the quality and quantity of data available, as well as the conservative nature of the constituent, a quantitative assessment utilizing a mass-balance approach was employed in the assessment of alternatives. Additionally, results of a second modeling approach utilizing EC to chloride and chloride to bromide relationships were used to supplement the results of the mass-balance approach (see Section 8.3.1.3, *Plan Area*). Because bromide is a precursor to the formation of DBPs which represent a long-term risk to human health, and because the existing source water quality goal is based on a running annual average, the quantitative assessment focuses on the degree to which an alternative may result in change in long-term average bromide concentrations at various locations throughout the affected environment. For municipal intakes located in the Delta interior, assessment locations at Contra Costa Pumping Plant No.1 and Rock Slough are taken as representative of Contra Costa's intakes at Rock Slough, Old River and Victoria Canal, and the assessment location at Buckley Cove is taken as representative of the City of Stockton's intake on the San Joaquin River. Municipal intakes at Mallard Slough, City of Antioch, and the North Bay Aqueduct are represented by their respective assessment locations. For the purposes of this assessment, bromide concentrations for water transported into the SWP/CVP Export Service Areas are assessed based on concentrations at the primary SWP and CVP Delta export locations (i.e., Banks and Jones pumping plants).

As demonstrated in Table 8-43, achieving the CALFED goal of 50 µg/L bromide at drinking water intakes is challenged by the bromide concentrations in two main source waters to the Delta, the San Joaquin River and San Francisco Bay (seawater), where long-term average concentrations exceed this goal many fold. In establishing its source water goal for bromide, CALFED assumed more stringent DBP criteria for treated drinking water than are currently in place. Source water with bromide between 100 µg/L and 300 µg/L is believed sufficient to meet currently established drinking water criteria for DBPs, depending on the amount of *Giardia* inactivation required (California Urban Water Agencies 1998, ES2). This assessment of alternatives evaluates how each alternative would affect the frequency with which predicted future bromide concentrations would exceed 50 µg/L (based directly on the CALFED goal) and 100 µg/L (based on the lower limit of the range considered sufficient for meeting currently established drinking water criteria) on a long-term average basis at the assessment locations. Because, in many cases, existing bromide concentrations in Delta water bodies already exceed 50 µg/L, the focus of the assessment is on the frequency with which bromide would exceed 100 µg/L, as well as the change in long-term average bromide concentration.

EXHIBIT E

Exponent®

Technical Response to Petitioners' Rebuttal Testimony in the WaterFix Proceedings

STKN-048

Technical Comments on Petitioner's Rebuttal Testimony in the WaterFix Proceedings

STKN-048

Prepared for

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June 9, 2017

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Acronyms and Abbreviations

DICU	Delta Island Consumptive Use
DOC	dissolved organic carbon
EC	electrical conductivity
fps	feet per second
WY	water year
NAA	No Action Alternative
HAB	harmful algal bloom
FEIR/EIS	Final Environmental Impact Report/Environmental Impact Statement

Opinion 1: DWR's representation of hydrodynamics and velocity in the Delta misses key features of Delta flows and leads to unsupported conclusions regarding water quality impacts to the City of Stockton.

1.1: Channel velocities will not change appreciably in the future because channel velocity in the central Delta is strongly influenced by tidal forcing, and tidal forcing will not change as a result of the WaterFix project. DWR's analysis, which focuses on daily maximum flow velocity and "15-minute absolute velocity (regardless of direction)," ignores important hydrodynamic characteristics that impact water quality within the Delta.

Both rebuttal report DWR-652, which focuses on water quality at Stockton's intake, and rebuttal report DWR-653, which focuses on the potential for harmful algal blooms, include analyses of the velocity of flows in Delta channels. For example, "The analysis presented below focuses on how the CWF [WaterFix] would affect daily maximum velocity and 15-minute absolute velocity (regardless of direction) in channels of the Delta. Daily maximum velocity is assessed because the Delta channels are tidal and thus flows are slowed, and can reverse direction in most channels daily, on the tidal cycle. As such, mathematical daily average velocity may approach zero when flows on the tidal cycle move in opposite directions, and thus is not very useful for determining how channel velocity affects cyanobacteria. In such tidally influences [sic] channels, daily maximum velocity and 15-minute absolute velocity (regardless of direction) are the parameters that best characterize the degree of channel mixing that occurs daily."[1] As detailed below, DWR-652 and DWR-653 presented a simplified analysis of Delta hydrodynamics and channel velocities, presenting only cumulative probability diagrams based on daily maximum and 15-minute absolute velocities. DWR's simplified analysis failed to capture details of Delta hydrodynamics, most notably the "sloshing" nature of tidally-driven flows within the Delta that are important to understanding water quality within the Delta.

To illustrate this point, Exponent has prepared several figures. Figure 1 presents the channel velocities predicted by the DSM2 model at Stockton's intake for water year (WY) 1987, a dry water year.[2] Figure 1 presents the simulated velocities both as 15-minute model output and as

[1] DWR-653 at p. 13.

[2] See STKN-026 at pp. 8-9 for a discussion of water year classifications.

daily average (or net) velocity.[3] Figure 1 demonstrates that the flow at Stockton's intake reverses direction on a daily basis, with 15-minute velocities ranging from -1.64 feet per second (fps; upstream direction) to +1.81 fps (downstream direction). Thus, flow at Stockton's intake location "sloshes" back and forth twice daily as a result of tidal forcing. In contrast, daily average velocities are much lower, ranging from about -0.1 fps (upstream) to +0.25 fps (downstream). Thus, while instantaneous (15-minute) velocities can reach high levels, high velocities do not persist for long periods of time, and the net velocity, with tidal fluctuations removed, is much lower in this area of the Delta.

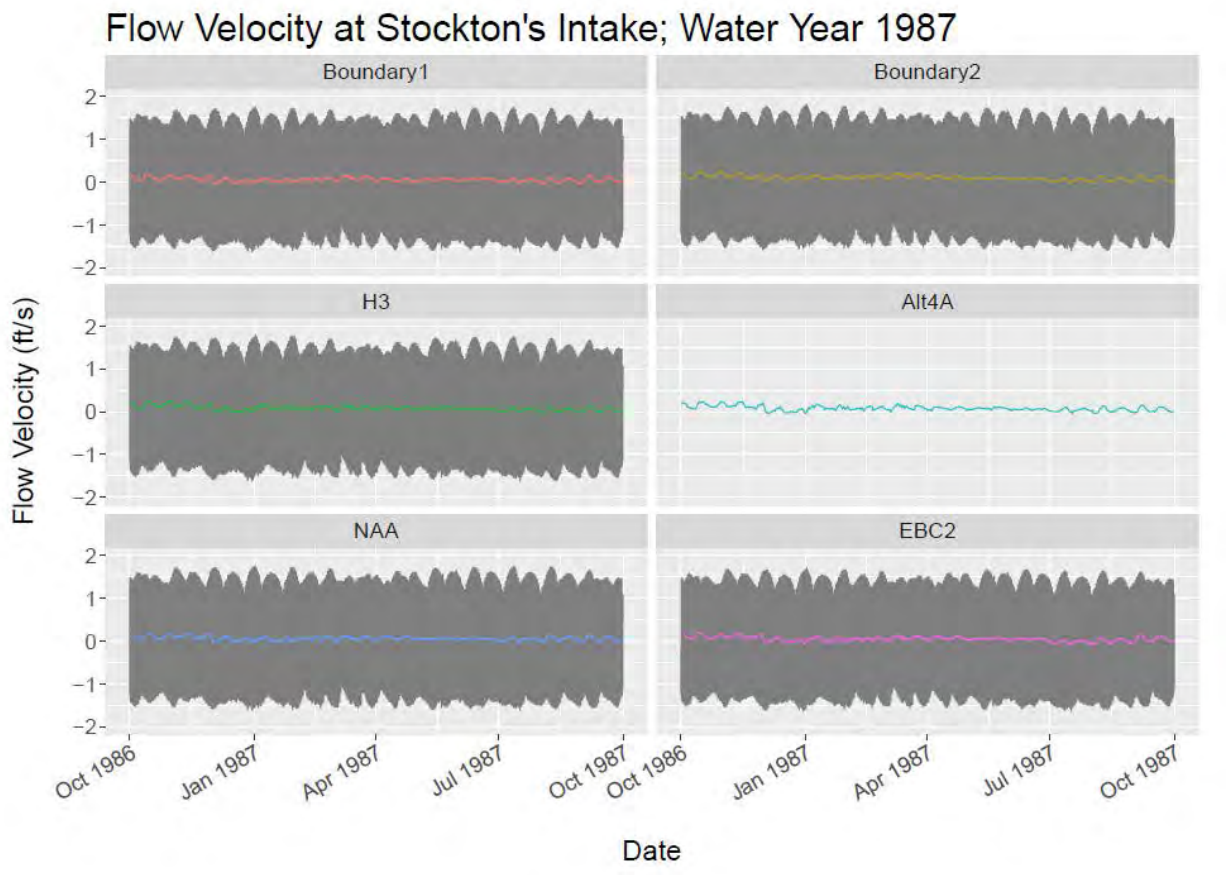

Figure 1 15-minute flow velocity (dark gray) and daily average flow velocity (colored lines) at Stockton's intake during water year 1987, a dry water year.

Figure 2 presents 15-minute and daily average velocities for the month of August 1987. Consistent with Figure 1, 15-minute velocities range from about -1.61 fps (upstream) to +1.75 fps (downstream direction), but daily average velocities range from about -0.1 fps (upstream) to +0.25 fps (downstream). Finally, Figure 3 presents 15-minute and daily average velocities for a

[3] Note that only daily average velocity is presented in Figures 1-3 for Alt4A, as the model results provided by DWR did not include 15-minute DSM2 model output for the Alt4A scenario.

four-day period in August 1987; 15-minute velocities in Figure 3 range from -1.61 fps (upstream) to +1.55 fps (downstream).

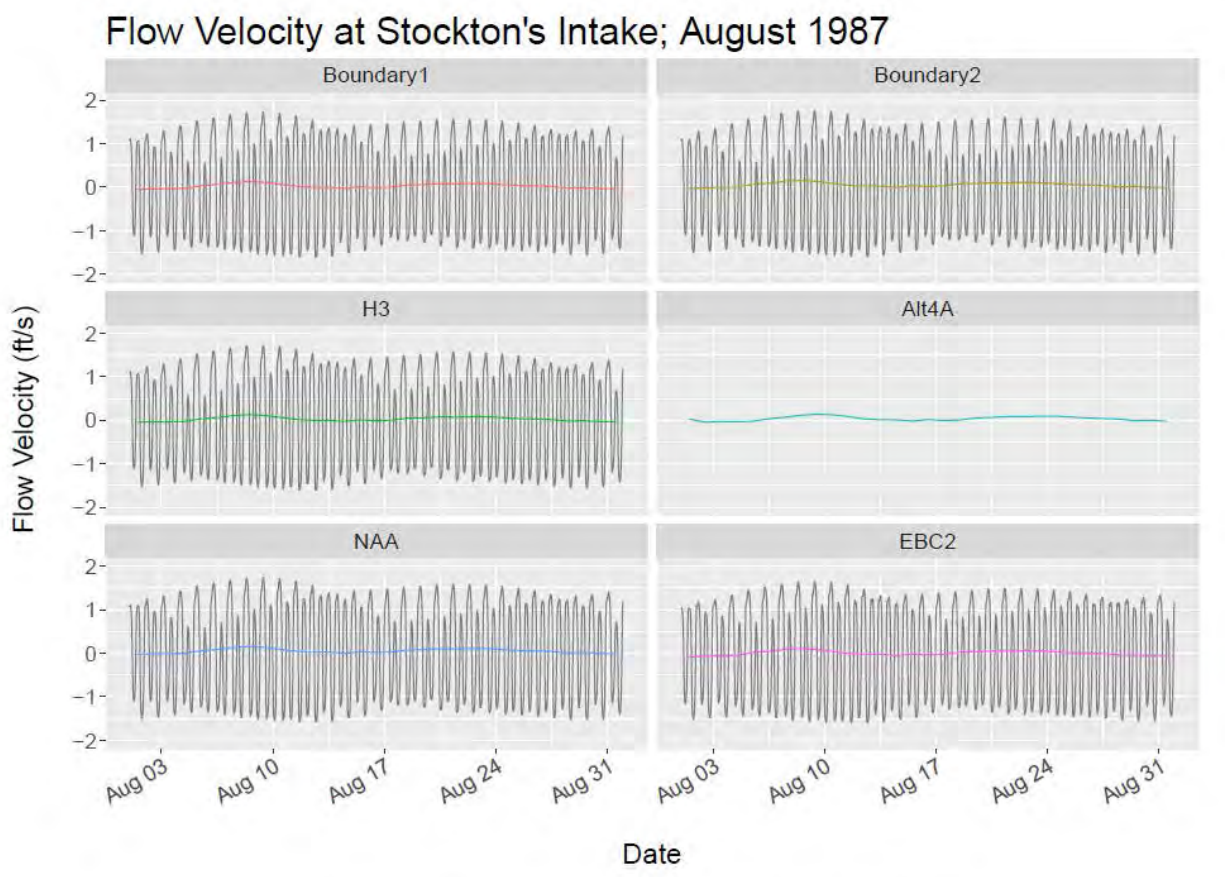

Figure 2 15-minute flow velocity (dark gray) and daily average flow velocity (colored lines) at Stockton's intake during August 1987.

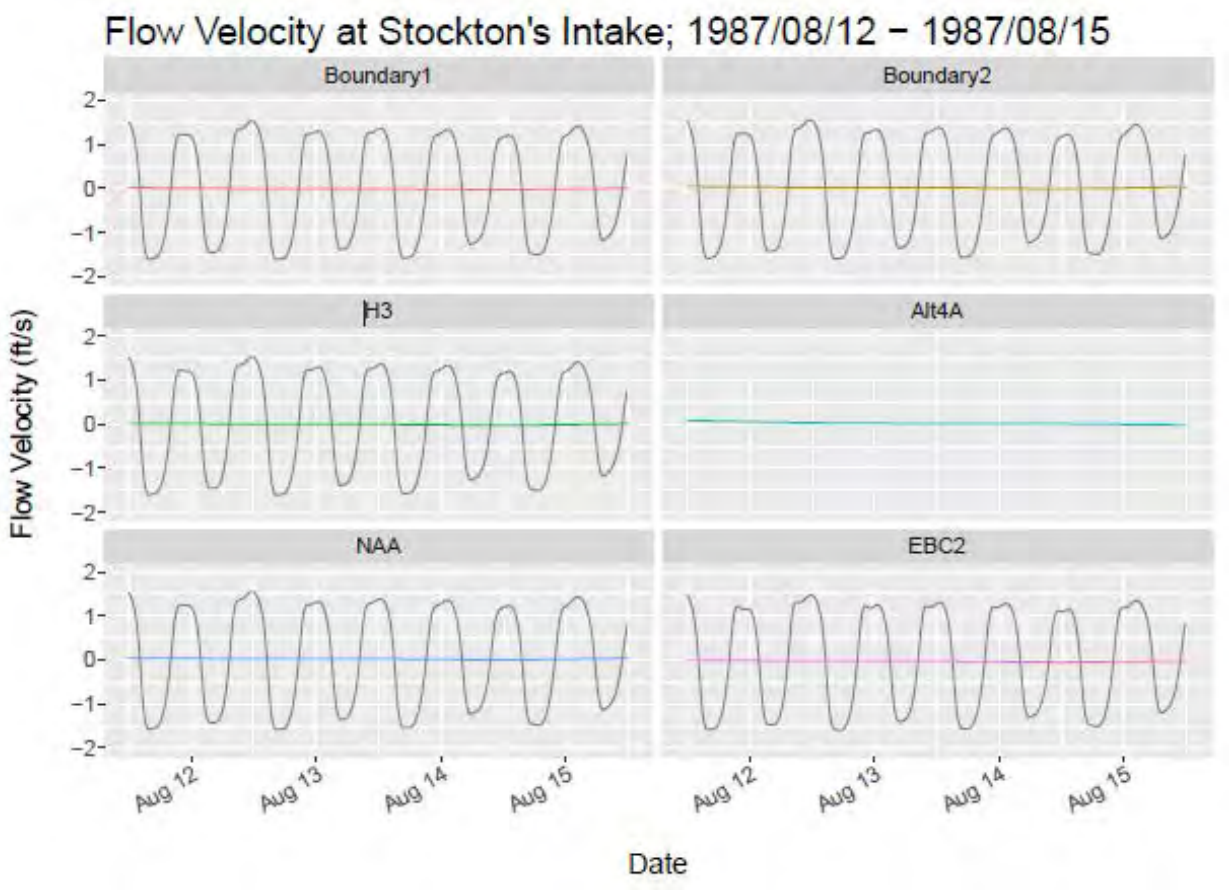

Figure 3 15-minute flow velocity (dark gray) and daily average flow velocity (colored lines) at Stockton's intake from August 11—16, 1987.

In contrast to Figures 1-3, which show the impact of tidal forcing on velocities in the vicinity of Stockton's intake, DWR-652 presented only exceedance probability plots of the daily maximum velocity for individual months over the entire 16-year simulation period (see, e.g., Figure 4, which reproduces DWR-652 Figure 49) or exceedance probability plots of "absolute values of daily velocities, on a 15-minute time step"[4] (see, e.g., Figure 5, which reproduces DWR-652 Figure 50). Note that Figures 4 and 5 present results for the month of August for the 1975-1991 simulation period; also note that DWR-653, which examined the impact of velocity on Microcystis blooms in the Delta, did not present information on velocity at Stockton's intake. Figure 4 indicates that the range of "daily maximum velocity" at Stockton's intake is simulated to vary from about +1.1 fps to about +1.8 fps (downstream), and that the "daily maximum velocity" is similar for the five model scenarios depicted. Figure 5 indicates that the "absolute

[4] It is unclear exactly what quantity is presented in these figures, as the figure captions refer to "absolute values of daily velocities, on a 15-minute time step." Based on the range of values presented in DWR's figures and consistent with statements by DWR that they evaluated "15-minute absolute velocity (regardless of direction)," we understand that these graphics represent the absolute values of 15-minute DSM2 velocity output, presented on a cumulative probability diagram.

value of daily velocities" varies from about 0 fps to about +1.7 fps (downstream), and that the lines for the five model scenarios shown in this figure fall nearly on top of each other (i.e., are virtually indistinguishable). Neither Figure 4 nor Figure 5 indicates the "sloshing" nature of flows at Stockton's intake, or the fact that daily average velocities range up to only about +0.25 fps and thus are far lower than the velocities depicted in Figure 4 and lower than all but about 5% of the "absolute values of daily velocities, on a 15-minute time-step."

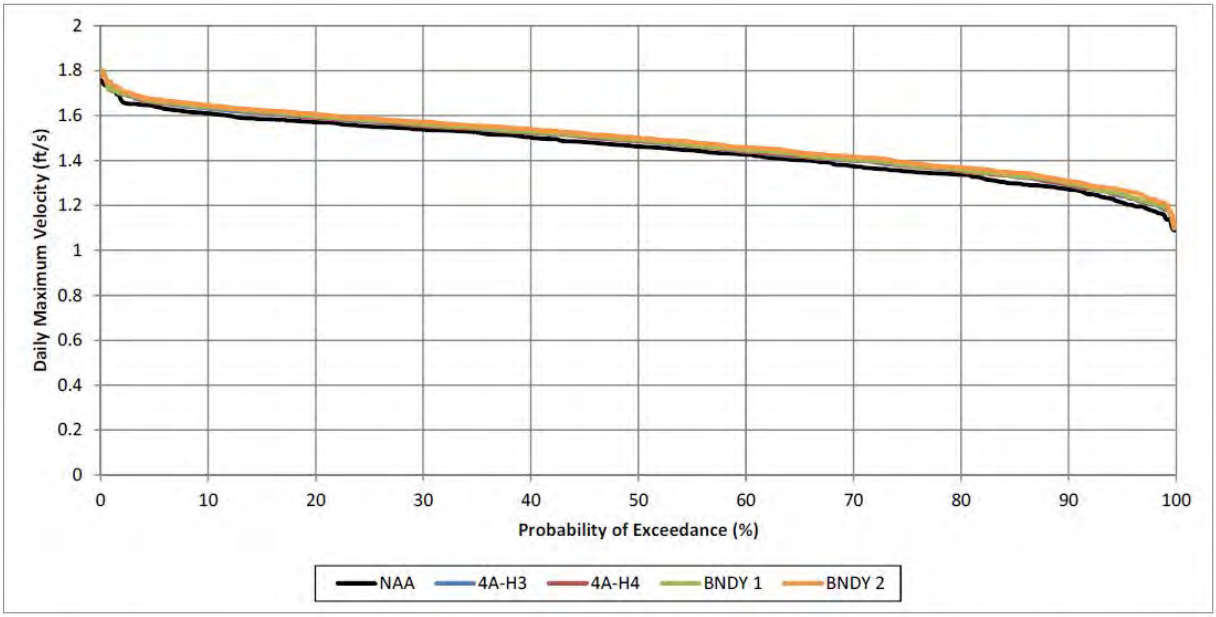

Figure 49. Probability of exceedance of daily maximum velocity in the San Joaquin River near the City of Stockton's drinking water diversion location for August of the 1976–1991 period of record modeled.

Figure 4 Figure 49 from DWR-652 at p. 59.

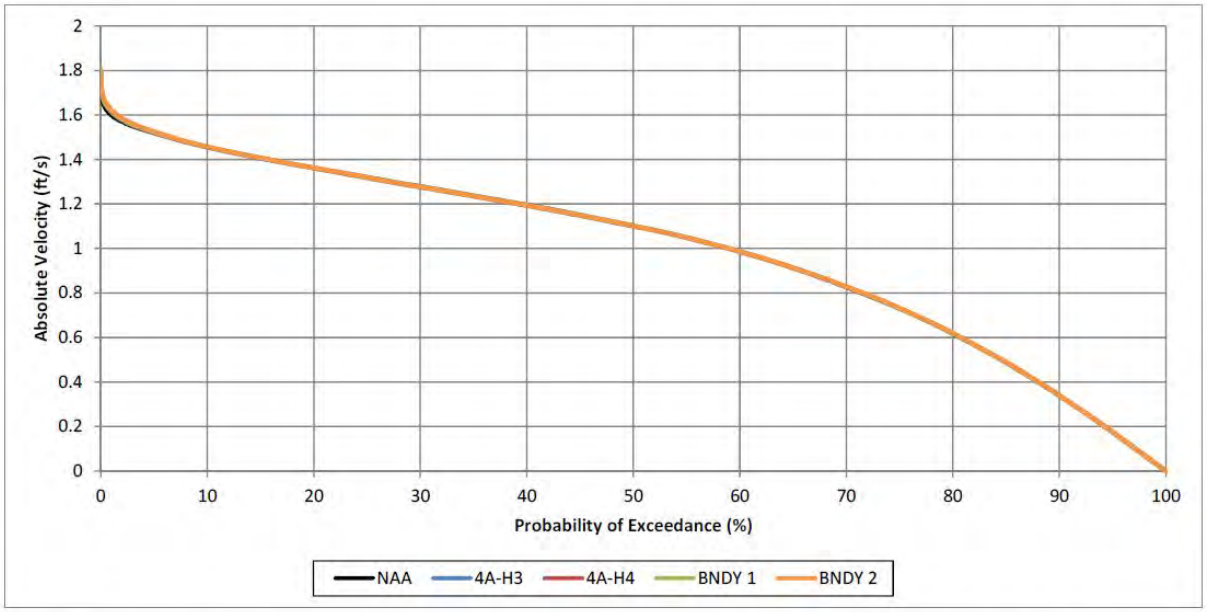

Figure 50. Probability of exceedance of absolute values of daily velocities, on a 15-minute time-step, in the San Joaquin River near the City of Stockton's drinking water diversion location for August of the 1976–1991 period of record modeled.

Figure 5 Figure 50 from DWR-652 at p. 59.

DWR has stated that "…modeling shows that the CWF would not substantially increase the frequency with which low channel velocities would occur, relative to the NAA [No Action Alternative]."[5] Figure 1 to Figure 3 clearly indicate that low channel velocities occur approximately four times per day at Stockton's intake (i.e., as the sloshing flow changes direction), and that daily average velocities can be characterized as "low" relative to peak 15-minute velocities. Because the channel velocity typically passes through zero four times per day as a result of tidal forces, it is expected that the frequency of low channel velocities will not change significantly as a result of implementation of the WaterFix project. (After all, the WaterFix project will not change tidal forcing, which is driven by gravitational forces exerted on the earth by the sun and the moon.) For this reason, DWR's analysis of the frequency of low channel velocities is not meaningful in the context of hydrodynamics in the Delta.

DWR has also provided testimony stating that "Channel velocity also dictates residence time within a channel reach because velocities dictate the flushing rate for the reach."[6] Exponent agrees in general with this statement, as the net velocity (i.e., the velocity with tidal sloshing removed) is more strongly related to residence time than either the daily maximum velocity or "absolute values of daily velocities, on a 15-minute time step." However, DWR did not present information regarding either tidally- or daily-averaged net velocities or residence time, and such

[5] DWR-653 at p. 12.
[6] DWR-653 at p. 13.

information cannot be derived or inferred from the velocity information presented in DWR-652 or DWR-653.

As shown in Figure 1 to Figure 3, the range of velocities over the course of the simulation period is similar for all modeled scenarios and indicative of strong sloshing, and the daily net velocity at Stockton is low for all modeled scenarios relative to the range in 15-minute velocities. Maximum daily flow velocities are relatively invariant between simulated scenarios, as is the frequency of low flows. Strong sloshing and low net flows are generally indicative of high residence times. As shown in STKN-026, the increase in Delta residence time that will be caused by the WaterFix project is greatest in August of dry years, increasing by approximately 37% for the Boundary 1 scenario relative to existing conditions (EBC2). (See Table 1 below, which reproduces Table 5 from STKN-026). The velocity information presented in DWR-652 and DWR-653 cannot be used to calculate or infer residence times within the Delta. DWR's statement that "channel velocity also dictates residence time" is true only if one uses the net velocity to evaluate residence time, but not if one attempts to use the "daily maximum velocity" or "absolute values of daily velocities, on a 15-minute time step" to infer information about residence time.

Table 1 Table 5 from STKN-026 (reproduced for convenience)

Table 5 Residence times of inflows to the Delta under a dry water year

	Monthly average residence time (days)					Percent increase from EBC2 to B1	Percent increase from EBC2 to B2	Percent increase from EBC2 to Alt4A
Month	EBC2	NAA	B1	B2	Alt 4A			
October	28	26.6	35.8	34.4	31.6	28%	23%	13%
November	32.3	32.3	36.5	40.2	38.6	13%	24%	20%
December	27.6	28.3	30.8	32.3	31.3	12%	17%	13%
January	31	31.7	32.9	35.9	34.2	6%	16%	10%
February	27.3	26.9	28.9	29.3	30.7	6%	7%	12%
March	24.2	24	26.4	26.1	27	9%	8%	12%
April	22.3	22.8	24.9	24.9	24.9	12%	12%	12%
May	38.2	39.3	37.1	40	39.2	-3%	5%	3%
June	36.4	36.9	37.9	40.1	37.8	4%	10%	4%
July	27.7	28.7	34.4	35.6	34.2	24%	29%	23%
August	23.2	26.7	31.1	31.8	30.9	34%	37%	33%
September	27.8	31.2	36.3	35.1	34.3	31%	26%	23%

In summary, it is my opinion that the presentation of simulated velocity in DWR-652 and DWR-653 fails to describe the tidal nature of flows in the Delta and at Stockton's intake. The velocity information in DWR-652 and DWR-653 cannot be used to assess flushing or residence time within the Delta or in the vicinity of Stockton's intake. As detailed below, it is my opinion that DWR's velocity analysis leads to incorrect conclusions regarding the water quality impacts of the WaterFix project on the City of Stockton.

1.2: DWR's analysis does not consider changes in residence time, and residence time is critical in understanding water quality impacts in the Delta, including at Stockton's intake

DWR has provided testimony stating that "Mr. Ringelberg, Mr. Burke, Mr. Lee and Mr. Shroshane [sic] did not provide any evidence to support their claims that the CWF would decrease flows and associated channel velocity and thus turbulence and mixing, and increase residence time, in the Delta."[7] DWR further stated, "Mr. Burke provided insufficient information and Mr. Ringelberg did not provide any evidence to support their respective claims

[7] DWR-653 at p. 11.

that residence times will increase due to the CWF, and thus the frequency and magnitude of cyanoHABs will be made worse by increased residence times."[8]

However, as described above, neither rebuttal report DWR-652 nor rebuttal report DWR-653 includes an analysis of residence time, and the information in those reports cannot be used to calculate or infer residence times. In contrast and as shown in Table 1, Exponent provided calculations of residence time in STKN-026, and concluded that DWR's model results indicate that residence time will increase significantly as a result of the WaterFix project. As will be shown in this testimony, residence time is an important indicator of water quality. With longer residence times, flushing of the Delta decreases. Certain water quality constituents, including chloride, electrical conductivity (EC), bromide, and organic carbon, are present in high concentrations in sources within the Delta (e.g., agricultural drainage) and can "build up" within the Delta over time. Thus, longer residence times correlate with higher concentrations of these constituents, and result in higher potential for *Mycrocystis* growth, as will be shown in Opinion 5.

[8] DWR-653 at p. 31.

Opinion 2: DWR's opinions regarding salinity impacts at the location of Stockton's intake are incomplete and misleading. Exponent's analysis of DWR's modeling shows that the WaterFix project will have significant impacts to salinity at the City's intake location.

DWR conducted hydrodynamic and water quality modeling using the DSM2 model, as described in STKN-026. DSM2 model output includes EC, which can then be converted to chloride. Both EC and chloride concentrations are measures of salinity, and both will be addressed below.

2.1: DWR's testimony regarding the FEIR/EIS analysis of salinity impacts at Stockton's intake location is misleading. Exponent's analysis of DWR's modeling shows that the WaterFix project will have significant impacts on the source and quality of water at Stockton's intake.

Even though water quality at the Stockton intake location was not assessed in the Final Environmental Impact Report/Environmental Impact Statement (FEIR/EIS) for WaterFix, DWR has continued to assert that the FEIR/EIS analysis shows that the impacts of WaterFix will be less-than-significant and non-adverse at the City of Stockton's intake location.[9] DWR has also continued to assert that water quality at the locations evaluated in the FEIR/EIS are "representative" of water quality at Stockton's intake location.[10] Specifically, DWR asserted

[9] See rebuttal report DWR-652 at p. 5: "when the EIR/EIS showed non-adverse effects of the CWF at its assessment locations across the Delta or for a portion of the Delta, such findings were used to make less-than-significant (CEQA)/non-adverse (NEPA) impact determinations to beneficial uses for the entire Delta or defined portions of the Delta, based on the representative nature of the individual assessment locations. Hence, when the EIR/EIS assessment showed less-than-significant/non-adverse impacts of the CWF at its assessment locations across the Delta with regard to the MUN use, it showed less-than-significant/non-adverse impacts of the CWF to the MUN use at the City of Stockton's WTP intake location as well."

[10] See rebuttal report DWR-652 at p. 5-6: "In summary, by determining the CWF-driven changes in water quality at the geographically distributed assessment locations, as well as the Bay-Delta WQCP assessment locations for EC and chloride, and comparing those changes to the Thresholds of Significance listed above for the purposes of making impact determinations, the EIR/EIS assessment determined (among other things) whether the CWF would adversely impact the MUN beneficial use of the San Joaquin River, or any segment of it. In so doing, the EIR/EIS assessment appropriately addressed whether the CWF would impact the City of Stockton's beneficial use of San Joaquin River water by its diversion and treatment of river water for municipal supply use (i.e., the MUN beneficial use at the City's WTP location)."

that the locations of Prisoners Point and Buckley Cove "are representative for purposes of assessing the effects of the CWF on water quality."[11]

As detailed in STKN-026, water quality at Stockton's intake location was not evaluated in the FEIR/EIS. STKN-026 established definitively that both the composition and salinity of water at Buckley Cove also differs from the composition and salinity of water at Stockton's intake location.

To address the assertion that Prisoners Point is representative of Stockton's intake location and consistent with the analyses presented for Buckley Cove in STKN-026, Exponent evaluated the source water composition and chloride levels for two baseline scenarios (EBC2 and the NAA) at Prisoners Point (see Appendix A for additional model runs from Prisoner's Point). Figure 6 shows the chloride concentrations that are simulated for Prisoners Point and Stockton's intake in four hydrologic year types. As shown in Figure 6, chloride concentrations simulated at Prisoners Point range to higher salinity (as chloride) values compared to water at Stockton's intake. For example, daily average chloride concentrations at Prisoners Point in the NAA scenario exhibit peak values of 135 mg/L (critical years), 122 mg/L (dry years), 173 mg/L (normal years), and 138 mg/L (wet years), while daily average chloride concentrations at Stockton's intake exhibit peak values of 99 mg/L (critical years), 93 mg/L (dry years), 136 mg/L (normal years), and 89 mg/L (wet years)—i.e., peak concentrations of chloride for the NAA scenario are higher at Prisoners Point than at Stockton's intake in all hydrologic year types.

Thus, I conclude that neither Buckley Cove (see STKN-026) nor Prisoners Point (see Figure 6 and figures in Appendix A) are representative of Stockton's intake location. I further conclude that, consistent with STKN-026, the FEIR/EIS did not properly evaluate water quality impacts at Stockton's intake location.

[11] DWR-652 at p. 5.

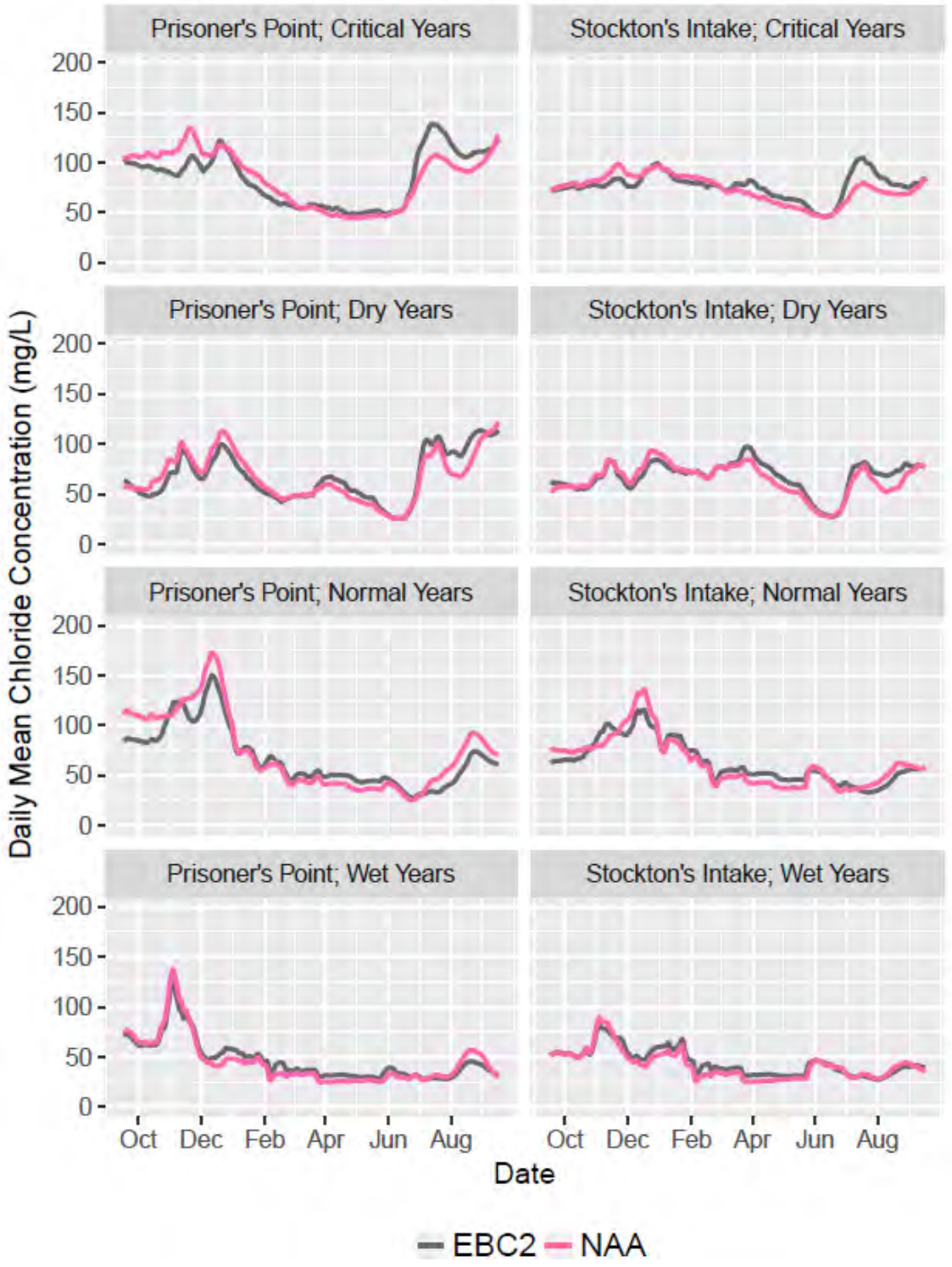

Figure 6 Daily mean chloride concentrations, averaged by hydrologic year type, for the NAA and existing condition (EBC2) scenarios at Prisoners Point and at Stockton's intake

As detailed in STKN-026, the FEIR/EIS did not fully evaluate the water quality impacts of the Boundary 1 or Boundary 2 scenarios, which DWR has asserted both in WaterFix testimony[12] and in the FEIR/EIS[13] are representative of the range of impacts that can be expected from the WaterFix project. The FEIR/EIS did find that impacts for scenarios representative of Boundary 1 and Boundary 2 operating conditions would be "significant and unavoidable (any mitigation not sufficient to render impact less than significant)" and "adverse."[14] Thus, contrary to the statements in rebuttal reports DWR-652 and DWR-653, it is not clear that the FEIR/EIS actually concluded there would be "less-than-significant/non-adverse" impacts at Stockton's intake.

In contrast to DWR's conclusions, STKN-026 shows significant impacts to water quality at Stockton's intake. Nothing presented in DWR's rebuttal case has altered these conclusions.

2.2: DWR's evaluations of chloride impacts at Stockton's intake in DWR-652 are insufficient to determine impact. A more detailed analysis of DWR's model results shows significant increases in chloride concentrations at Stockton's intake as a result of the WaterFix project.

DWR-652 analyzed a number of water quality constituents at Stockton's approximate intake location. Results for salinity were presented for chloride in DWR-652 Section 3.3.2 as long-term averages (e.g., "maximum modeled mean monthly chloride concentrations") for both the 16-year simulation period and for hydrologic year types within that simulation period.[15] DWR evaluated the potential impacts to Stockton using three chloride thresholds: the secondary MCL (250 mg/L), upper level (500 mg/L), and short-term level (600 mg/L).[16]

We have three primary concerns regarding DWR's analysis of chloride impacts at Stockton's intake.

First, the thresholds used by DWR to evaluate water quality impacts to Stockton are inappropriate. Stockton has provided testimony on multiple occasions that its operations are affected at a threshold of 110 mg/L, and that the City must generally use an alternative source of water, such as purchased water or groundwater, when chloride levels exceed 110 mg/L.[17] However, DWR has not evaluated water quality impacts using the 110 mg/L chloride threshold.

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[12] See STKN-026 at pp. 13-14.

[13] See STKN-026 at pp. 29-30.

[14] See STKN-026 at pp. 31-32.

[15] See DWR-652, pp. 21-31.

[16] DWR-652 at p. 21.

[17] STKN-026 at p. 9; and STKN-039 at p. 3.

Second, as detailed in STKN-026, monthly mean chloride concentrations are insufficient to evaluate water quality impacts to a drinking water operator such as Stockton. STKN-026 demonstrates that DWR's model runs show significant water quality impacts when results are evaluated on a daily basis, including for the period as a whole and for hydrologic year types.[18]

Third, DWR has not evaluated chloride concentrations for a representative existing condition model scenario, such as the EBC2 scenario, that a drinking water operator such as Stockton can understand impacts relative to current conditions.

STKN-026 demonstrates that DWR's model runs show significant water quality impacts when results are evaluated on a daily basis, including for the period as a whole and for hydrologic year types.[19]

2.3: DWR's assertions that the primary source of chloride in the Delta is seawater intrusion is only true in some portions of the Delta, and chloride can exceed 110 mg/L at Stockton's intake even when seawater is not present. Internal sources of chloride within the Delta are important in areas of the Delta not frequently influenced by seawater intrusion.

DWR has stated that "The primary source of chloride in the Delta is seawater intrusion."[20]

In my experience, seawater intrusion is an important source of chloride, particularly in the western Delta. But DWR's testimony is misleading in that it does not clearly indicate that there are several high chloride sources of water other than seawater in the Delta, including both the San Joaquin River and agricultural return waters. For example, rebuttal report DWR-652 indicates that the mean chloride concentration is 136 mg/L for agricultural return waters, and 81.4 mg/L for San Joaquin River water.[21]

However, DWR's DSM2 model simulates the salinity of the San Joaquin River as a function of the flow in the river, and DSM2 model input files demonstrate that San Joaquin River water is simulated to have chloride concentrations in excess of the long-term average value. For example, as shown in Figure 5, DSM2 model input files show a chloride concentration for San

[18] See STKN-026 at pp. 33-39.

[19] See STKN-026 at pp. 33-39.

[20] DWR-652 at p. 8.

[21] DWR-652 at p. 21.

Joaquin River inflow of up to 133 mg/L.[22] Because San Joaquin River water itself has, on occasion, concentrations exceeding the City's threshold of 110 mg/L, the San Joaquin River water can provide a significant concentration of chloride at the City's intake.

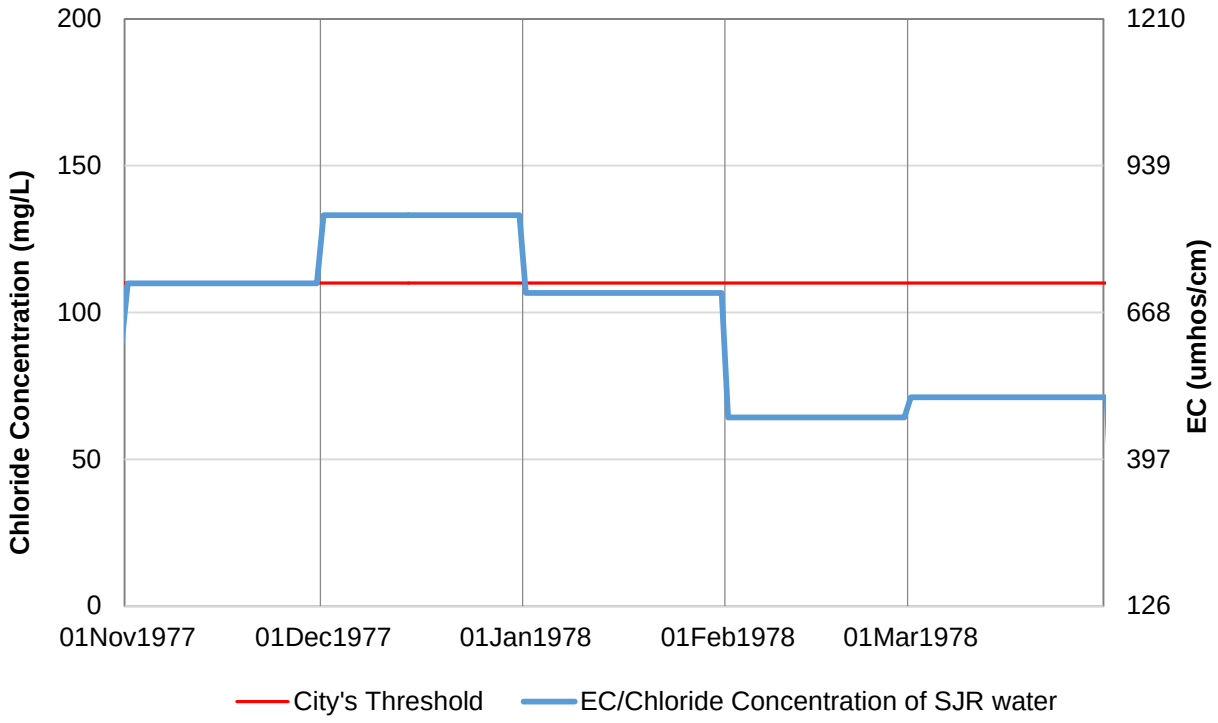

Figure 7 Chloride concentration (and EC) of the San Joaquin Rivera at Vernalis from November 1977 to April 1978, from DSM2 model input files.

Similarly, the DSM2 model simulates the salinity of agricultural drainage within the Delta as part of the "Delta Island Consumptive Use" (DICU) module within DSM2. Drainage nodes near Stockton's intake as simulated within DSM2 to have chloride concentrations as high as 291 mg/L (see Figure 8, which shows the chloride concentrations in agricultural drainage in DSM2 model input files for the 16-year period). Because agricultural drainage water has, on occasion, concentrations well in excess of the City's threshold of 110 mg/L, San Joaquin River water can provide a significant concentration of chloride at the City's intake.

[22] As discussed in Opinion 2.4 different conversion factors can be used to convert EC to chloride. Figure 7 shows the salinity of the San Joaquin River inflows in the DSM2 model both as EC (unconverted direct model output) and as chloride converted using the relationship of Guivetchi (1986).

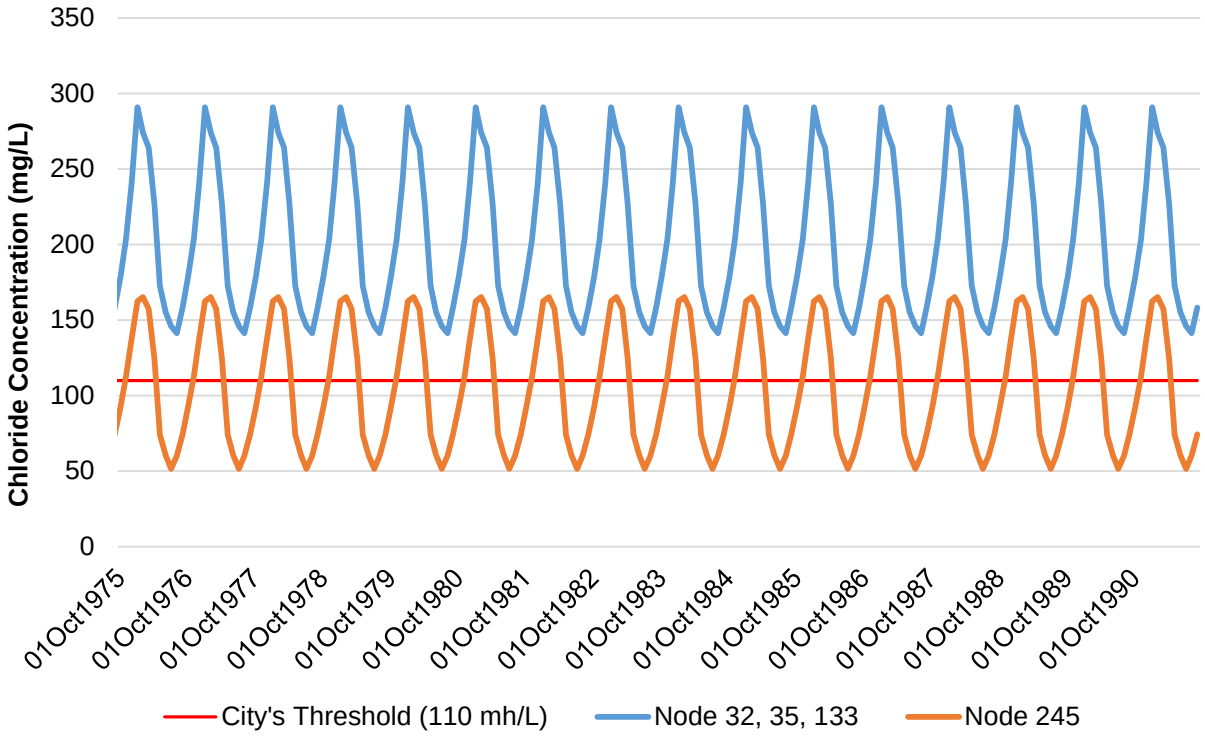

Figure 8 Chloride concentrations in agricultural drainage (DICU) simulated at DSM2 nodes 32, 35, 133, and 245, near Stockton's intake

Finally, DWR's model results show that chloride concentrations can exceed the City's threshold of 110 mg/L even when Bay water is nearly absent at the City's intake location (i.e., concentrations <0.1%). Figure 9 shows chloride concentrations simulated at the City's intake for the Boundary 1 scenario in January-March 1978. On February 8, chloride concentrations were simulated to be approximately 120 mg/L but the concentration of Bay water was almost zero at the City's intake. During this period of early 1978, water residence times in the Delta are estimated to be 8.5 days, using the methods described in STKN-026 Section 4.5.

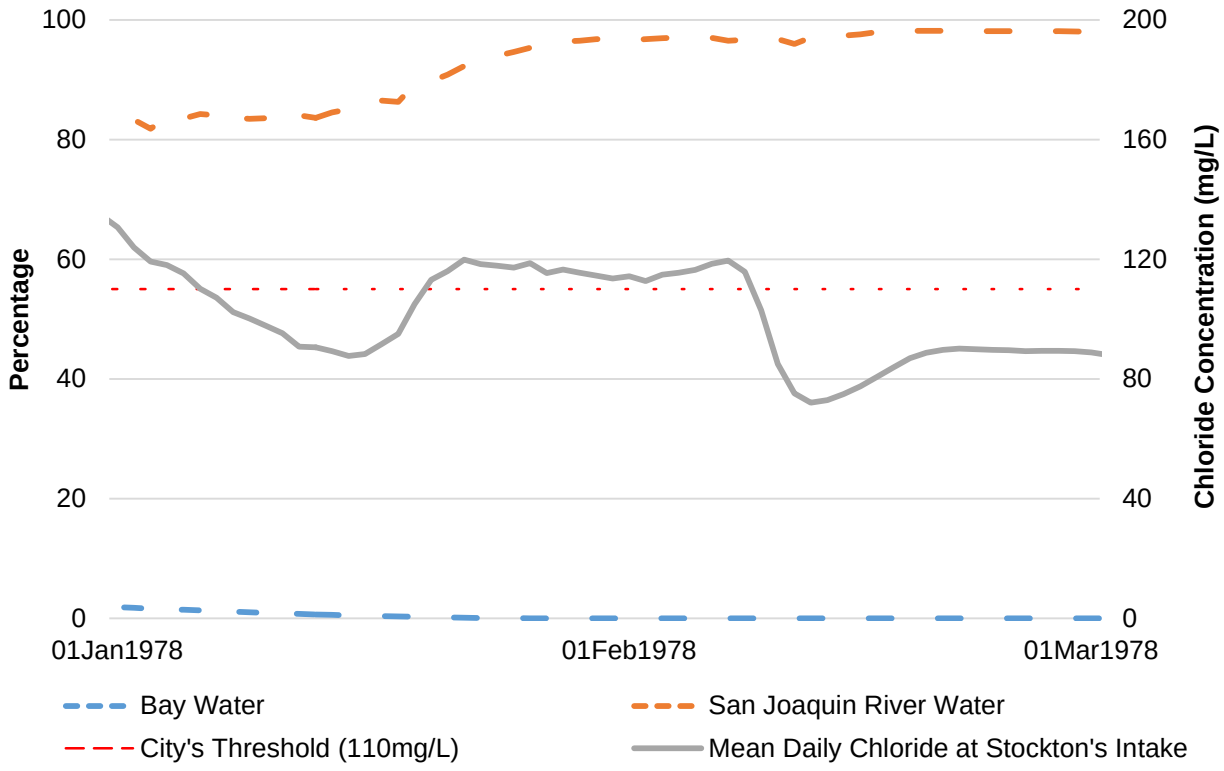

Figure 9 DSM2 model results showing the volumetric percentage of water sources, and the mean daily chloride concentration at Stockton's intake.

2.4: DWR's assertion that differences in the conversion factor used to convert EC model output to chloride may be responsible for the apparent exceedances of water quality thresholds is misleading. Our analysis shows that the conversion factors used by DWR and Exponent are similar.

When asked about chloride exceedances of the D-1641 250 mg/L chloride threshold, as discussed in Brentwood-102 Figure 5, Dr. Nader-Tehrani responded as follows:

> Two things I want to say is I guess the more important thing, this is coming from a – not my analysis; it's Ms. Paulsen which used it – and I want to repeat, different EC-to-chloride conversions. So when Mr. Aladjem refers to exceedances, it's based on not DWR's analysis; it's based on somebody else's analysis…[23]

[23] SWRCB California WaterFix Water Right Change Petition Hearing Transcript Volume 43, p. 56:17-23. May 11, 2017.

Although DWR's testimony was in response to Exponent's testimony for Brentwood, we anticipate that similar concerns may be raised concerning Exponent's analysis for Stockton. Exponent used the EC conversion at RSAN035 (near Stockton's intake) from Guivetchi (1986),[24] while DWR used a slightly different conversion factor.[25] Figure presents a plot of the two conversion factors. As shown in Figure 10, Exponent's conversion factor is very similar to the conversion factor used by DWR at low chloride concentrations. Above chloride concentrations of about 65 mg/L, the conversion equation used by Exponent becomes increasingly conservative (i.e., results in lower chloride concentrations). Thus, if Exponent had used the same conversion equation as DWR, chloride impacts would appear slightly worse.

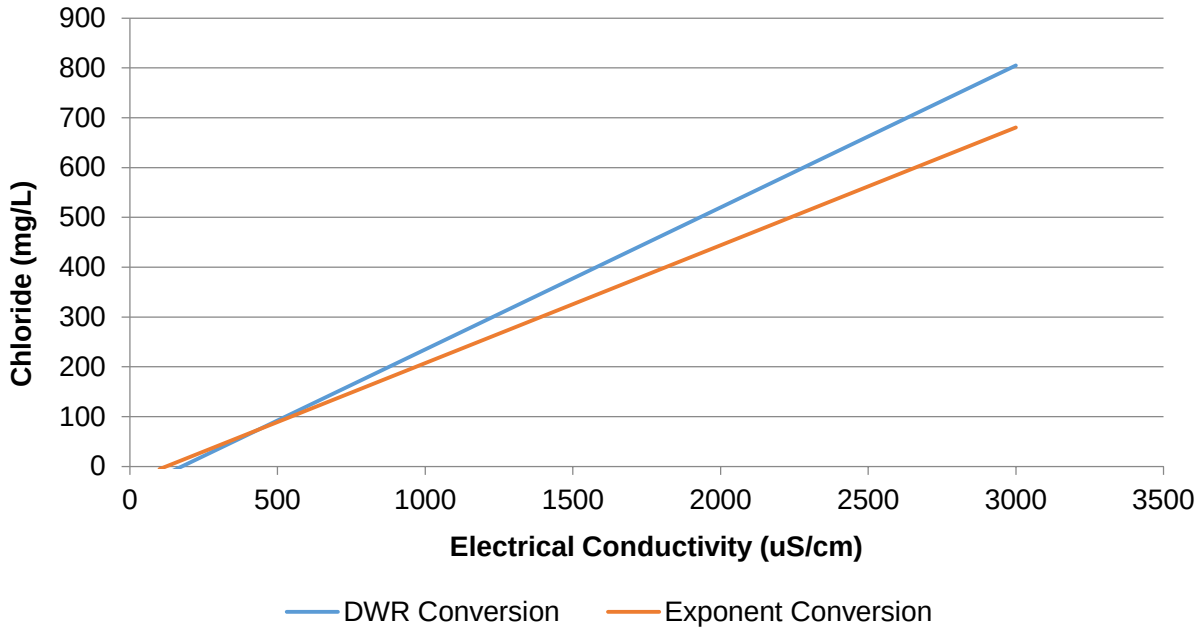

Figure 10 Comparison of EC to salinity conversion equations used by DWR and Exponent in post-processing DSM2 data.

[24] The EC to chloride conversion for RSAN035 in Guivetchi (1986) is Cl = -28.9 + (0.23647*EC).

[25] DWR used the conversion equation of Cl = -50 + (0.285*EC) as described in DWR-509.

2.5: Similar to chloride, DWR's evaluation of EC at Stockton's intake in DWR-652 is insufficient to determine impacts. A more detailed analysis of DWR's model results shows significant increases in EC concentrations at Stockton's intake resulting from the WaterFix project.

As with chloride, DWR presented results for EC in DWR-652 as long-term averages ("maximum modeled mean monthly chloride concentrations") for the 16-year period and for the hydrologic year types within that period.[26]

DWR summarized the results of their analysis as follows:

> Collectively, the information presented below indicates that the CWF is anticipated to result in EC levels at the City's WTP intake location that would sometimes be higher and other times lower than that for the NAA, with long-term average EC levels for the CWF and NAA being similar (within 5%), and thus would not substantially degrade water quality with regard to EC. The increases in EC levels that would be anticipated to occur at this site for the CWF, relative to the NAA, would not be of a magnitude that would cause an exceedance of the applicable drinking water MCLs, on a mean monthly basis, with the exception of a single month in the modeled period of record (1976-1991) for Boundary 1 for the 900 uS/cm MCL.[27]

Consistent with the comment provided in Section 2.2 for chloride, it is my opinion that DWR's presentation of monthly average EC values is insufficient to determine impacts at Stockton's intake because it does not provide information on a timescale relevant to a drinking water operator in the Delta. In addition, DWR-652 clearly discloses increases in EC at Stockton's intake, including one month within the simulation period where the monthly average chloride concentration in the Boundary 1 scenario is simulated to the MCL of 900 μS/cm.[28]

Also consistent with our analysis in Section 2.2 for chloride, the EC thresholds that should have been used by DWR correspond to 110 mg/L chloride. The EC level that corresponds to a chloride concentration of 110 mg/L is 587 μS/cm (using the conversion equation of Guivetchi (1986)) and 561 μS/cm (using the conversion equation of DWR-509).

As with chloride, DWR presented DSM2 model results for EC in the form of long-term averages. DWR's long-term averages indicate that the WaterFix project will cause increases in EC. Increases on a daily basis will at times exceed the long-term average increases. In summary,

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[26] DWR-652 at p. 26.

[27] DWR-652 at p. 31.

[28] DWR-652 at p. 31.

as with chloride, DWR's DSM2 model results for EC indicate that salinity will increase at Stockton's intake as a result of the WaterFix project. See also STKN-026.

Opinion 3: The information provided by DWR regarding bromide is insufficient to determine impacts to Stockton but indicates that bromide concentrations will increase.

DWR presented bromide concentrations at Stockton's intake in the form of long-term monthly averages for both the 16-year modeling period and for hydrologic year types. As detailed in Exponent's prior testimony,[29] long-term averages are generally not suitable for assessing impacts to drinking water operators; greater impacts result from higher concentrations that will occur on shorter time-steps. Additionally, DWR failed to analyze existing condition bromide concentrations, and thus its analysis does not provide a sufficient baseline with which to compare and evaluate impacts against Stockton's current operations.

DWR evaluated bromide concentrations at the Stockton intake using two methods: a mass-balance methodology and an approach employing a relationship between EC and bromide.[30] DWR described the first method as follows:

> The first approach was mass-balance methodology, in which the DSM2-modeled source water fractions were multiplied by long-term average bromide concentrations in each source water to estimate the concentration at the site for each scenario."[31]

The source water bromide concentrations apparently used by DWR in this analysis are provided in Table 1 of DWR-652 and indicate bromide concentrations of 251 µg/L for San Joaquin River water and 456 µg/L for agricultural return flows.[32]

DWR's mass-balance methodology does not consider variability in bromide concentrations, i.e. it appears to assume constant long-term average bromide concentrations for each source, regardless of changes in flow rates or other factors that may affect bromide concentrations.[33] In fact, bromide concentrations in San Joaquin River water are expected to vary considerably with flow rate, much like EC varies in the San Joaquin River with flow rate. Extensive real-time bromide measurements in the San Joaquin River show that concentrations have ranged above 600 ug/L in the past (see Figure 11). Additionally, concentrations as high as 106,000 ug/L have

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[29] See STKN-026 at pp. 16-20. See also Section 2.2 above.

[30] DWR-652 at p. 8-9.

[31] DWR-652 at p. 8.

[32] DWR-652 at p. 7.

[33] Table 1 in DWR-652 at p. 7 lists a single bromide concentration for each water source with the exception of Bay water, which is listed as having a bromide concentration of 13,149-32,951 ug/L. DWR-652 does not provide additional detail regarding the mass balance methodology, so it is unclear what concentration was used to represent long-term average bromide concentrations in Bay water.

been reported in the Delta near agricultural drains.[34] The use of long-term average bromide concentrations in the mass balance methodology does not consider variability in bromide concentrations and will underestimate bromide concentrations within the central Delta that would result from higher-than-average bromide levels in source flows. DWR recognized this fact for chloride concentrations in the San Joaquin River by using a flow-dependent chloride relationship for San Joaquin River inflows to the Delta, but DWR's mass balance methodology did not consider relationships between bromide and flow.

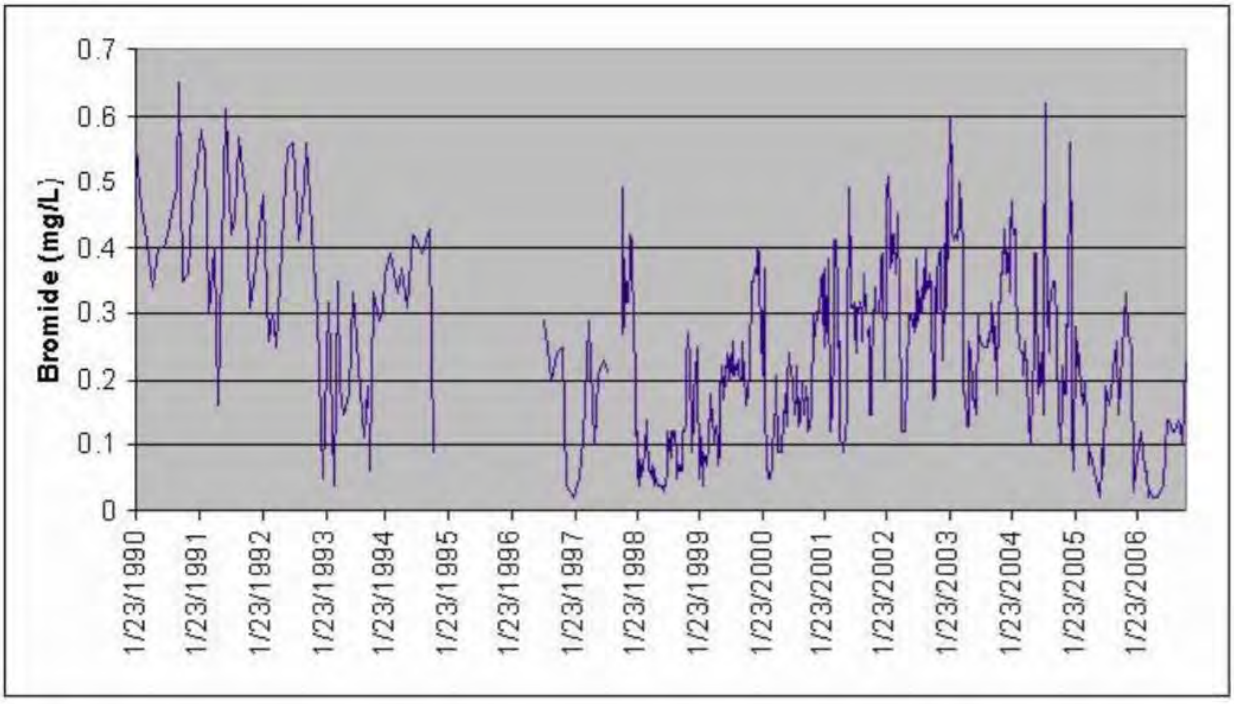

Figure 11 Bromide concentrations for the San Joaquin River near Vernalis, 1990-2006. Source: CALFED (2007), Figure 14.

DWR describes its second method for evaluating Delta bromide concentrations as follows: "The second methodology uses a relationship between bromide and EC (with EC modeled directly by DSM2) to estimate bromide concentrations at the site for each scenario."[35] No additional detail is provided in DWR-652, and DWR has not provided the bromide-EC relationship it used to calculate bromide concentrations. DWR's description ("a relationship between bromide and EC") implies that DWR used a single relationship. However, a single, fixed relationship between EC and bromide may not accurately capture the variations in the relationship noted by others. For example, CALFED (2007) states that there is "a predictable relationship between EC and bromide…at the diversion points [e.g., the H.O. Banks Pumping Plant] although it appears

[34] U.S. Department of the Interior, Bureau of Reclamation (2005). San Luis Drainage Feature Re-evaluation, Draft Environmental Impact Statement, May. P. 5-29.

[35] DWR-652 at p. 9.

to be bimodal suggesting more than one major source of salts contributes to the observed conductivity."[36] Without additional detail, it is not possible to validate DWR's second calculation approach.

Finally, DWR's written description of its analysis appears to contradict the graphics in the testimony. For example, DWR summarized its bromide analysis results for below normal years (reproduced as Figure 12), stating, "Based on these findings, the CWF would be expected to result in similar or lower mean monthly bromide concentrations at the site when concentration would be 300 μg/L or greater for the NAA."[37] However, Figure 12 appears inconsistent with this summary statement. For example, the Boundary 1 scenario shows a bromide concentration significantly higher than the NAA bromide concentration when the NAA concentration exceeds approximately 150 ug/L, and the maximum monthly bromide concentration for the Boundary 1 scenario is approximately 100 ug/L higher than the maximum monthly bromide concentration for the NAA scenario. Figure 12 also indicates that roughly half the time, the bromide concentration will be between about 40 ug/L to 100 ug/L higher for the Boundary 1 scenario than for the NAA scenario.

[36] CALFED (2007) at p. 25.

[37] DWR-652 at p. 16.

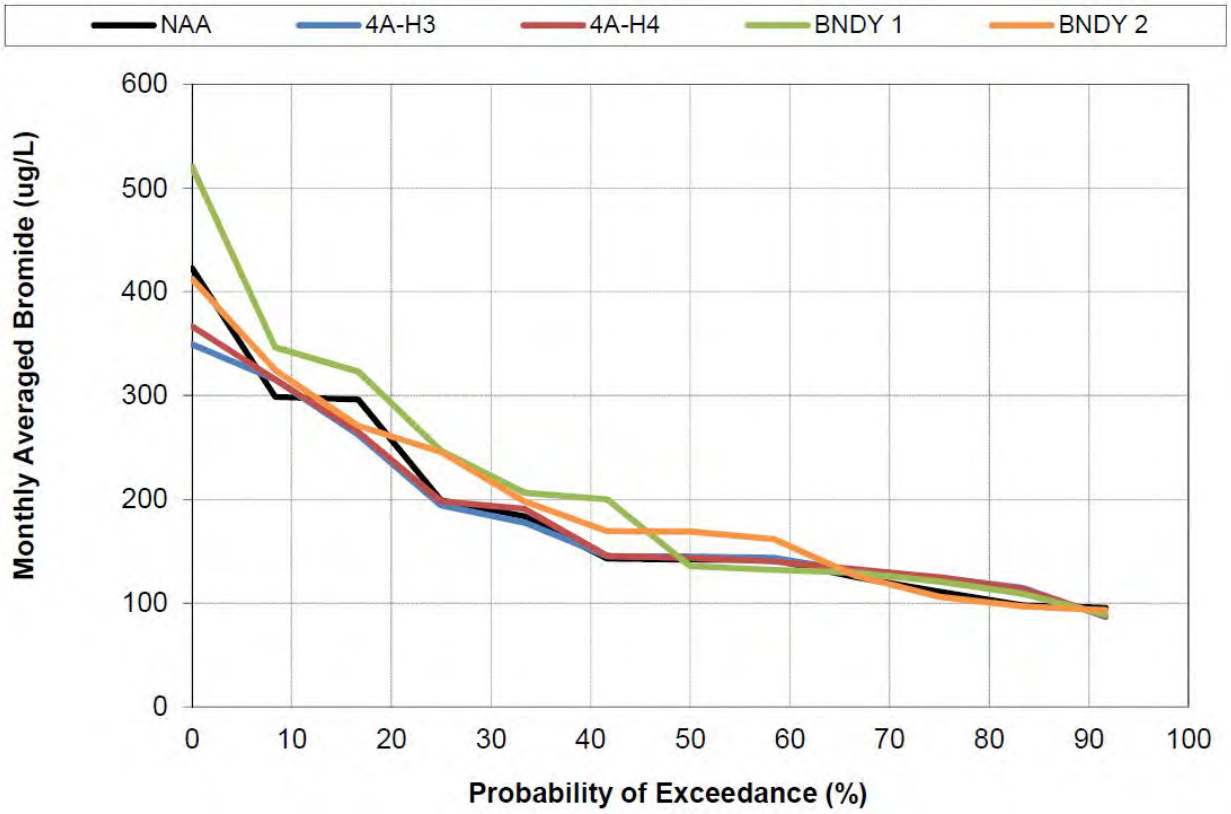

Figure 12 Probability of exceedance plot for monthly average bromide concentrations in the San Joaquin River at the City of Stockton's drinking water diversion location for below normal years (1978, 1980), based on EC-to-bromide relationship. Source: DWR-652, Figure 10, p. 16.

Similarly, DWR characterized the results presented in Figure 13 (showing monthly average bromide concentrations in dry years) as follows: "Based on these findings, the CWF would be expected to generally result in similar or somewhat higher mean monthly bromide concentrations at the site in dry years, relative to the NAA."[38] However, Figure 13 appears to show that, in fact, bromide concentrations for the WaterFix scenarios would be substantially higher in dry years than NAA concentrations for most months in the simulation period. For example, in the range of 6% to 55% probability of exceedance, bromide concentrations for all CWF alternatives would be higher than those for the NAA, and the Boundary 2 and 4A-H4 alternatives would yield concentrations that exceed the NAA concentrations by between about 33 ug/L and 150 ug/L (i.e., bromide concentrations in this range would be about 15-40% higher for these WaterFix scenarios than for the NAA).

[38] DWR-652 at p. 17.

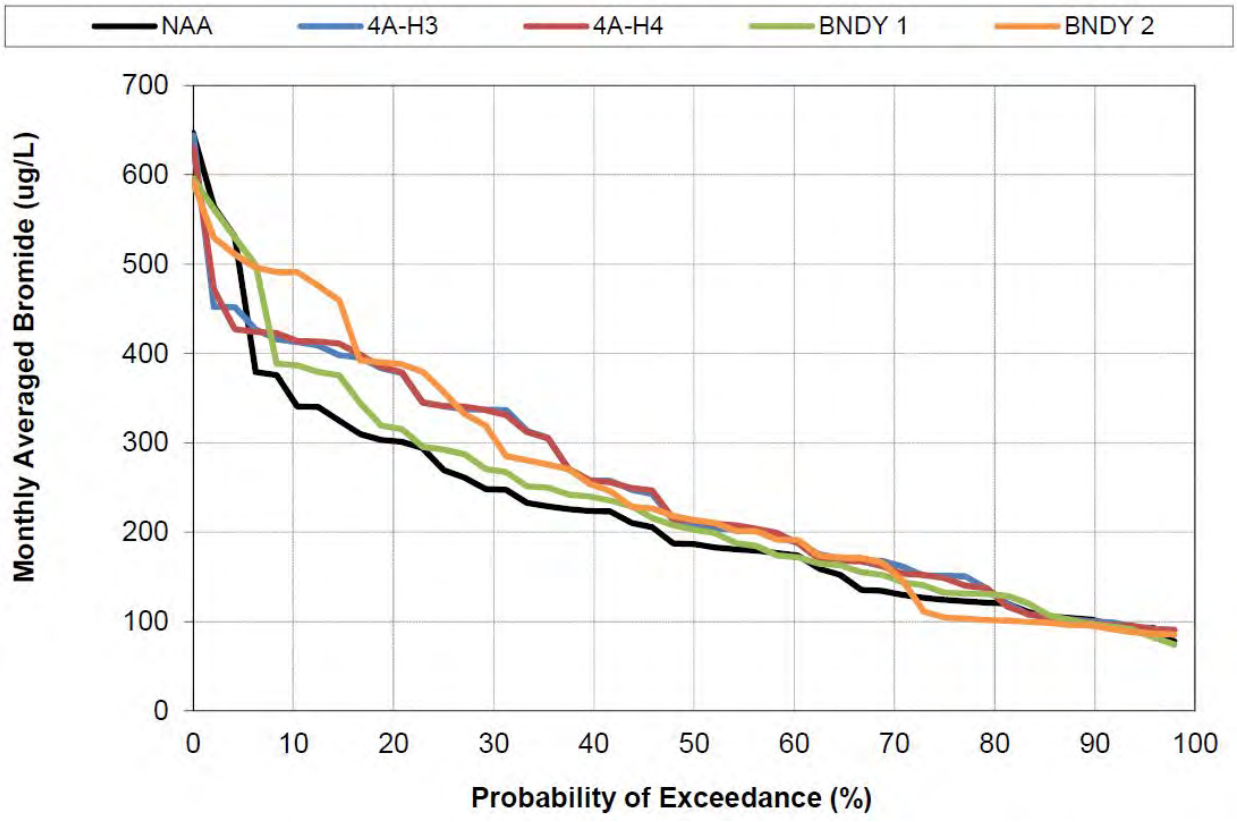

Figure 13 Probability of exceedance plot for monthly average bromide concentrations in the San Joaquin River at the City of Stockton's drinking water diversion location for dry years (1981, 1985, 1987, 1989), based on EC-to-bromide relationship. Source: DWR-652, Figure 11, p. 17.

Finally, bromide concentrations in critical years were depicted in Figure 4 (below) and characterized by DWR as follows: "Based on these findings, the CWF would be expected to result in similar or somewhat higher mean monthly bromide concentrations at the site in critical years, relative to the NAA."[39] In contrast to this description, Figure 4 shows that in critical years the CWF alternatives would yield significantly higher monthly average bromide concentrations than the NAA at some probabilities of exceedance. For example, at the 20% exceedance level, the Boundary 2 alternative would yield a bromide concentration approximately 100 ug/L higher than the NAA (a difference of approximately 30%).

[39] DWR-652 at p. 17.

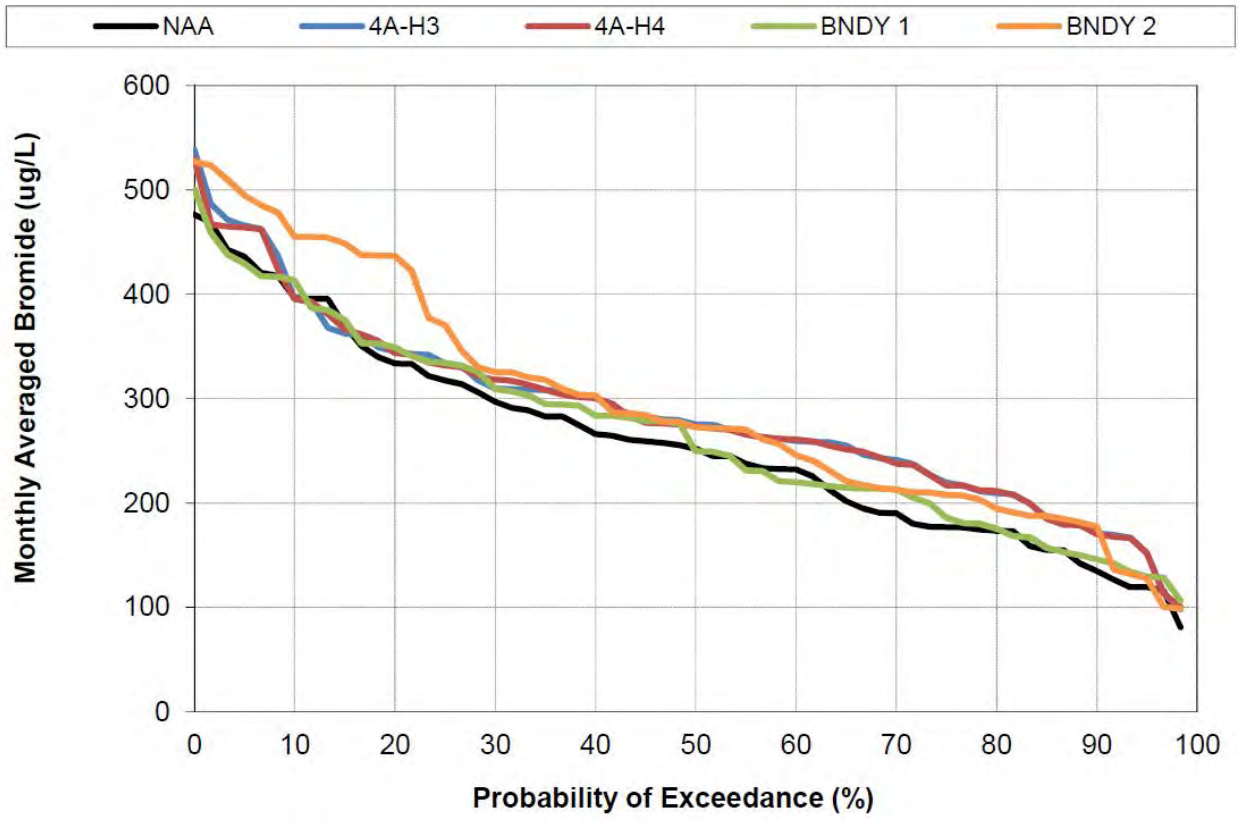

Figure 14 Probability of exceedance plot for monthly average bromide concentrations in the San Joaquin River at the City of Stockton's drinking water diversion location for critical years (1976, 1977, 1988, 1990, 1991), based on EC-to-bromide relationship. Source: DWR-652, Figure 12, p. 18.

Based on the information contained in rebuttal report DWR-652, Exponent concludes that the WaterFix project would result in significant increases in bromide concentrations at Stockton's intake. Although better and more accurate methods should have been used to support DWR's testimony (e.g., determination of impacts using daily concentrations, incorporating variations between bromide and EC in the mass balance methodology, comparing to an appropriate existing condition baseline (EBC2)) as outlined in this opinion, DWR's own results show a significant increase in predicted bromide concentrations at Stockton's intake. Further, this impact is only apparent upon close inspection of the figures in DWR-652 and does not appear to be fully or appropriately disclosed in the text or conclusions of DWR-652.

Opinion 4: The information provided by DWR regarding organic carbon is insufficient to determine impacts at Stockton's intake location but indicates that organic carbon concentrations will increase.

DWR-652 indicates that "The DSM2 model was used to directly model DOC [dissolved organic carbon] concentrations at the City's diversion location."[40] As with other water quality constituents, DWR's analysis for organic carbon is presented as long-term monthly averages for both the entire 16-year simulation period and for hydrologic year types. DWR-652 also notes that "the Final EIR/EIS (chapter 8, p. 8-955-957) stated that long-term average DOC concentrations for some Delta interior locations are predicted to increase by as much as 0.2 mg/L."[41] (DWR-652 at p. 46)

STKN-039 notes that increased TOC in source water from the CWF would require Stockton to change to water treatment processes such as enhanced coagulation or granular activated carbon adsorption, or to find alternative sources of water. These issues have been presented previously in Stockton's testimony and in comments to the BDCP and EIR/EIS.

DWR has not provided sufficient information for us to assess the modeling or model results for organic carbon. DWR-652 does not present the methodology used to assess organic carbon. Although we have identified some model input files for DOC, we have not to date identified DSM2 model output for organic carbon, and thus we have been unable to analyze model results for shorter than monthly periods. (If we have overlooked this output, we would request that DWR direct us to the model files that contain this information.) Figure 15 presents DSM2 model inputs describing organic carbon concentrations in certain inflows to the Delta. As shown in Figure 15, the San Joaquin River is simulated by DWR to have DOC concentrations as high as 11 mg/L or greater (i.e., in excess of the significance thresholds). Because San Joaquin River water is the dominant source of water at the City's intake during some periods under WaterFix, it is possible that these concentrations of DOC will cause an exceedance of the 4 and 7 mg/L DOC thresholds at the City's intake.

[40] DWR-652 at p. 42.

[41] DWR-652 at p. 46.

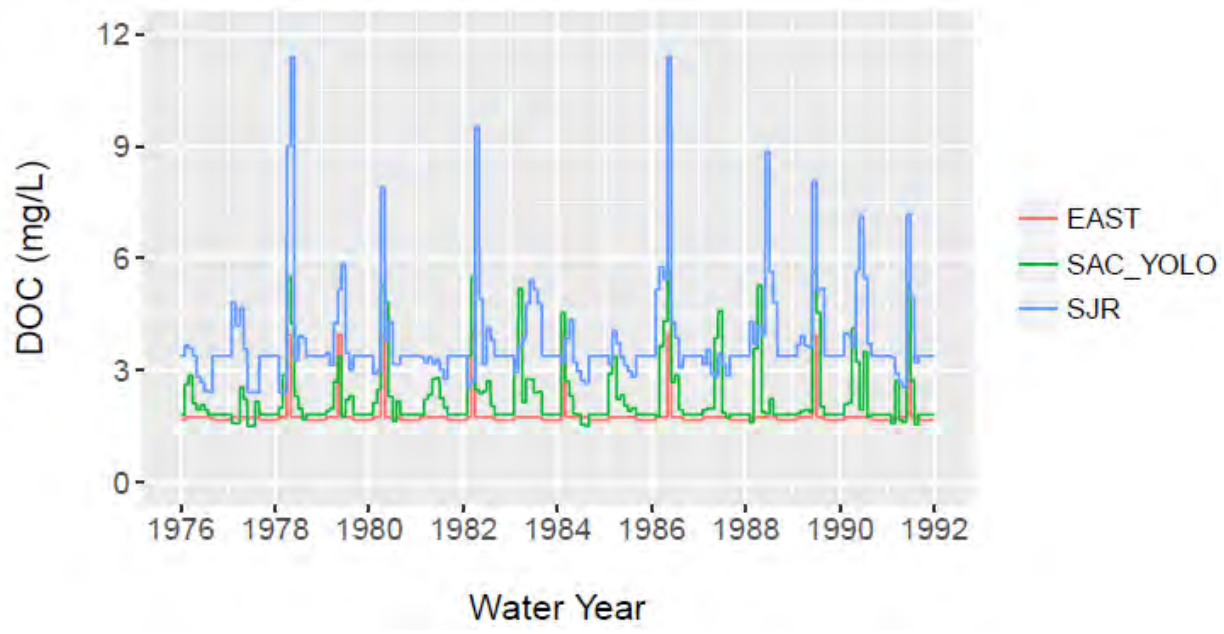

Figure 15 Dissolved organic carbon (DOC) concentrations in Delta inflows (eastside streams (red), Sacramento River at Yolo Bypass (green), and San Joaquin River at Vernalis (blue), from DSM2 model input files.

As noted for other water quality constituents, presentation of model results in the form of monthly averages is insufficient to determine the impacts of the WaterFix project on a drinking water operator such as the City of Stockton. Even so, DWR-652 indicates that "long-term average DOC concentrations for some interior Delta locations are predicted to increase by as much as 0.2 mg/L," and even greater increases can be expected on shorter timescales.

Opinion 5: DWR's conclusions that the WaterFix project will not impact the frequency or magnitude of *Microcystis* blooms in the future are unfounded. Our analysis indicates that the WaterFix project increases the likelihood of *Microcystis* blooms in the future.

5.1: DWR oversimplifies the multiple factors which interact to promote the formation of *Microcystis* blooms within the Delta.

Formations of blooms of *Microcystis* and other cyanobacteria are the result of multiple competing factors (see Figure 16), all of which combine to alter the likelihood of bloom formation. As no comprehensive models are available to model bloom formation for the Delta[42], the potential effects of WaterFix must be evaluated by looking at changes in the major controlling factors that may be induced by the WaterFix project, with the understanding that any of the controlling factors may be limiting at a given time in a given location.

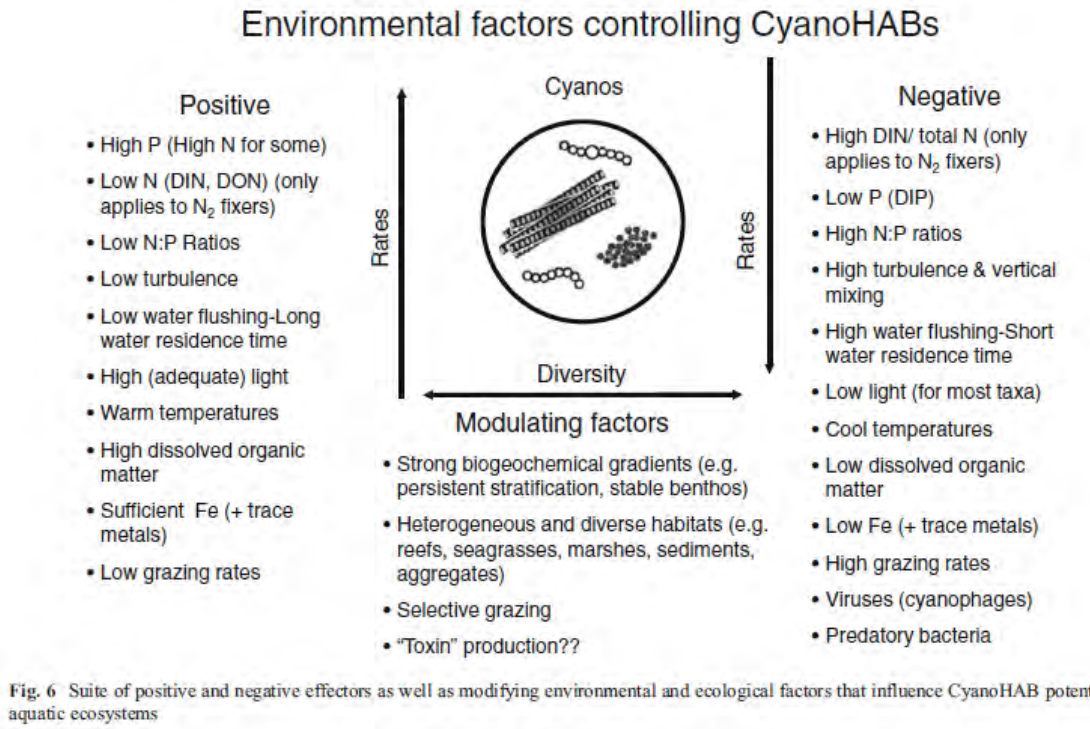

Figure 16 Factors affecting CyanoHAB potentials in aquatic ecosystems, reproduced from Figure 6 of Paerl and Otten (2013)

[42] See DWR-653 at p. 8, and Mioni et al. (2011).

DWR-653 identifies:

> "five primary environmental factors that trigger the emergence and subsequent growth of Microcystis in the water column of Delta waters, which are: 1. Water temperatures >19°C (66.2°F), 2. Low flows and channel velocities resulting in low turbulence and long residence times, 3. Water column irradiance and clarity >50 micromoles per square meter per second (μmoles/m^2/s), 4. Sufficient nutrient availability (nitrogen and phosphorus), and 5. Salinity below 10 ppt."[43]

These five factors are generally consistent with lists of cyanobacterial controls reported in the literature. For example, Berg and Sutula (2015) identify "favorable salinity, ample supply of nutrients, calm water and stratified conditions, plenty of irradiance and warm water temperatures"[44] as factors influencing cyanobacterial blooms.

Mioni et al. (2011) state, "The literature suggests that the success of cyanobacteria is a result of complex and synergistic environmental factors rather than a single dominant variable."[45] For *Microcystis* blooms to occur, all of these factors must be favorable. However, DWR rebuttal testimony treats velocity as the primary controlling factor, when it indirectly may affect these five factors. Additionally, "low turbulence and long residence times" should be treated separately, as one affects growth and the other accumulation. Low turbulence is likely an indirect factor, as turbulence can increase mixing, which in turn may alter nutrients, light, temperature, etc. Longer residence times increase accumulation (which is the difference between cell input due to flow and growth and cell output due to death and flow out), which is necessary for bloom formation.

Overall, an analysis of the factors that are important to controlling *Microcystis* blooms should take the approach that multiple factors are required for a bloom (temperature, light, nutrients, residence time, salinity), and each of these can be limiting in a particular circumstance. Changes in Delta hydrodynamics that remove a limiting factor (e.g., an increase in residence time, which will increase accumulation) will increase the likelihood of a bloom occurring, even though a bloom will not occur 100% of the time that change is applied, because other factors may be limiting.

DWR's focus on velocity as the controlling variable for *Microcystis* blooms[46] is an oversimplification, as the effects of velocity on *Microcystis* bloom formation are indirect and may occur via multiple pathways associated with the five factors discussed above. For example, in one system, an increase in velocity may result in the loss of water column stratification,

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[43] DWR-653 at p. 3.

[44] Berg and Sutula (2015) at p. 21.

[45] Mioni et al. (2011) at p. 2.

[46] DWR-653, p. 12-30.

resulting in mixing of *Microcystis* below the euphotic zone, resulting in reduced growth and/or a competitive disadvantage due to light limitation,[47] while in a well-mixed system that was not stratified in the first place, the same change in velocity could have little effect on the *Microcystis* growth rate. In my experience in the Delta, the water column is not strongly stratified, thus removing one of the major mechanisms for velocity changes to inhibit growth of *Microcystis*.

A change in velocity will not have the same effect on *Microcystis* growth in all water bodies, because of the differing physical and ecological characteristics of each system. Any analysis of the effects of velocity on *Microcystis* bloom formation needs to consider each of these factors separately, because, as noted above, not all apply to all locations within the Delta.

5.2: DWR's testimony has improperly conflated channel velocity with residence time. Our analysis indicates that the overall velocity regime of the Delta is unlikely to change in the future, but residence times will increase with the WaterFix project.

DWR asserts that "Insufficient residence time (due to high channel velocities) results in what cells are produced being flushed from the area before a "bloom" can form, and high velocities result in turbulent, well mixed channel flows where cyanobacteria generally cannot out-compete green algae or diatoms."[48] DWR further describes velocity as being important "regardless of direction of flow" "because it is not the volume of water moving through a channel, but rather the velocity with which the water moves that most affects the ability of cyanobacteria to out-compete other algae."[49]

As discussed in Section 5.1, treating velocity as the single or primary controlling factor for *Microcystis* blooms confuses effects that are related to growth (e.g., mixing) with those related to accumulation (e.g., residence time). Opinion 1 demonstrates that DWR's focus on maximum channel velocities, or on the probability of exceedance for 15-minute absolute velocities, yields no useful information regarding the residence time of water in the Delta, because maximum velocities and absolute values of velocity are unrelated to residence time in a "sloshing" tidal system. Rather, if DWR had wanted to use velocity as a surrogate for residence time, DWR should have used the tidally- or daily-averaged velocity, which is much lower than the maximum channel velocity throughout most of the Delta.

In fact, as discussed in Opinion 1, the net channel velocity near Stockton's intake is low, indicating low rates of flushing, and the WaterFix project is expected to lead to significant

[47] Mitrovic et al. (2003), Paerl and Otten (2013).

[48] DWR-653 at p. 31-32.

[49] DWR-653 at p. 12.

increases in residence time within the Delta. Thus, I conclude that DWR's testimony is fundamentally incorrect.

5.3: Because of the complex and indirect nature of velocity effects on *Microcystis* growth and accumulation, DWR's application of very limited "critical velocities" from the literature to predict effects of the WaterFix is inappropriate.

To analyze the effect of velocity on *Microcystis* bloom formation, DWR compares daily maximum velocities with channel velocities associated with bloom prevention and/or disruption in other systems and in other types of systems. DWR states:

> "The analysis presented below focuses on how the CWF would affect daily maximum velocity and 15-minute absolute velocity (regardless of direction) in channels of the Delta. Daily maximum velocity is assessed because the Delta channels are tidal and thus flows are slowed, and can reverse direction in most channels daily, on the tidal cycle. As such, mathematical daily average velocity may approach zero when flows on the tidal cycle move in opposite directions, and thus is not very useful for determining how channel velocity affects cyanobacteria. In such tidally influences [sic] channels, daily maximum velocity and 15-minute absolute velocity (regardless of direction) are the parameters that best characterize the degree of channel mixing that occurs daily."[50]

Opinion 1 details the concerns with DWR's use of the daily maximum velocity and the 15-minute absolute velocity; in sum, DWR's use of these parameters fails to capture the "sloshing" nature of tidal flows in the Delta and DWR's analysis of velocity cannot be used to characterize flushing or residence time.

In evaluating *Microcystis* effects, DWR compares the average velocities discussed above to "critical velocities" obtained from several studies reported in the literature. The limited literature on critical flow velocities that is used for the detailed velocity analysis[51] is from only two systems, both of which are different from the Delta in important ways:

1. Lower Darling River, Australia. In this freshwater system, which is a nutrient-limited Australian river with seasonal flow controlled by a series of weirs and without tidal effects, two studies evaluated how changes in river velocity altered blooms of *Anabaena circinalis*. The studies found a "critical flow velocity of 0.03 m/s to suppress the formation of persistent thermal stratification in the weir pool" with an order of magnitude higher velocity (0.3 m/s) required to disrupt an already

[50] DWR-653 at p. 13.

[51] DWR-652 at p. 12-30.

formed bloom.[52] In some cases, the reported velocities were required to be sustained for days to be effective.[53]

2. Zhongxin Lake, China. Investigators set up a series of mesocosms with artificial flow in this Chinese lake. These experimental chambers were 1.5 x 0.4 x 1.5 m enclosures in which water circulated continuously. Flow was not tidally influenced and was controlled by submerged pumps that the authors suggest may have contributed additional turbulence and potentially caused cell damage.[54] Changes in cyanobacterial survival were seen in flowing water compared to still water, but the authors noted that changing temperatures may have controlled the shift in dominant phytoplankton in the experiments.[55] The critical flow velocity of 0.06 m/s reported by Zhang et al. was based on an overall decrease in phytoplankton abundance with an associated increase in periphyton, not a specific community shift away from *Microcystis*.[56]

Both of these systems differ in important ways from the tidally influenced Delta. In the case of the Lower Darling River, Mitrovic's interpretation of critical velocity was associated with the disruption of thermal stratification[57], which is not expected to be significant in the Delta.[58] In addition, Mitrovic's studies were based on an organism that is not *Microcystis*. *Anabaena* is a nitrogen-fixing cyanobacteria with a different colony morphology than *Microcystis*[59], and *Anabaena* may be differently suited to environmental conditions.[60] In the case of Zhongxin Lake, the mesocosms were closed systems operated for a short period of time with no replacement of the water, and the critical velocity was interpreted as a combination of changes in turbidity due to suspended sediments and a loss of phytoplankton due to damage from the pumps.[61] Both Li et al. and Zhang et al. noted that there may not be a universal critical flow rate applicable to all systems.

Microcystis blooms currently occur in the Delta, despite the fact that flow in the Delta routinely exceeds the "critical velocities" cited in DWR-653, and despite the lack of significant stratification in the water column.[62] The presence of *Microcystis* blooms currently thus suggests

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[52] Mitrovic et al. (2003), Mitrovic et al. (2011).

[53] Mitrovic et al. (2011).

[54] Li et al. (2013).

[55] Li et al. (2013).

[56] Zhang et al. (2015).

[57] Mitrovic et al. (2011) at p. 237-238.

[58] Lehman et al. (2017).

[59] Reynolds et al. (1987).

[60] Mitrovic et al. (2011).

[61] Li et al. (2013); Zhang et al. (2015).

[62] Lehman et al. (2017).

that either the use of maximum channel velocities misses a critical component of the Delta hydrology which allows for blooms, or that the critical velocities in the Delta are higher than those reported in other systems. In fact, as noted above, Li et al. (2013) state, "The present study highlights that a universal critical velocity for suppressing algae growth probably does not exist in freshwater bodies, for each has its unique physical, chemical and ecological characteristics."[63]

DWR's testimony emphasizes the importance of using site-specific models to predict *Microcystis* blooms in the Delta: "Moreover, by the above-cited statement, he [Mr. Ringelberg] also acknowledges that we cannot simply apply a model developed for the Potomac River to the Delta, but rather have to develop Delta specific models."[64] Yet the critical velocities cited in the testimony are not based on studies of the Delta.

The DWR testimony argues that the role of velocity in controlling *Microcystis* is through mixing: "Because all algae present are mixed from the channel surface to bottom in turbulent flowing water, *Microcystis* cells cannot control their location in the water column and thus cannot as readily, if at all, form the dense collection of cells and colonies at the water's surface as occurs in calm waters."[65]

As discussed above, mixing throughout the water column is only one mechanism by which velocity affects *Microcystis*. Turbulence which causes mixing to depth may be less important in shallow areas where the euphotic zone reaches the sediment. This is supported by studies of mixing as a mitigation measure in freshwater lakes: "A change in composition from cyanobacterial dominance to green algae and diatoms can be observed if the imposed mixing is strong enough to keep the cyanobacteria entrained in the turbulent flow, the mixing is deep enough to limit light availability and the mixing devices are well distributed horizontally over the lake."[66] However mixing to prevent stratification is only a reasonable method to inhibit blooms if stratification is present in the first place: "stratification is probably less important in SFE [San Francisco Estuary], where a combination of tide, current and wind mix the water column daily."[67]

Based on the lack of a relevant critical velocity threshold and the existence of *Microcystis* blooms in the current condition (under which DWR argues that conditions for blooms are unfavorable), DWR's detailed analyses comparing the various scenarios to the two literature values noted above are not conclusive and seem misguided.

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63 Li et al. (2013) at p. 64.

64 DWR-653 at p. 8.

65 DWR-653 at p. 12.

66 Visser et al. (2016).

67 Lehman et al. (2017).

5.4: DWR's testimony acknowledges the effect of residence time on the potential for *Microcystis* accumulation, but suggests that because residence time is insufficient to cause a bloom it is unimportant. This is inconsistent with known controls on bloom formation and DWR's testimony on bloom formation in the Delta.

DWR appears to deemphasize the potential role of increased residence time on the formation of *Microcystis* blooms, instead focusing on factors which change the *Microcystis* growth rate:

> "Hydraulic residence times may increase in parts of the southern and central Delta for the CWF, relative to the NAA. Increased residence time provides the opportunity for cyanobacteria to accumulate in areas. However, other factors such as daily in-channel absolute velocities, turbulence, and mixing; competition with other algal species; and grazing losses to zooplankton, fish, and clams exert their own effects on cyanobacteria accumulation… Hence, greater residence time provides the opportunity for cyanobacteria to accumulate in areas of the Delta, without getting flushed from the area, but because of the other factors identified above that also affect the ability of cyanobacteria to accumulate in areas, a given magnitude increase in residence time will not always equate to a given magnitude increase in bloom size, or an increase in bloom size at all."[68]

DWR also asserts that "Additional *Microcystis* research would be needed before definitive determinations regarding how modeled changes in residence time caused by the CWF would affect the magnitude of *Microcystis* blooms in the Delta can be made."[69]

As summarized in Opinion 1, Exponent in STKN-026 calculated residence times and showed significant increases in residence time in the Delta as a result of WaterFix, which could result in an increase in *Microcystis* blooms. Exponent agrees with DWR that residence time is only one of several limiting factors which need to be favorable for *Microcystis* blooms, but it is important to distinguish between "does not cause" and "necessary but not sufficient." *Microcystis* blooms will always depend on multiple factors. Temperature, nutrients, and irradiance affect the growth rate of *Microcystis*. Changes in residence time affect accumulation (see Opinion 5.2). Having sufficient residence time will always increase the likelihood of a bloom compared to a case where the residence time is insufficient.

Similarly, DWR focuses on the fact that an increase in residence time is not an absolute predictor of a *Microcystis* bloom: "Long residence time does not always translate into large

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[68] DWR-653 at pp. 31, 33.

[69] DWR-653, at p. 31.

Microcystis blooms."[70] For example, DWR cites a study by Spier et al. (2013) which looked at a 2012 bloom in an area of the Delta with a "long residence time," but no bloom in other years with similar residence times. Spier et al. (2013) discuss other parameters which differ between the years and which may have prevented bloom formation in the Delta in 2009 and 2011. DWR's testimony focuses on the finding of Spier et al. (2013) that residence time alone cannot predict blooms, but it misses the equally important point that greater residence time makes blooms more likely.

DWR implies that since residence times may change with WaterFix only in areas where *Microcystis* blooms already form, no increase in the number of blooms would be seen: "Hence residence times beyond the minimum required for bloom initiation (e.g., increased residence times in areas where blooms have historically occurred) primarily affects how much biomass a bloom can accumulate in an area after a bloom has initiated."[71] This is incorrect. An increase in residence time can lead to greater accumulation in the absence of other changes. In addition, as shown in STKN-026, residence times would increase throughout the Delta due to WaterFix, including in areas where *Microcystis* blooms do not currently form. If residence time were the factor limiting bloom initiation and formation in those areas, it would be possible for a change in residence time to trigger a bloom where one may not have formed in the past, assuming all other parameters stayed constant. Finally, changes in the intensity of a bloom (which could be driven by increased residence times) can be significant. *Microcystin* toxin concentrations generally increase with *Microcystis* biomass (though not linearly), and larger blooms are more likely to produce toxin concentrations above relevant water quality guidelines.[72]

DWR's rebuttal testimony implied that changes in Delta residence times that are smaller than those discussed in Lehman et al. (2017) are not significant:

> "The Lehman et al. (2017) study shows that very large reductions in flow (i.e., a factor of three lower) and associated very large increases in residence times can contribute to increased magnitude and duration of *Microcystis* blooms because the cells and colonies are not being flushed from the area as rapidly as would occur with lower residence times, and thus they accumulate in an area over time."[73]
>
> "As shown in Section 4.2 of this report, the effects of CWF on channel velocities in the Delta is small compared to the large three-fold reduction in flow and commensurate

[70] DWR-653 at p. 32.

[71] DWR-653 at p. 32.

[72] Rinta-Kanto et al. (2009). Kaardinal and Visser (2005)

[73] DWR-653 at p. 32.

effects to velocity and residence time observed between 2014 and other years, where large effects on *Microcystis* were observed."[74]

DWR's testimony appears to misrepresent the results reported in the Lehman et al. (2017) study, which did not suggest that a three-fold flow reduction was required to "contribute to increased magnitude and duration of *Microcystis* blooms." Rather, Lehman et al. (2017) showed that a larger increase in residence time resulted in a larger bloom (see above). The more modest changes in flow in other reported years also showed a change in *Microcystis* concentration.[75] Small changes in residence time may be important and should not be dismissed without consideration.

Because Exponent's analysis has showed that up to a 37% increase in residence time in the Delta can be expected to occur as a result of the WaterFix project (see Opinion 1.1 and STKN-026), and because the increases in residence time occur during warm months (see also Opinion 5.5), I conclude that the likelihood of *Microcystis* blooms will increase as a result of the WaterFix project.

5.5: Because temperature is considered an important controlling factor for *Microcystis* growth and bloom occurrence in the Delta, it is important to consider temperature on appropriate time and spatial scales when predicting the effect of the WaterFix on the Delta.

DWR's testimony acknowledges the strong influence that temperature has on *Microcystis* bloom formation: "Although other factors (nutrients, surface irradiance) generally become sufficient for *Microcystis* growth between March and June, water temperature is generally the limiting factor that prevents Microcystis formation in the Delta until water temperatures exceed 19°C, which typically does not happen until June (Lehman et al. 2013)."[76] Other studies have also found a strong control of temperature on *Microcystis* growth in general[77] and in the Delta: "Because of the large effects of temperature and irradiance on accelerating, and decelerating, the growth rates of cyanoHABs, these two factors appear to exert key roles in the regulation of the onset of blooms."[78]

However, the lack of detail in DWR's temperature analysis prevents drawing any conclusions regarding potential effects of temperature changes on *Microcystis* blooms at specific locations in

[74] DWR-653 at p. 32.

[75] Lehman (2017).

[76] DWR-653 at p. 10.

[77] Berg and Sutula (2015), Reynolds (2006), Robarts and Zohary (1987), Mioni et al. (2011).

[78] Berg and Sutula (2015) at p. 48.

the Delta. Specifically, DWR-653 presents long-term monthly average simulated temperatures for the 16-year simulation period as a whole and for various water year types. DWR-653 does not present shorter-term (e.g., daily) simulated temperatures. DWR-653 also presents simulated temperatures for only two scenarios: the NAA and the PA (Preferred Alternative, or Alternative 4A). DWR did not simulate temperatures for the Boundary 1 or Boundary 2 scenarios, or for additional scenarios evaluated in DWR-653 and in the FEIR/EIS. Finally, DWR did not (to my knowledge) provide the DSM2 model output used to calculate the long-term average monthly temperatures, and DWR did not provide model output or temperature analysis for the location of Stockton's intake.

Despite these shortcomings, DWR's analysis indicates that monthly average water temperatures will increase for the PA relative to the NAA, particularly in warm weather months. For example, DWR-653 indicates that "Modeling shows that for the full simulation period (1922-2003), the period mean temperatures in the San Joaquin River at Prisoners Point for the CWF would be up to 0.1°C (0.18°F) higher than that modeled for the NAA for each month of the May through October period of the year… In September, the modeled maximum mean monthly temperature for the CWF would be about 0.3°C (0.6°F) higher than that modeled for the NAA..."[79] The increases in water temperature on shorter timescales, and in different year types, are expected to be higher than the long-term average temperature increases.

DWR's model analysis indicates that long-term average temperatures will increase as a result of the WaterFix project. Further, these increases in temperature will occur in the warmer months of the year, when the residence time of water in the Delta will also increase as a result of the WaterFix project (see Opinion 1.1 and STKN-026). Thus, I conclude that the likelihood of *Microcystis* blooms in the Delta will increase as a result of the WaterFix project.

[79] DWR-653 at p. 35.

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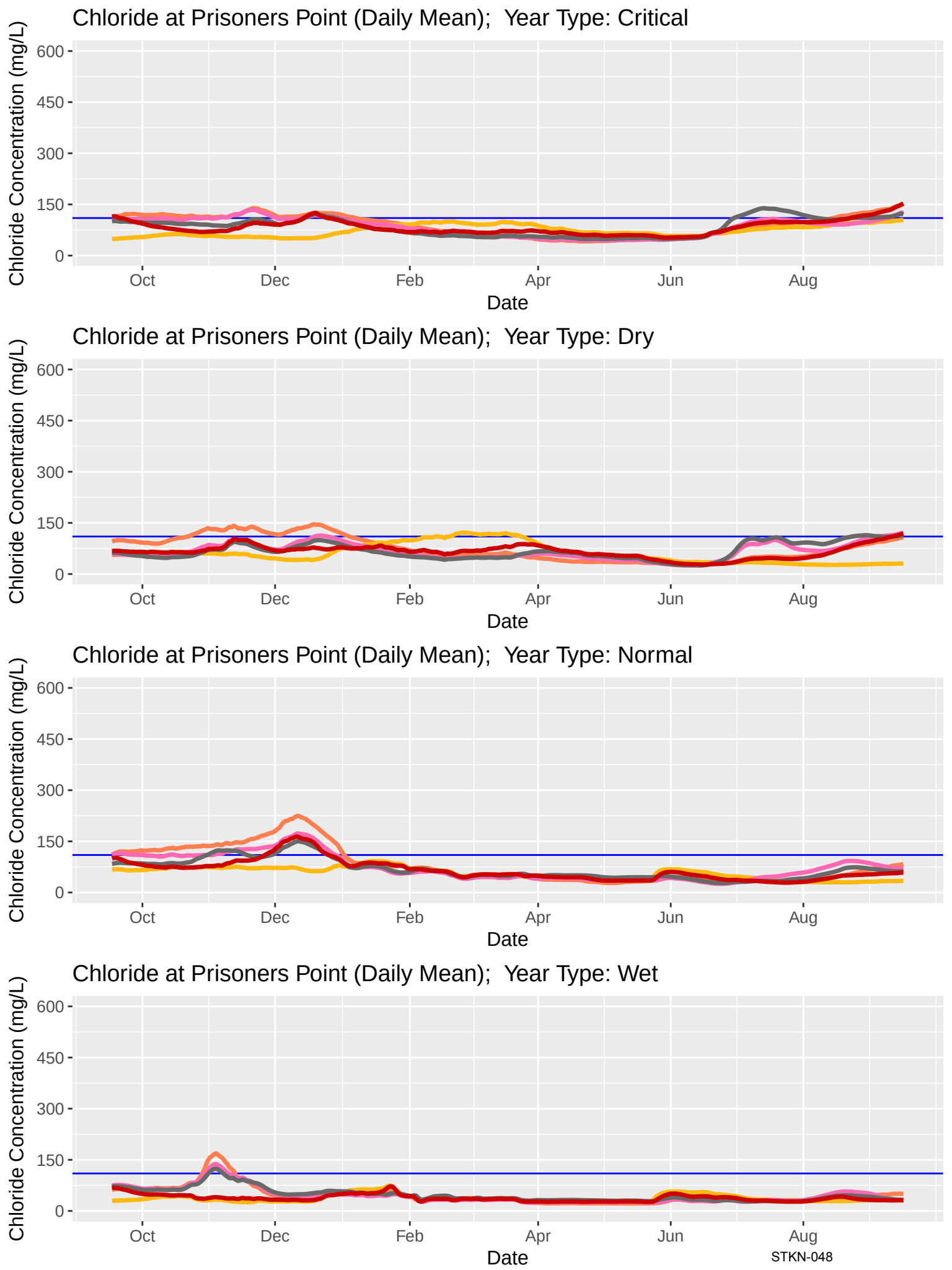
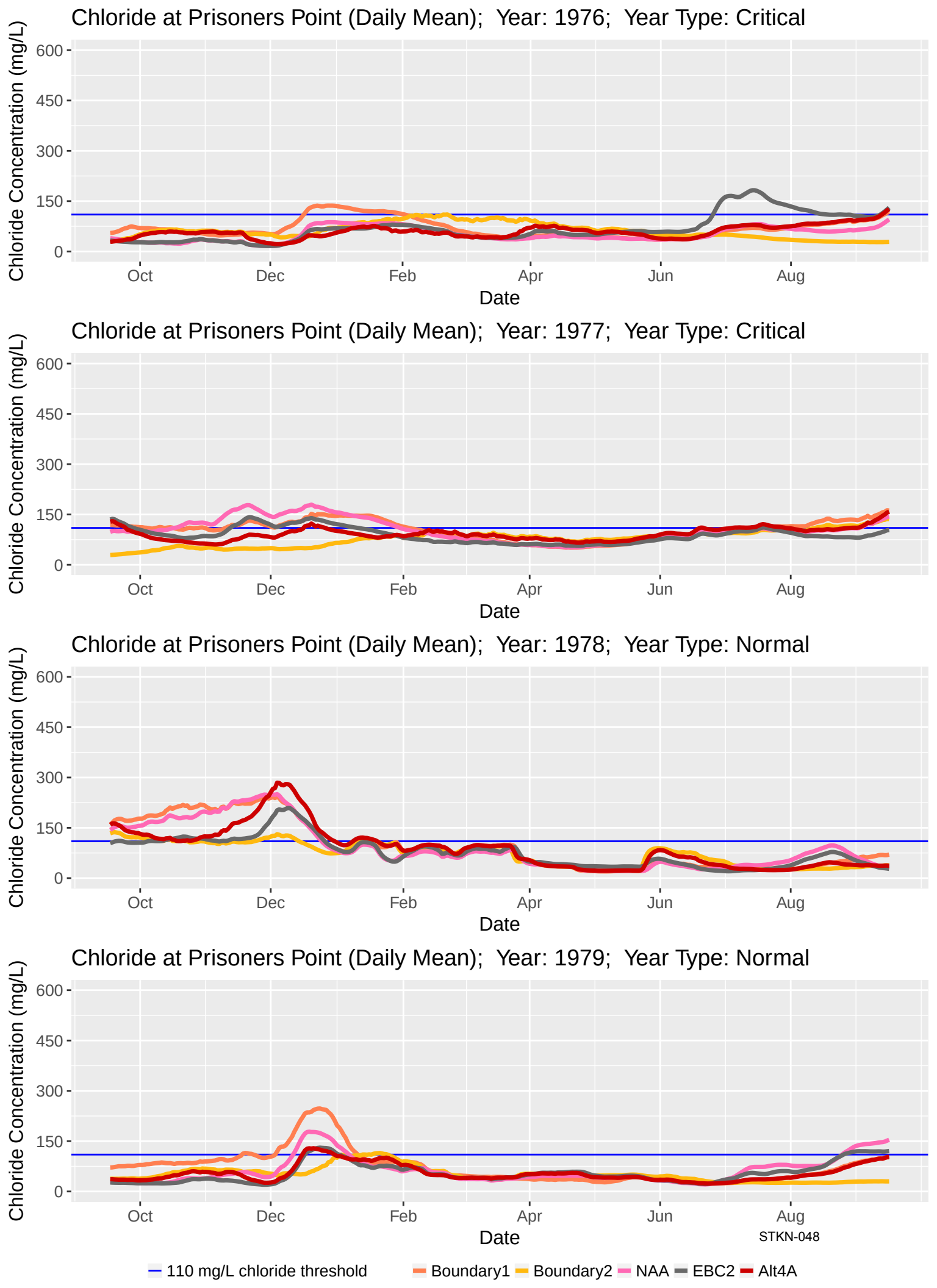
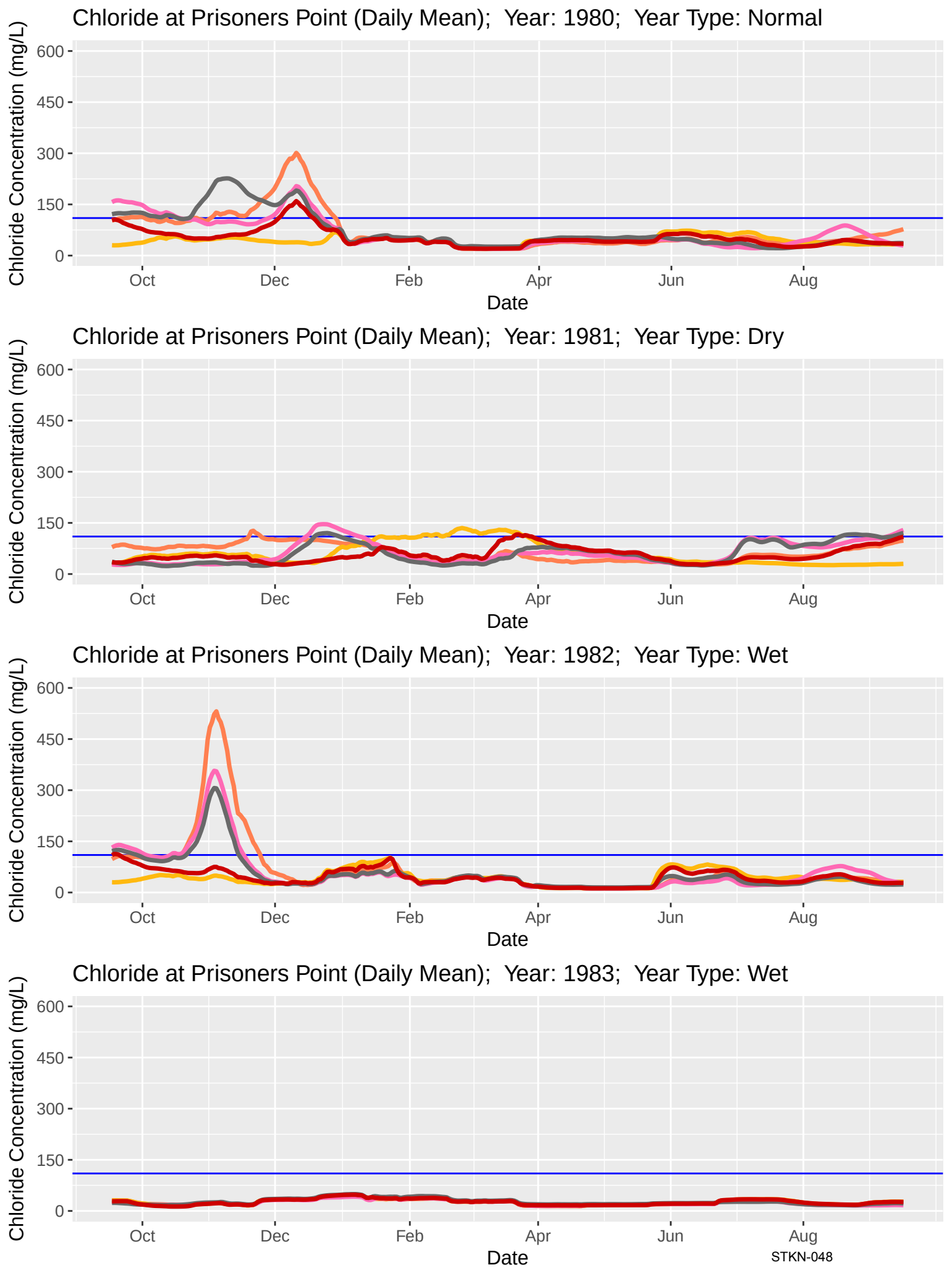
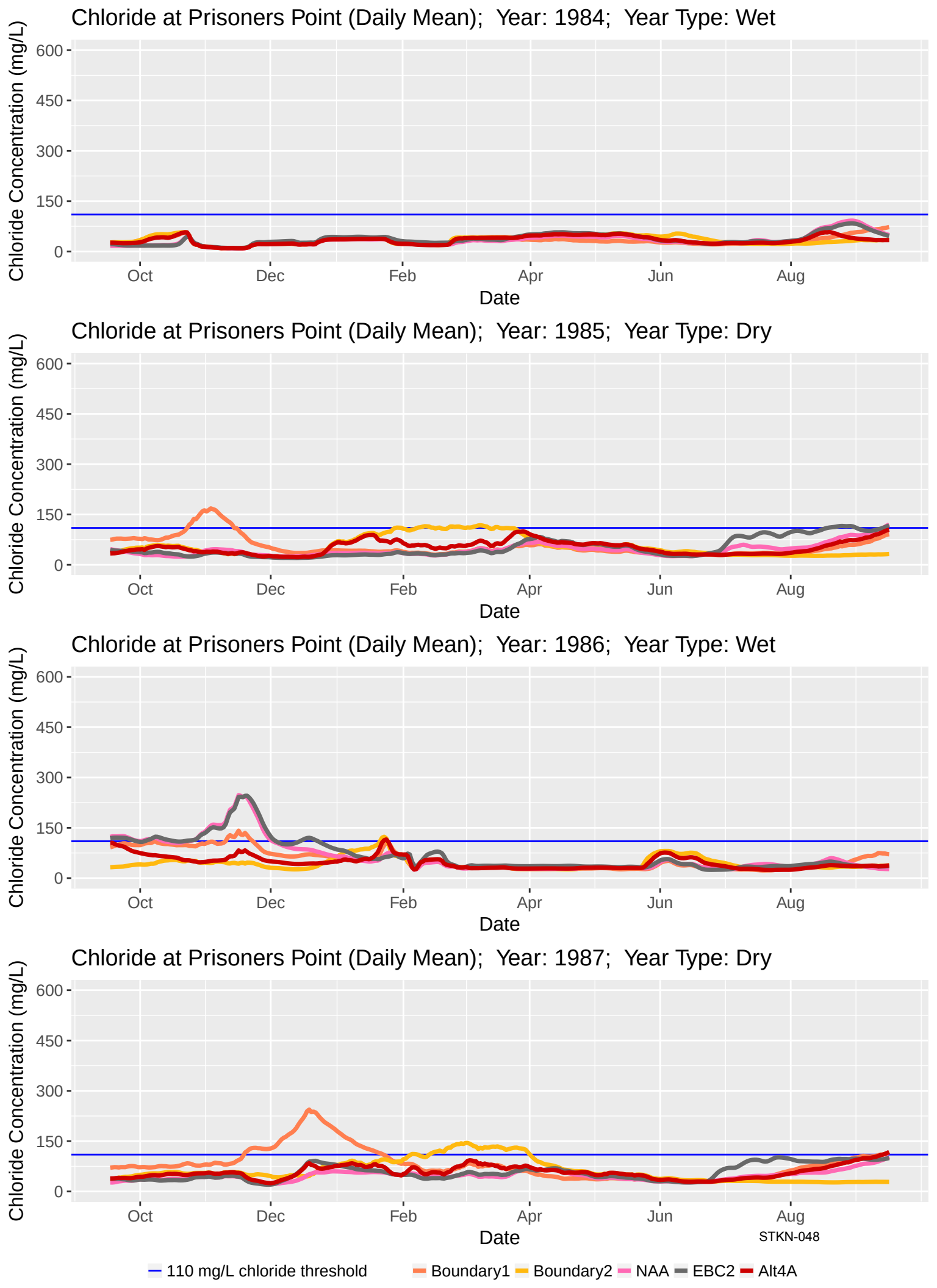
Appendix A

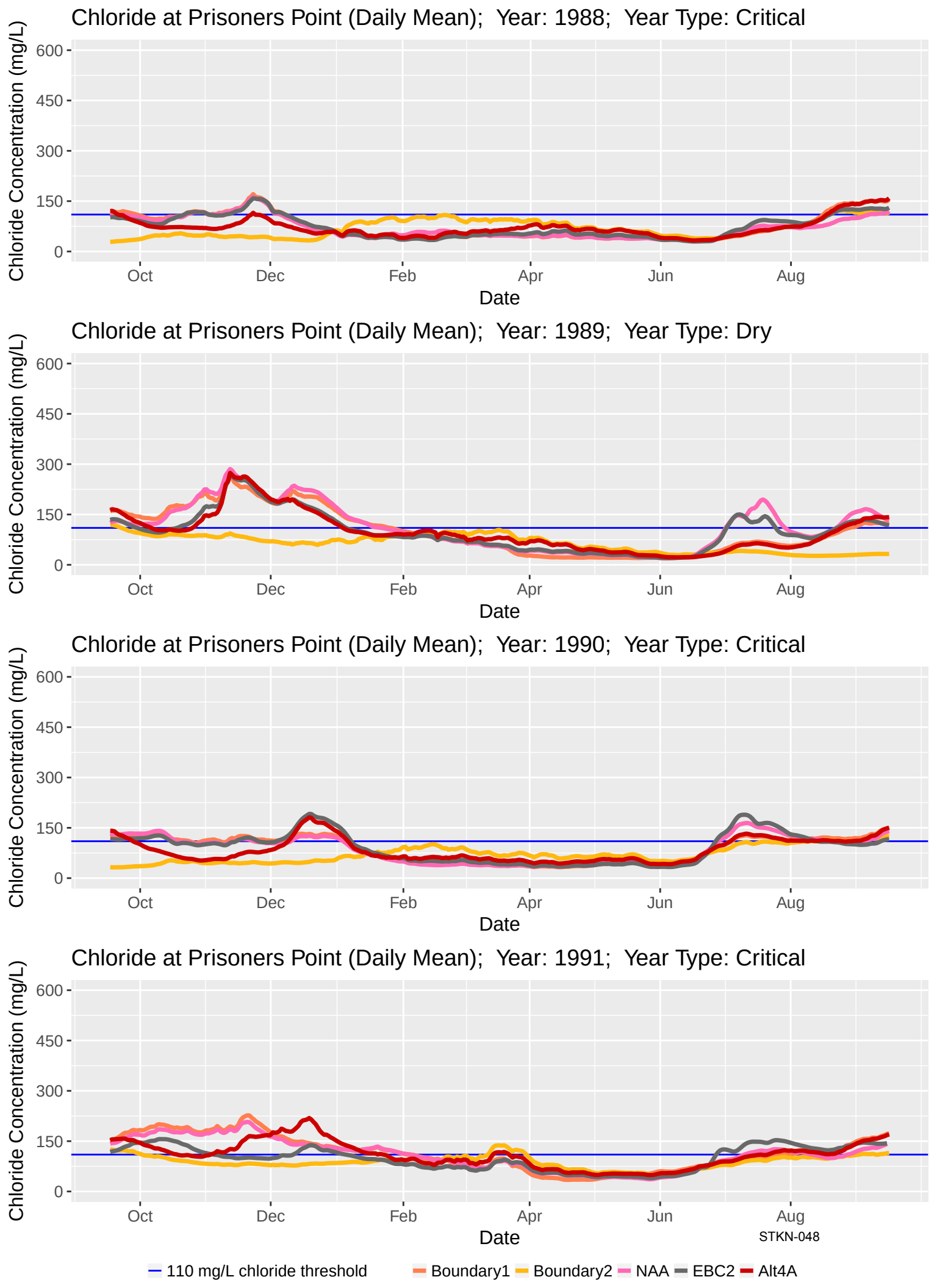
Additional DSM2 Salinity and Fingerprinting Results at Prisoner's Point

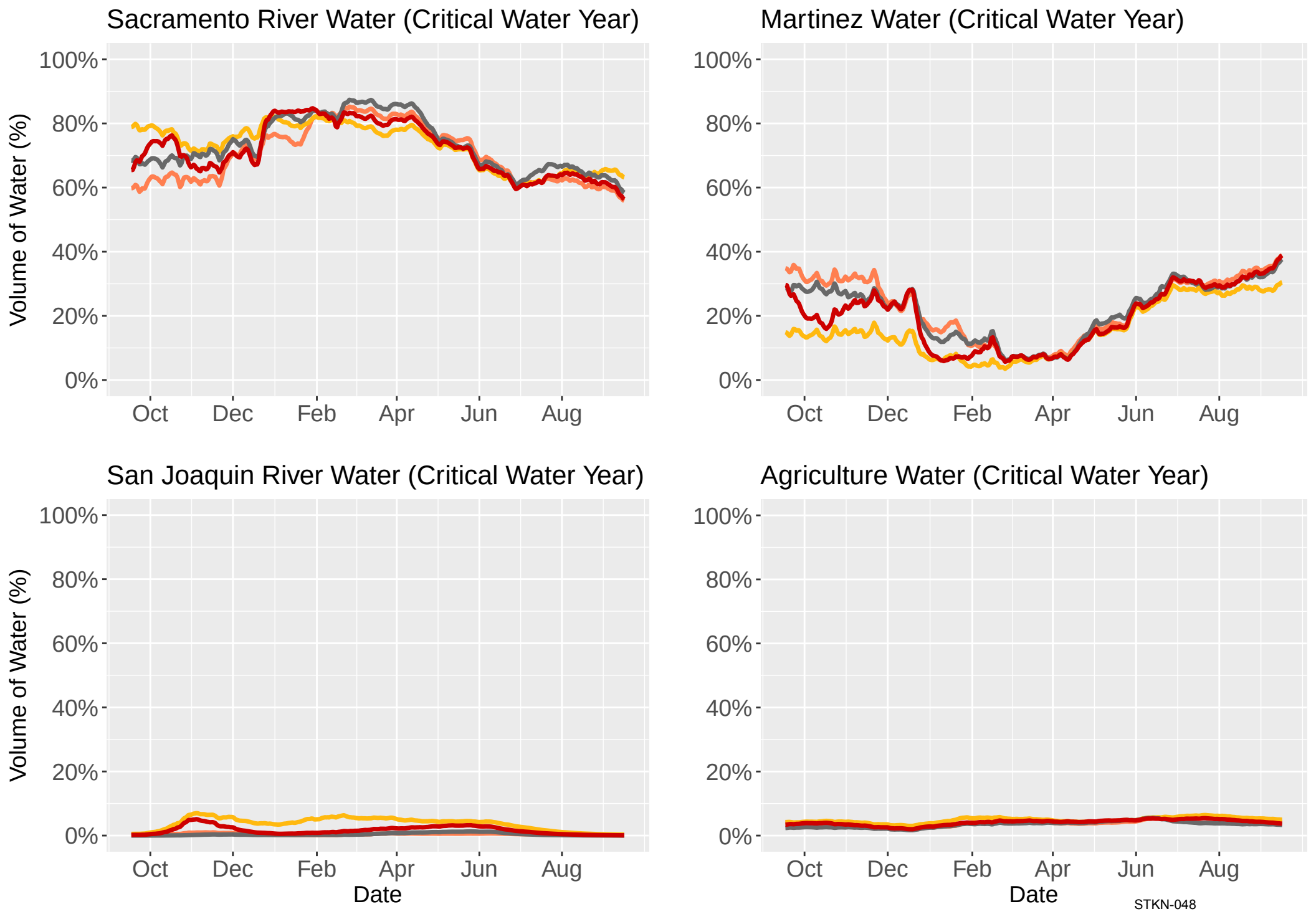

Chloride at Prisoners Point (Daily Mean); Year Type: Critical
Chloride Concentration (mg/L)
600
450
300
150
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Prisoners Point (Daily Mean); Year Type: Dry
Chloride Concentration (mg/L)
600
450
300
150
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Prisoners Point (Daily Mean); Year Type: Normal
Chloride Concentration (mg/L)
600
450
300
150
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Prisoners Point (Daily Mean); Year Type: Wet
Chloride Concentration (mg/L)
600
450
300
150
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
STKN-048
110 mg/L chloride threshold
Boundary1
Boundary2
NAA
EBC2
Alt4A

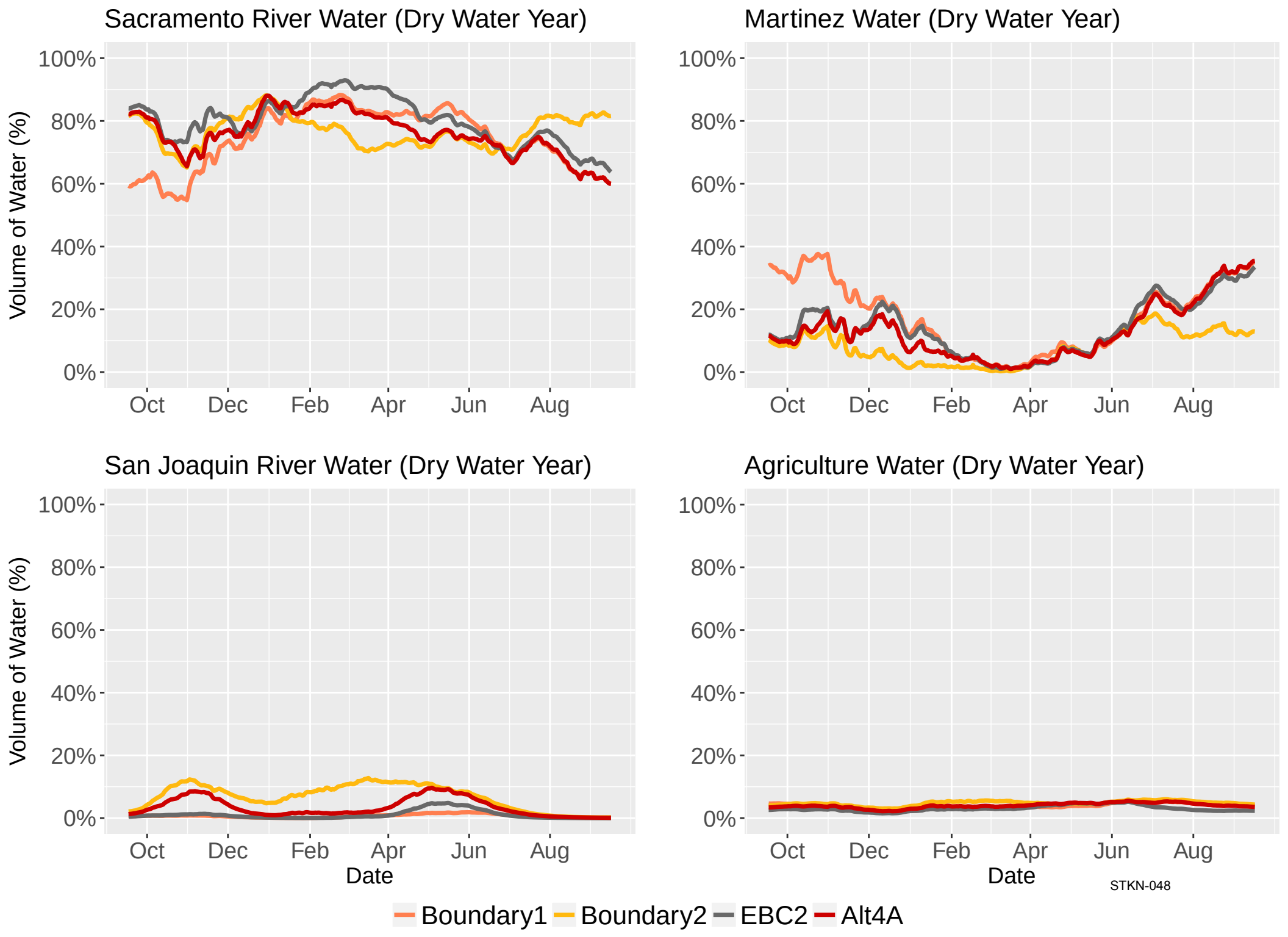

Chloride at Prisoners Point (Daily Mean); Year: 1976; Year Type: Critical
Chloride Concentration (mg/L)
600
450
300
150
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Prisoners Point (Daily Mean); Year: 1977; Year Type: Critical
Chloride Concentration (mg/L)
600
450
300
150
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Prisoners Point (Daily Mean); Year: 1978; Year Type: Normal
Chloride Concentration (mg/L)
600
450
300
150
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Prisoners Point (Daily Mean); Year: 1979; Year Type: Normal
Chloride Concentration (mg/L)
600
450
300
150
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
STKN-048
110 mg/L chloride threshold
Boundary1
Boundary2
NAA
EBC2
Alt4A

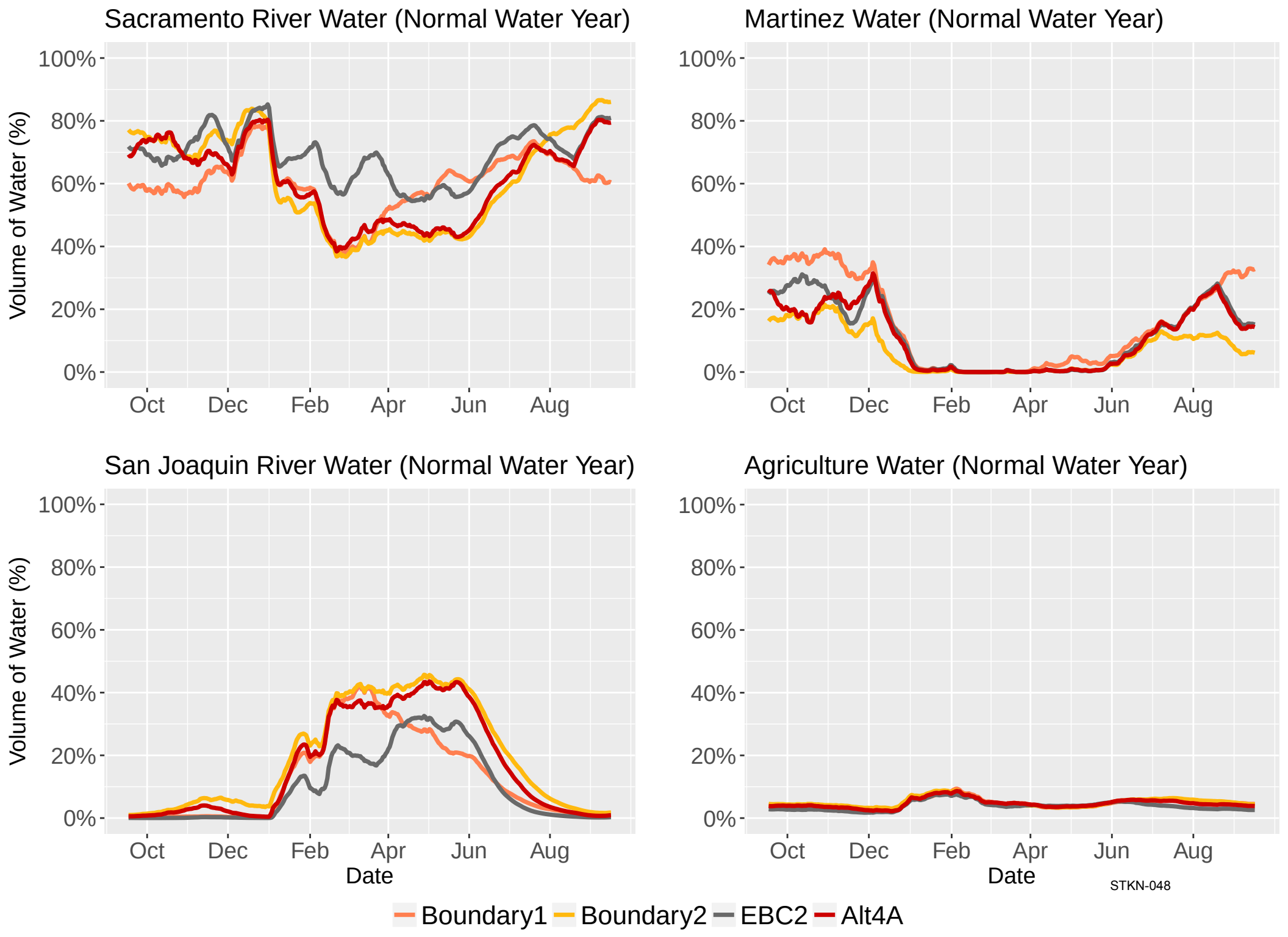

Chloride at Prisoners Point (Daily Mean); Year: 1980; Year Type: Normal
Chloride Concentration (mg/L)
600
450
300
150
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Prisoners Point (Daily Mean); Year: 1981; Year Type: Dry
Chloride Concentration (mg/L)
600
450
300
150
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Prisoners Point (Daily Mean); Year: 1982; Year Type: Wet
Chloride Concentration (mg/L)
600
450
300
150
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
Chloride at Prisoners Point (Daily Mean); Year: 1983; Year Type: Wet
Chloride Concentration (mg/L)
600
450
300
150
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
STKN-048
110 mg/L chloride threshold
Boundary1
Boundary2
NAA
EBC2
Alt4A

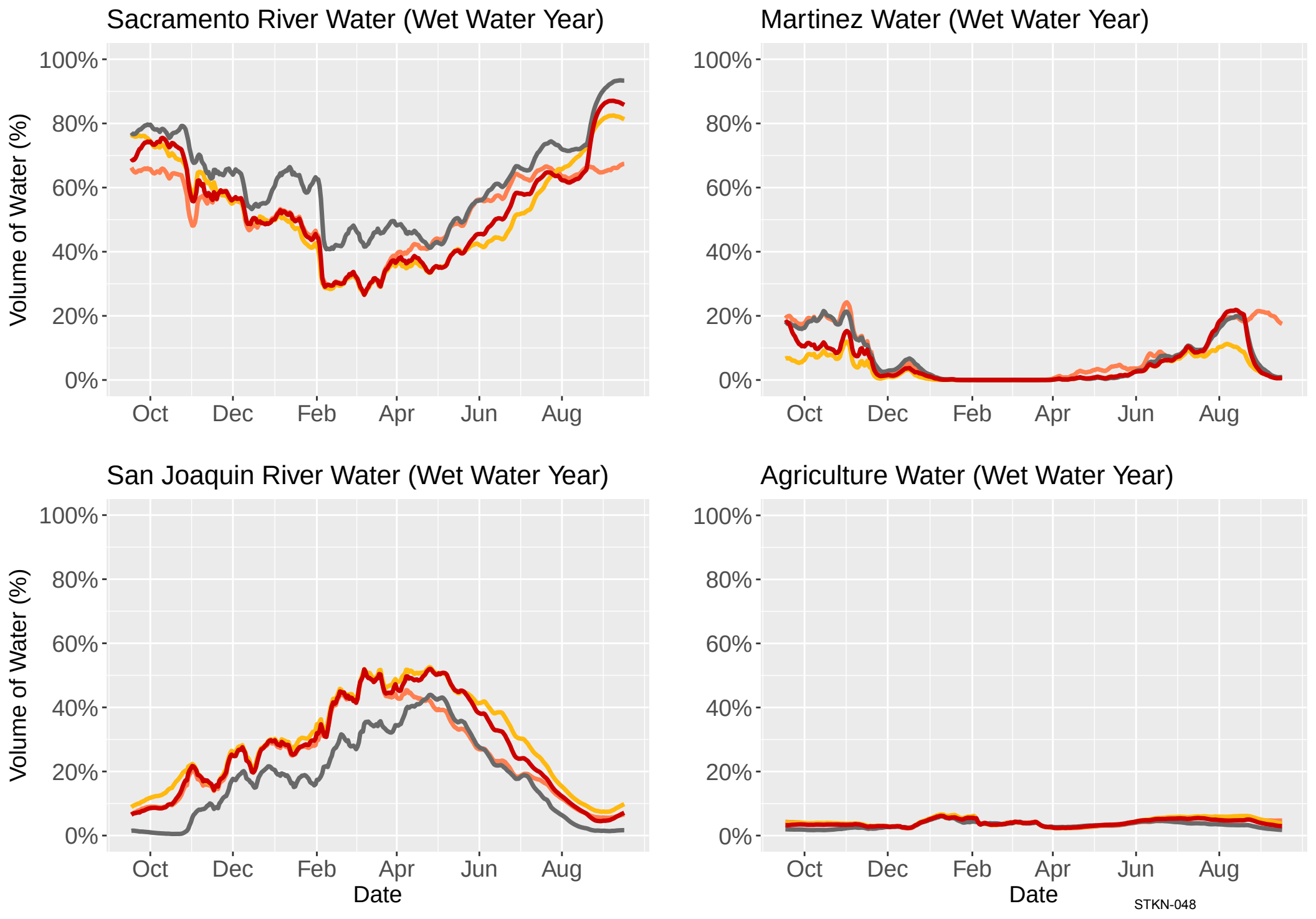

Chloride at Prisoners Point (Daily Mean); Year: 1984; Year Type: Wet
Chloride at Prisoners Point (Daily Mean); Year: 1985; Year Type: Dry
Chloride at Prisoners Point (Daily Mean); Year: 1986; Year Type: Wet
Chloride at Prisoners Point (Daily Mean); Year: 1987; Year Type: Dry
Chloride Concentration (mg/L)
600
450
300
150
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
STKN-048
110 mg/L chloride threshold
Boundary1
Boundary2
NAA
EBC2
Alt4A


Chloride at Prisoners Point (Daily Mean); Year: 1988; Year Type: Critical
Chloride at Prisoners Point (Daily Mean); Year: 1989; Year Type: Dry
Chloride at Prisoners Point (Daily Mean); Year: 1990; Year Type: Critical
Chloride at Prisoners Point (Daily Mean); Year: 1991; Year Type: Critical
Chloride Concentration (mg/L)
600
450
300
150
0
Oct
Dec
Feb
Apr
Jun
Aug
Date
STKN-048
110 mg/L chloride threshold
Boundary1
Boundary2
NAA
EBC2
Alt4A


Sacramento River Water (Critical Water Year)
Martinez Water (Critical Water Year)
San Joaquin River Water (Critical Water Year)
Agriculture Water (Critical Water Year)
Volume of Water (%)
100%
80%
60%
40%
20%
0%
Oct
Dec
Feb
Apr
Jun
Aug
Date
STKN-048
Boundary1
Boundary2
EBC2
Alt4A


Sacramento River Water (Dry Water Year)
Martinez Water (Dry Water Year)
San Joaquin River Water (Dry Water Year)
Agriculture Water (Dry Water Year)
Volume of Water (%)
100%
80%
60%
40%
20%
0%
Oct
Dec
Feb
Apr
Jun
Aug
Date
STKN-048
Boundary1
Boundary2
EBC2
Alt4A


Sacramento River Water (Normal Water Year)
Martinez Water (Normal Water Year)
San Joaquin River Water (Normal Water Year)
Agriculture Water (Normal Water Year)
Volume of Water (%)
100%
80%
60%
40%
20%
0%
Oct
Dec
Feb
Apr
Jun
Aug
Date
STKN-048
Boundary1
Boundary2
EBC2
Alt4A


Sacramento River Water (Wet Water Year)
Martinez Water (Wet Water Year)
San Joaquin River Water (Wet Water Year)
Agriculture Water (Wet Water Year)
Volume of Water (%)
100%
80%
60%
40%
20%
0%
Oct
Dec
Feb
Apr
Jun
Aug
Date
STKN-048
Boundary1
Boundary2
EBC2
Alt4A

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Katrina Harrison, Project Manager
Bureau of Reclamation, Bay-Delta Office,
801 I Street, Suite 140,
Sacramento, CA 95814–2536
Email: kharrison@ usbr.gov

Re: Scoping comments on Draft EIS on revisions to coordinated long-term operations of CVP and SWP

Dear Ms. Harrison:

Contra Costa County and Contra Costa County Water Agency has reviewed the December 29, 2017 Notice of Intent (NOI) To Prepare a Draft Environmental Impact Statement (EIS), Revisions to the Coordinated Long-Term Operation of the Central Valley Project (CVP) and State Water Project (SWP), and Related Facilities. The County has the following scoping comments regarding the EIS.

Contra Costa County is bounded on its western, northern and eastern sides by the San Francisco Bay and the Sacramento-San Joaquin Delta, and these natural features are the basis for not only the County's identity and quality of life but also our economic vitality. The availability of good quality water in the Delta is essential for municipal drinking water for the residents of Contra Costa County as well as agriculture, recreation, and industry in this region.

The future of Contra Costa County is closely linked to the health of the Sacramento-San Joaquin Delta. As a local agency responsible for land use, flood protection, and other services vital for protecting the Delta, Contra Costa County must have a key, decision-making role in developing any revisions to the way the Delta is operated.

The NOI states that "Reclamation will engage with California Department of Water Resources (DWR) and local stakeholders in developing the proposed action and reasonable alternatives." The County requests that the County and representatives of other Delta Counties, municipalities and water agencies have a seat at the table at these planning and development meetings.

Any proposal to increase exports from the Sacramento-San Joaquin Delta (Delta) has the potential to be a disaster for the Delta ecosystem, threatened and endangered fish species, the already degraded Delta water quality, and those living in or near the Delta that rely on the Delta for their water supply. The availability of good quality water in the Delta is essential for municipal drinking water for the residents of Contra Costa County as well as agriculture, recreation, and industry in this region.

Modifications to USFWS and NMFS Biological Opinions

The NOI states that Reclamation is going to review and consider modifications to regulatory requirements, including existing Reasonable and Prudent Alternative (RPA) actions identified in the Biological Opinions issued by the USFWS and NMFS in 2008 and 2009, respectively. The County requests that Reclamation take no action that will weaken the RPA actions. The abundance of endangered and threatened fish species in the Bay-Delta system have declined dramatically and it is clear that even the existing biological opinion protections are insufficient.

In addition, Reclamation and DWR have sought, successfully, to weaken these protections, such as the Fall X2 requirement and Old and Middle River minimum flows, on a temporary basis. At a time when DWR and Reclamation are petitioning for changes in their water rights to accommodate the California WaterFix proposed project, these arbitrary relaxations of project operating criteria do not instill any confidence among stakeholders and affected parties that WaterFix will be operated as promised.

The only modifications to existing regulatory requirements should be those that improve rather than degrade protections for the key fish species in the Bay-Delta system.

Project Area for Analysis

The EIS needs to analyze project impacts not only in the existing and proposed CVP and SWP service areas and the Sacramento and San Joaquin watersheds, but also needs to analyze impacts to the whole of San Francisco Bay and the coastal regions outside of the Golden Gate.

Joint Points of Diversion

The EIS needs to ensure that any proposed use of the SWP Banks Pumping Plant to export CVP water or the CVP Jones Pumping Plant to export SWP water does not occur unless there is full compliance with the State Water Resources Control Board's (SWRCB) Water Rights Decision 1641 (D-1641) standards, including water quality standards in the south and central Delta.

Other Stressors on Fish

The County agrees that it is useful to also evaluate other stressors on fish and implement other actions such as beneficial non-flow measures to decrease stressors and habitat restoration. However, these stressors are not well understood and in the short term should be used in addition to, not in place of flow-related measures. If, after a number of years, the non-flow measures eventually prove effective, modifications might be able to be made to flow requirements.

Alternatives to be Considered

DWR is proposing a conveyance-only WaterFix project to address current problems with the Delta. However, a major factor affecting the quantity of exports during periods of high Delta outflow is availability of storage in the south-of-the-Delta export areas. During wet periods (weeks or months),

San Luis Reservoir often fills before the Delta outflows subside and, because there is reduced demand for water during high rainfall periods in the export areas, diversions via Banks and Jones Pumping Plants reduce significantly. Such was the case in the wet winter of 2017. The EIS must consider ways to capture and export more water during periods of high Delta outflow (wet periods) and this cannot be achieved by a conveyance-only project. Reclamation should not consider actions that reduce protections for fish and increase exports for water supply when a joint storage-conveyance project would allow increased water supply (by capturing more water during wet months) and allow reduced exports during dry months when Delta outflows are very low and the Delta ecosystem is most vulnerable.

Note that while increased CVP storage capacity upstream of the Delta may help improve water supply reliability, that stored water will still need to be conveyed through the Delta and exported south-of-the-Delta. The current constraints on operations in the Delta to protect fish will continue to make it difficult to convert stored water upstream of the Delta into south-of-Delta deliveries.

Reclamation and DWR should not claim they do not have enough water to help achieve both coequal goals and the inherent objective of improving water quality in the Delta (Cal. Water Code Section 85020 and 85054) when they have so far failed to consider the effectiveness of increased storage capacity in the south-of-Delta export areas.

New State Policies in the 2009 Delta Reform Act

The Sacramento-San Joaquin Delta Reform Act of 2009 (Cal. Water Code Section 85000 *et seq.*) established new policies for the State of California, such as reducing 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 (WC § 85021.) Another policy is that new Bay-Delta projects or actions should contribute to achieving the coequal goals of providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem (WC § 85054.)

It is also now the policy of the State of California to achieve objectives that the Legislature declares are inherent in the coequal goals for management of the Delta, including: improving water quality to protect human health and the environment consistent with achieving water quality objectives in the Delta (WC § 85020(e)); protecting and enhancing the unique cultural, recreational, and agricultural values of the California Delta as an evolving place (WC § 85020(b)); and, improving the water conveyance system and expand statewide water storage (WC § 85020(f)).

The PEIS must ensure that all actions considered are consistent with the 2009 Delta Reform Act, and in particular protect, restore and enhance the Delta ecosystem, and improve water quality in the Delta. Because the focus of the proposed project is to increase exports these State policies might be otherwise overlooked.

Analysis and Disclosure of Adverse Environmental Impacts

The EIS must contain detailed simulations of the operations of all proposed actions and the changes in operations and water quality throughout the Bay and Delta systems. Computer models such as

CALSIM II and DSM2 should be used to simulate the daily changes in flows upstream of, within and out of the Delta, as well as the changes in Delta exports.

Although CALSIM II is a monthly model, Reclamation should make every effort to simulate operations on a daily time step as this will better represent variations in flow and exports as well as the significant travel time for releases from Shasta Dam to reach the Delta. Daily operations will also better simulate the need for the CVP and SWP to meet D-1641 standards that only apply for part of a month or daily. The CALSIM II and DSM2 simulations for the WaterFix proposed project are flawed because daily time steps were used to simulate Sacramento flows past the proposed new north Delta intakes but exports were quantified as monthly-averages. This often resulted in unrealistic spikes in salinity and other anomalies, and also meant that CALSIM II was not able to realistically represent the reductions in exports that occur during the 14-day San Joaquin pulse flow in October. In the latter case, this resulted in unrealistically high Delta outflows in October and underestimation of salinities in the Delta in October, November and even December.

The EIS must present the daily or monthly flows and exports at all the usual locations in the Delta as well as the daily-averaged specific conductances (EC) and chloride concentrations (Cl) at the D-1641 compliance locations as well as all the key urban and agricultural diversion points in the Delta and Suisun Bay. The output data should not only be presented as long-term averages (82 years, water years 1922-2003) but also as scatter plots of monthly-averaged flows and exports and daily water quality with the project as a function of the no action alternative (without the project).

Because the CALSIM II modeling is currently performed for an 82-year period, the water quality data should also be presented for the full 82 years. A comparison of the DSM2 water quality modeling for the WaterFix proposed project (CWF H3+ and earlier versions of the project) reveal significant differences between the changes as an 82-year average and a 16-year average.

It is important that the modeling not only be accurate but that the data are presented in a way that is useful and usable by decision makers and the public. Changes in water quality, for example, on a daily basis can result in significant adverse impacts on legal users of water, the Delta ecosystem and other beneficial uses of Delta water, which would otherwise be masked through the use of 82-year averaging.

Contra Costa County and Contra Costa County Water Agency appreciates the opportunity to provide these scoping comments on the proposed PEIS. If you have any questions, please contact me at (925) 674-7824.

Sincerely,

Ryan Hernandez
Manager
Contra Costa County Water Agency

cc: John Kopchik, Director Conservation and Development Dept.
Maureen Toms, Deputy Director, Policy and Planning

County of Fresno

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January 23, 2018

Ms. Katrina Harrison, Project Manager
United States Bureau of Reclamation, Bay-Delta Office
801 I Street, Suite 140
Sacramento, California 95814-2439

Dear Ms. Harrison,

The Fresno County Board of Supervisors is writing in response to the United States Bureau of Reclamation's (USBR) request for public comment about the operation of the Central Valley Project (CVP). Our comments are as follows:

- On an annual average, 25 million acre-feet of water inflows to the Delta and seventy-six percent of this water goes to the ocean. This percentage greatly increases during wet years when California should be storing for drier periods. Beneficial use of water must be viewed with a common-sense approach. Water is a necessity for all living things and all living things should be defined as current population, current economies, and current ecosystems. Sending millions of acre-feet of water to the ocean on an annual basis in order to restore an ecosystem that is no longer present, must stop. The Sacramento-San Joaquin Bay Delta plays a vital role for millions of people and millions of acres of farmland. Secured delivery of surface supplies of water to south of the Delta Agriculture Contractors is not only important to the economy and future of California, but to the entire nation. Hundreds of crops grow in the Central Valley, which feed this country, and a secure supply of surface water as contracted, is in fact a matter of national security. Projects such as the raising of Shasta Dam, expansion of the San Luis Reservoir, expansion of the Los Vaqueros Reservoir, Temperance Flat Dam, and Sites Reservoir must be the focus to protect our nation's breadbasket.

- The Endangered Species Act and all listings threatened or otherwise within the Delta and rivers it drains, should be reviewed. Updates and amendments should consider harm or hardships, which burden people, industry, and economies, and place them as a priority. Policy and law should leave no room for assumptions, and any action taken which may affect delivery of water should be supported by hard, factual data. Infrastructure should be operated as such and pumping numbers prior to 1992 should be used as a guide.

- The ability to block deliveries from Shasta because of water temperature in the Sacramento River negates the original purpose of Shasta's construction. The USBR should not allow any action by the California State Water Resources Control Board to impede deliveries from Shasta to the CVP.

Biological Opinions (Bi Ops) that affect the delivery of water should be carefully reviewed, updated or reformed to address our current ecosystem and its inhabitants. Bi Ops and other laws and policies are changing our ability to feed our nation. The Sustainable Groundwater Management Act (SGMA) will contribute to this emergency by infringing on property rights. The San Joaquin River Settlement is likely to result in the retirement of over 90,000 acres within Friant Division alone while hundreds of thousands of acres are at risk and or currently being retired throughout the west side of the valley.

- Ecosystems change, and our laws and policies should change concurrently to thwart the dangerous practice of wasting resources. CVP contractors should be protected by the federal government. Contracts are for the delivery of surface water, and the USBR and all related federal agencies should restore contractual agreements to its customers while not allowing the State of California to effect those deliveries. Further, water used in the production of food, fiber, or dairy should be a top priority second only to health and safety. Central Valley Project and the State Water Program surface deliveries to agriculture should absolutely be viewed and regarded as a national security issue by any federal administration. Environmental use of water should be regarded as a user of water in the same fashion as agriculture, municipal and industrial users. Environmental water should be metered and responsible agencies held accountable.

We waste millions of acre-feet of water in hopes of restoring species. In so doing, we are destroying industries, economies, towns, and the lives of people. It is time to restore the future of our country and stop the dumping of fresh water into the ocean.

Sincerely,

Fresno County Board of Supervisors

Sal Quintero, Chairman

Andreas Borgeas, Vice Chairman

Brian Pacheco, Supervisor

Buddy Mendes, Supervisor

Nathan Magsig, Supervisor

INLAND EMPIRE/DESERT REGION 10
CALIFORNIA DEMOCRATIC PARTY - RURAL CAUCUS
Ruth Musser-Lopez, Chair
420 E Street
Needles, CA 92363
760.885.9374
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February 1, 2018

Katrina Harrison
Bureau of Reclamation, Bay Delta Office
801 I Street, Suite 140
Sacramento, CA 95814-2536

MUSSER-LOPEZ (CHAIR REGION 10 RURAL CAUCUS) OBJECTION TO THE DEPARTMENT OF THE INTERIOR, Bureau of Reclamation's [RR02800000, 18XR0680A1, RX.17868949.0000000] Notice of Intent To Prepare a Draft Environmental Impact Statement "Revisions to the Coordinated Long-Term Operation of the Central Valley Project and State Water Project, and Related Facilities"

Dear Ms. Harrison,

As chair of the rural caucus for the California Democratic Party's Inland Empire/ Desert Region and the top Democratic candidate in the 2014 race and now the State Democratic Party's endorsed candidate for the 2018 Senate District 16 race, I am concerned with issues pertaining to the south Central Valley surrounding Bakersfield and Tulare counties. In my capacity as the Democratic champion of Senate District 16, I am writing to go on record with my strong objection to taxpayer dollars being used to process an environmental review of the above referenced, unusually vague and open ended project. I believe referencing this project as "revisions" is misleading on its face:

The notice conflates what is more property described as a project with "Revisions to the Coordinated Long- Term Operation of the Central Valley Project and State Water Project, and Related Facilities."

These so-called "revisions" are very loosely defined as:

> "alternatives that maximize water deliveries and optimize marketable power generation."

I believe the Bureau of Reclamation has failed to properly catalog the project as one which will open a wide door for any future specific water project without further scoping of public concern.

The alternatives being considered in this proposed "project" provide no greater specificity than the proposed action and are also vague and open ended:

"Operations in coordination with new or proposed facilities to increase water supply deliveries and marketable power generation:

- *Actions that increase storage capacity upstream of the Delta for the CVP*
- *Actions that increase storage capacity south of the Delta*
- *Actions that increase export capabilities through the Delta*
- *Actions to generate additional water or that improve and optimize the utilization of water such as desalinization, water conservation, or water reuse."*

This trampling of the environmental review process by including the potential inclusion of any of an uncounted number of diversions of California's critical mid-state water supply is unacceptable.

The Bureau of Reclamations plan appears to be an attempted "end run" around the State's policy and objectives for the benefit of private corporate interests in the Central Valley, having favor with the Trump Administration. On behalf of the people I represent, I object to corporate interests having priority over the people and public funds benefiting only the rich, ag and oil interests. Public scoping should be completed on each and every individual new and/or modified storage and export facilities. Any reviewing of modifications to state law and regulations should include modification specific public scoping and should not be done in isolation subjecting the local population upon whom these policies will have the most drastic effect to the unilateral dictates of unelected mid-level federal officials.

In California we have passed Prop 1, which provides funding for specific water projects. The Trump Administration, through the Bureau of Reclamation, has failed to task itself with implementing projects that would conserve our existing water resources, taking pressure off of the CVP, Delta, upstream and downstream communities by, for example: 1) capturing rain water runoff in the south coast areas; 2) a moratorium on fracking; 3) installation of drip system irrigation; 4) repairs of leaky canals and pipelines; 5) underground water storage instead of lakes; 6) moratorium on golf courses and lakes in arid communities; 7) recycling and reuse.
The people of California have already spoken. They overwhelmingly endorsed the Water Quality, Supply, and Infrastructure Improvement Act of 2014. Proposition 1 was designed to:

- Authorize $7.12 billion in general obligation bonds for state water supply infrastructure projects, such as public water system improvements, surface and groundwater storage, drinking water protection, water recycling and advanced water treatment technology, water supply management and conveyance, wastewater treatment, drought relief, emergency water supplies, and ecosystem and watershed protection and restoration.
- Appropriate money from the General Fund to pay off bonds.

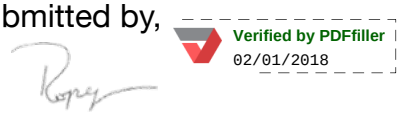
- Require certain projects to provide matching funds from non-state sources in order to receive bond funds.

Specific spending proposals in the proposition included:

- $520 million to improve water quality for beneficial use, for reducing and preventing drinking water contaminants, disadvantaged communities, and the State Water Pollution Control Revolving Fund Small Community Grant Fund.
- $1.495 billion for competitive grants for multi-benefit ecosystem and watershed protection and restoration projects.
- $810 million for expenditures on, and competitive grants and loans to, integrated regional water management plan projects.
- $2.7 billion for water storage projects, dams, and reservoirs.
- $725 million for water recycling and advanced water treatment technology projects.
- $900 million for competitive grants and loans for projects to prevent or clean up the contamination of groundwater that serves as a source of drinking water.
- $395 million for statewide flood management projects and activities.

For the reasons stated above, and because California already has voted on a plan, I object to further processing of the "Revisions to the Coordinated Long-Term Operation of the Central Valley Project and State Water Project, and Related Facilities." Further, any action that the Bureau of Reclamation or the United States Department of the Interior intends to foist upon the people of California in the future should not be allowed until federal officials get the approval of and cooperation of the State of California, not unilaterally.

Submitted by,



Ruth Musser-Lopez
Chair, Inland Empire/Desert Region
California Democratic Party Rural Caucus

Harrison, Katrina <kharrison@usbr.gov>

EIS Comments - Maximizing CVP Deliveries

Nakagawa, Brandon <bnakagawa@sjgov.org> Fri, Feb 2, 2018 at 12:14 PM
To: "kharrison@usbr.gov" <kharrison@usbr.gov>
Cc: "Myles, James" <jmyles@sjgov.org>, Terrence Dermody <tdermody94@gmail.com>, "Patterson, Katie" <kpatterson@sjgov.org>, Mark Limbaugh <mlimbaugh@tfgnet.com>, Roger Gwinn <rgwinn@tfgnet.com>, "Balaji, Kris" <kbalaji@sjgov.org>, "Buchman, Fritz" <fbuchman@sjgov.org>

Ms. Harrison,

San Joaquin County submits the following comments to Reclamation on above referenced Project. In developing the proposed action and reasonable range of alternatives to be considered for this EIS, Reclamation shall adhere to State and Federal Laws and incorporate the following:

1. Reclamation shall adhere to the California Water Code. The Delta Reform Act of 2009 is clear that the co-equal goals of the Delta Reform Act of water supply reliability and ecosystem health must both be met. The California Water Code also clearly states that the co-equal 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." The California Water Code also mandates that there be a reduced reliance on the Delta for California's water supply.

2. Reclamation shall meet all water quality and flow standards at all times and not only when convenient for the State and Federal Water Projects. Maximizing exports without meeting water quality and flow standards is a violation of Reclamation's water rights permits and other applicable regulatory standards.

3. Reclamation shall pursue proposed actions and alternatives that increase water storage throughout California, above and below ground, and should include water conservation, reuse, recycling, desalination and investments in levee maintenance and improvement Statewide.

4. Prior to maximize exports, Reclamation shall revisit and carry out to completion provisions directed by Congress in HR 2828 passed in the 108th Congress in 2004. Reclamation has not implemented several key provisions of the bill with regards to improving water quality and flow conditions in the Delta prior to increasing exports. San Joaquin County also submits the text of HR 2828 to its comments (as found at the following link https://www.govtrack.us/congress/bills/108/hr2828/text at the time of this comment).

Sincerely,

Brandon Nakagawa, P.E.

Water Resources Coordinator

San Joaquin County Department of Public Works

(209) 468-3089

(209) 468-2999 fax

SAVE THE AMERICAN

Save the American River Association

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David Thesell

January 23, 2018

Katrina Harrison - Project Manager
Bureau of Reclamation -
Bay Delta Office
801 I Street, Suite 140
Sacramento, CA 95814-2536

Dear Ms. Harrison:

This responds to a public notice in the Federal Register Vol. 83, No. 249, of the intent by the Bureau of Reclamation to prepare an environmental impact statement, "Revisions to the Coordinated Long-term Operation of the Central Valley Project and the State Water Project, and Related Facilities."

Save the American River Association (SARA) was organized in 1961 and initiated the founding of the American River Parkway. SARA has been an advocate for the river and the Parkway ever since. What happens in The Delta, directly impacts the American River and its ecosystem.

The Bureau's project intends to "Maximize water supply deliveries and to optimize marketable power generation," consistent with applicable law, contracts, and agreements, considering new and/or modified storage and export facilities."

The long-standing policy in place was repeated by Secretary of the Interior Julius Krug, Oct 12, 1948: "Let me state, clearly and finally, the Interior Department is fully and completely committed to the

policy that no water which is needed in the Sacramento Valley will be sent out of it." He then added, "There is no intent on the part of the Bureau of Reclamation to ever divert from the Sacramento Valley a single acre-foot of water that might be used in the Valley now or later." There is a long history of other Department of the Interior and Bureau of Reclamation officials making this and other similar statements.

The State of California entered the Union on September 9, 1850, on an equal footing with the laws of the original 13 states. One of those laws, the Public Trust Doctrine, is a background principle of property law that predates today's environmental laws and applies to every water right that impacts trust resources and may, in fact, define or limit the very nature of the right to put water to beneficial use. In California, the Public Trust Doctrine can limit private water rights to protect inherent public trust values.

The California court has stated: "It is laid down by our law writers that the right of property in water is usufructuary and consists not so much of the fluid itself as the advantage of its use." Put in the context of a water right – a user of water must respect the rights and interests of others, including the peoples' fish property, and is not to alter the integrity of that water as a water supply or an ecosystem.

There is a perched water table involving about 379,000 acres on the west side of the San Joaquin Valley (USFWS-2017).

Salt has impacted 780,000 acres on the west side of the San Joaquin Valley (California Agriculture Oct-Dec 2017.

California's rivers and streams are grossly over appropriated and the Bureau of Reclamation holds the largest share of those water rights.

The Public Policy Institute of California (October – 2016) reports that for the period 2000 to 2015, about 33 percent of the annual runoff to the Delta is consumed upstream of the Delta, 17 percent was exported and 5 percent was consumed within the Delta.

The operations of the CVP and SWP must be evaluated for the various stresses such operations place on the Chinook salmon and steelhead of the Central Valley.

The Delta smelt are nearing extinction. The winter and spring runs of Chinook salmon and Central Valley steelhead trout, green sturgeon, and the Longfin smelt are listed under Federal or State lists of Endangered or Threatened Species. All are struggling to survive in the face of habitat uncertainty and heavy exports.

Extinction is forever. The extinction of any of our State's native fish species is not a management option.

The Bureau of the Budget in 1953, commenting on legislation to reauthorize the CVP (Act of August 27, 1954) stated, "that the costs for correcting damages to fish and wildlife resources caused by the building of projects should be treated as part of the construction costs and allocated to the various purposes in the same manner as other damages, including relocations." The meaning of this quote is that the people's water, fish and wildlife resources (the public trust) impacted by such projects must be protected and damages that are incurred are to be corrected as a project cost and that such costs are to be borne by the project users and beneficiaries.

The Central Valley Project Improvement Act (CVPIA) of 1992 amended previous CVP authorizations to include fish and wildlife protection, restoration, and mitigation as project purposes having equal priority with irrigation and domestic water supply, and fish and wildlife enhancement having an equal priority with power generation. Mitigation for fish and wildlife losses incurred by construction, operation and maintenance shall be based on the replacement of ecologically equivalent habitat.

According to Grantham and Viers (Environ. Res. Let. 9 -2014) the American River is over appropriated with 18,985,524 acre-feet allocated for all uses. About 3,358,904 acre feet is allocated for non-hydropower water rights (M and I, Ag). The average annual runoff of the American River is estimated at 2,620,000 acre-feet. The effects of

the hydropower generation projects upstream of Folsom Reservoir must be taken into account in your determination of the amount of water available for use in the basin and for export.

Save the American River Association is still waiting for the Bureau of Reclamation to institute a flow management standard (flow, timing of those flows and temperature) that is protective of the life history stages of Chinook salmon and steelhead trout that utilize the American River.

Given that much has to be accomplished to fulfill the purposes of the CVPIA of 1992. Department of the Interior and Bureau of Reclamation representatives have stated that it is their intent to live by the limitation of California Water Code Sections 11460 -11463. In this effort, the Bureau has attempted to estimate the present and future water needs for each watershed and have said they intend to divert no water from any watershed which will or may be needed for beneficial uses in the future within that watershed.

Save the American River Association requests that the Bureau of Reclamation, as a part of the preparation of an environmental impact statement regarding the "Revisions to the Coordinated Long-term Operation of the Central Valley Project and the State Water Project, and Related Facilities," undertake the following actions relative to this environmental impact statement project.

Action: The Bureau of Reclamation should identify the water needs in the broadest context for each of the watersheds or sub-basins of the Sacramento Valley and Delta Region. That includes not only the municipal and industrial water needs, but the instream flows (including water quality) needed to protect anadromous fishes, other public trust resources, uses and values of each watershed or sub-basin.

Action: The Bureau of Reclamation should identify the rivers and streams and associated watersheds it believes have "excess" or "surplus" water above their identified needs.

Action: What is the Bureau of Reclamation definition of "excess" or "surplus water" in light of the broadened definition of Public Trust purposes, uses and interests protected in light of the Marks court definition and potential irrigation, municipal water demands in the Sacramento Valley and Delta watersheds?

Action: The Bureau of Reclamation should lay out a detailed plan with disposal mechanisms, locations and cost estimates of how it and its contractors are going to handle the drainage from the lands irrigated that is surely contain selenium, boron and other salts that will flow/ drain from these lands.

Action: The operations of the CVP and SWP must be evaluated as a major source of stressors on the life history stages of the Chinook salmon and steelhead of the Central Valley. Such stressors must be evaluated and measures identified and recommended to eliminate such stressors.

Action: The Bureau of Reclamation should lay out a detailed plan of how it proposes to protect the fish and wildlife resources and their habitats affected by the operation of reservoirs it operates or controls to maximize the sale or use of such "excess" or "surplus" water.

Save the American River Association appreciates the opportunity to present these comments.

Sincerely,

Stephen Green

Stephen Green
President

Cc: SARA Board of Directors

Stephan C. Volker
Alexis E. Krieg
Stephanie L. Clarke
Jamey M.B. Volker (Of Counsel)

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11.222.01

January 25, 2018

VIA EMAIL AND US MAIL

Katrina Harrison, Project Manager
Bureau of Reclamation, Bay Delta Office
801 I Street, Suite 140
Sacramento, CA 95814-2536
kharrison@usbr.gov

Re: Notice of Intent to Prepare a Draft Environmental Impact Statement for Revisions to the Coordinated Long-Term Operation of the Central Valley Project and State Water Project, and Related Facilities

Ms. Harrison:

I. INTRODUCTION

On behalf of the North Coast Rivers Alliance, Pacific Coast Federation of Fishermen's Associations, the Institute for Fisheries Resources, and the San Francisco Crab Boat Owners Association, we submit the following comments objecting to the Bureau of Reclamation's ("Reclamation's") Notice of Intent to Prepare a Draft Environmental Impact Statement for Revisions to the Coordinated Long-Term Operation of the Central Valley Project and State Water Project, and Related Facilities ("EIS").

II. RECLAMATION'S PROPOSAL TO SQUEEZE MORE WATER FROM THE DELTA'S COLLAPSING ECOSYSTEM IS IRRESPONSIBLE.

Reclamation's proposal to squeeze more water from the Delta's collapsing ecosystem is irresponsible. Reclamation knows better. Your August 2016 request for reconsultation with the National Marine Fisheries Service ("NMFS") confirmed what the scientific community has been telling us for 25 years: that to prevent extinction of the dwindling population of endangered Sacramento River winter-run Chinook salmon, Reclamation must undertake fundamental changes to the long term operations of the Central Valley Project ("CVP"), State Water Project ("SWP"), and related facilities. Likewise, Reclamation's August 2016 request for reconsultation with the Fish and Wildlife Service ("FWS") acknowledged recent data demonstrating that Delta smelt populations have plunged to new lows. These indisputable facts present compelling

grounds for altering system-wide operating criteria for the CVP and SWP to *reduce* exports, and thereby restore degraded habitat.

Were Reclamation addressing additional *safeguards* to prevent species from extinction, its proposal to alter the long-term operations of the CVP and SWP would be entirely appropriate. But Reclamation's intent is just the opposite. Reclamation states that "[t]he need for the action is to increase operational flexibility" and that "[t]he purpose of the action . . . is to continue the operation of the CVP in a coordinated manner with the SWP, for authorized purposes, in a manner that enables Reclamation and California Department of Water Resources to ***maximize water deliveries*** and optimize marketable power generation consistent with applicable laws, contractual obligations, and agreements; and to augment operational flexibility by addressing the ***status of listed species***." Notice of Intent, 82 Fed.Reg. 6179 (Dec. 29, 2017), emphasis added. Thus, instead of reducing deliveries to save imperiled species from extinction, Reclamation is proposing to drive the final nail in their coffin by ignoring or masking their endangered status. By cynically planning an end-around the listed status of these species Reclamation seeks to remove the final barrier to its increased delivery of water to water contractors whose insatiable thirst is diametrically at odds with the survival of these listed species.

Reclamation's continued mismanagement of the CVP, aided and abetted by repeated petitions to relax water quality standards, routine temperature exceedances and other water quality violations, has consistently prioritized water deliveries over survival of the listed species that need increased instream flows. This has resulted in further water quality degradations and sharp population declines in both the listed Delta smelt and the San Francisco Bay-Delta Distinct Population Segment ["DPS"] of longfin smelt[1], and anadromous species, including Sacramento River winter-run, Central Valley spring-run Chinook, California Central Valley steelhead, and the southern DPS green sturgeon. This mismanagement also risks the viability of the Central Valley fall and late fall-run Chinook – species of concern under the Endangered Species Act ("ESA").

III. RECLAMATION'S STATEMENT OF PURPOSE AND NEED VIOLATES NEPA.

Reclamation's statement of the purpose and need for its action violates NEPA because it defines its objectives in unreasonably narrow terms. *National Parks & Conservation Ass'n v. Bureau of Land Mgmt.*, 606 F.3d 1058, 1070-1072 (9th Cir. 2010). Its determination that the action's purpose is to enable long-term operation of the CVP and SWP to "maximize water

[1] FWS has determined that longfin smelt's listing is warranted but precluded by higher priority species.

deliveries and optimize marketable power generation" is too narrow. It is contrary both to the CVPIA's mandate that Reclamation "protect, restore, and enhance fish, wildlife, and associated habitats," and the clarion call of the Biological Opinions governing the CVP that Reclamation must restore water flows essential to recovery of listed species. Reclamation's statement of purpose and need improperly prioritizes water deliveries over species recovery and therefore violates NEPA, the CVPIA and the ESA.

IV. RECLAMATION MUST STUDY A REASONABLE RANGE OF ALTERNATIVES, INCLUDING AN ALTERNATIVE THAT REDUCES WATER DELIVERIES.

Reclamation's proposed narrow statement of purpose and need is contrary to law because it improperly excludes consideration of an alternative that reduces – instead of maximizes – water deliveries. A reduced delivery alternative is necessary to prevent the otherwise imminent extinction of many listed species. Under the ESA, Reclamation must comply with the mandates laid out by NMFS and FWS in their Biological Opinions to protect imperiled species as necessary to avoid jeopardy. Under NEPA, Reclamation must consider alternatives that exceed those protections to enable recovery of these species.

V. CONCLUSION

Reclamation's proposal to extract yet more water from a dying Delta is irresponsible resource management. Reclamation's attempt to limit its Draft EIS by considering only options that increase diversions and further degrade the Delta's water quality violates NEPA, the CVPIA and the ESA. At a time when the Delta's imperiled fisheries are hanging by a thread, any plan to maximize deliveries irresponsibly jeopardizes their survival.

Respectfully submitted,

Stephan C. Volker
Attorney for North Coast Rivers Alliance, Pacific Coast Federation of Fishermen's Associations, Institute for Fisheries Resources, and the San Francisco Crab Boat Owners Association

SCV:taf

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Sent via E-Mail
kharrison@usbr.gov

January 31, 2018

Katrina Harrison, Project Manager
Bureau of Reclamation
Bay-Delta Office
801 I Street, Suite 140
Sacramento, CA 95814-2536

RE: **Scoping Comments – Draft Environmental Impact Statement Analyzing Potential Modifications to the Continued Long-Term Operation of the Federal Central Valley Project in Coordination with the State Water Project**

Dear Ms. Harrison:

The California Farm Bureau Federation ("Farm Bureau") appreciates the opportunity to provide scoping comments on a potential draft Environmental Impact Statement ("EIS") which analyzes continuing long-term operations of the Central Valley Project ("CVP") in coordination with the State Water Project ("SWP").

Farm Bureau is a non-governmental, non-profit, voluntary membership California corporation whose purpose is to protect and promote agricultural interests throughout the state of California and to find solutions to the problems of the farm, the farm home and the rural community. Farm Bureau is California's largest farm organization, comprised of 53 county Farm Bureaus currently representing approximately 40,000 agricultural, associate and collegiate members in 56 counties. Farm Bureau strives to protect and improve the ability of farmers and ranchers engaged in production agriculture to provide a reliable supply of food and fiber through responsible stewardship of California's resources. Since reliable and affordable water supplies are critical to California agriculture, and because a preponderance 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.

We appreciate the Bureau of Reclamation's ("Reclamation") effort to analyze potential modifications to the CVP, in a coordinated manner with the SWP, to maximize water deliveries and augment operational flexibility of the projects in support of that goal. In particular, we appreciate Reclamation's stated intent in the Federal Register notice of Friday, December 29, 2017, to evaluate stressors of protected fish populations other than CVP and SWP operations, and to consider beneficial non-flow measures to decrease those

stressors and improve targeted fish populations. Reclamation's Federal Register notice rightly recognizes that operations of CVP and SWP affect the quality of the human environment[1], and those operations have been constrained mightily in recent years by environmental regulation calibrated to protect fish populations in the Sacramento-San Joaquin River system. The status quo is no longer working for a wide swath of California's human users of CVP and SWP water, and because so much of California's water use is interrelated, it has ultimately affected the preponderance of California's population and economy.

In the draft EIS and its alternatives analysis, therefore, we ask that Reclamation start from the premise that California's water situation is unsustainable for the future, not only for those who receive CVP and SWP water, but for the state as a whole. Some of the major reasons for this are:

- Drought is a fact of life in California. The severe drought experienced in the years 2012-2015 gave California a foretaste of what an extended drought will look like with our current infrastructure and regulatory overlay. Current trends now suggest such droughts could become more common and, potentially, worse. Those longer and drier droughts are part of a possible larger climate trend, the flipside of which is more infrequent, but bigger and flashier floods—which means we must do a much better job capturing more water when it's available.

- The Sierra snowpack is diminishing. Another serious aspect of a possible changing climate in California is a shrinking snowpack, which at a historical average of 14 million acre-feet is California's largest "reservoir" of water for spring and summer release through the river system to coincide with the growing season. This also underscores the need to capture more water, both in surface reservoirs – of which more are needed – and in our aquifers, as California finds it imperative to focus more intensely on groundwater recharge and underground water storage.

- The Sustainable Groundwater Management Act of 2014 is here. At the same time bigger droughts and less snowpack forces California to turn increasingly to groundwater for human use. Groundwater will potentially become less available – at least in some areas – as the Sustainable Groundwater Management Act of 2014 ("SGMA") is implemented. This landmark, comprehensive legislation portends a new era of limits for California water users.

- Regulatory water demands will increase with declining aquatic species. As another consequence of a changing hydrology and water temperatures, we

[1] *San Luis & Delta-Mendota Water Authority (SLDMWA) v. Jewell*, 747 F.3d 581 (9th Cir. 2014), and *SLDMWA v. Locke*, 776 F.3d 971 (9th Cir. 2014).

can almost certainly expect further declines in listed fish species. This will likely lead to heightened conflicts as a result of rising regulatory tensions and intense competition for limited water.

We ask that the Bureau then recognize that bold, integrated and collaborative actions are required to restore reliability of CVP and SWP deliveries – as well as to improve California's overall water supply and demand balance on the system level, because so much of California's water use is interrelated. Some of these efforts include:

- Storage Integration. As shown in the recent Storage Integration Study by the Association of California Water Agencies ("ACWA"), California's water supply reliability can benefit significantly from greater integration of new and existing surface and groundwater storage. While permitting, financing and engineering questions remain before the exact contours of an optimized statewide package of potentially beneficial new surface storage facilities can fully emerge, some of the known proposed projects include Sites Reservoir Project[2] in the Sacramento Valley, the Shasta Lake Reservoir Investigation,[3] the Upper San Joaquin River Basin Storage Investigation (or "Temperance Flat Reservoir Project"),[4] the San Luis Reservoir Expansion,[5] and the Los Vaqueros Reservoir Expansion Investigation.[6]

  California's Oroville spillway failure in 2017 served to highlight the urgent need for substantial on-going maintenance, repair, rehabilitation, modernization and improvement of existing Reclamation's and Corps' structures and facilities.

  In addition to potential expanded on-farm recharge in strategic locations on the eastern edge of California's Central Valley, proposed large-scale groundwater banking facilities with potential statewide and regional benefits include a proposed 100,000-acre-foot-per-year Tulare Lake Storage and Floodwater Protection Project,[7] a proposed 100,000-acre-foot-

[2] See California Water Commission ("CWC") "Sites Reservoir" project application page (accessed January 25, 2018 at https://cwc.ca.gov/Pages/WSIP/SitesProject.aspx).
[3] See Reclamation "Shasta Lake Reservoir Investigation" project page (accessed January 25, 2018 at https://www.usbr.gov/mp/ncao/shasta-lake.html).
[4] See CWC "Temperance Flat Reservoir" project page (accessed January 25, 2018 at https://cwc.ca.gov/Pages/WSIP/TemperanceFlat.aspx).
[5] See San Luis Reservoir Expansion Draft Appraisal Report Central Valley Project, California Mid-Pacific Region, December 2013 (accessed January 25, 2018 at https://www.usbr.gov/mp/sllpp/docs/2013-11-19-draft-san-luis-expansion-appraisal-report.pdf).
[6] See CWC "Los Vaqueros Reservoir Expansion" project (accessed January 25, 2018 at https://cwc.ca.gov/Pages/WSIP/LosVaqueros.aspx).
[7] See CWC "Tulare Lake Storage and Floodwater Protection Project" (accessed January 25, 2018 at https://cwc.ca.gov/Pages/WSIP/TulareLake.aspx).

per-year Kern Fan Groundwater Storage Project,[8] and a new proposed 30,000 acre-foot-per-year groundwater water bank partnership between the Delano-Earlimart Irrigation District and Pixley Irrigation District on the Eastside of the San Joaquin Valley.[9] Such groundwater banking and recharge projects will be increasingly important as local Groundwater Sustainability Agencies begin implementation of Groundwater Sustainability Plans under SGMA. Because of their critical importance to California's groundwater basins and water supply, such projects should be robustly supported by federal facilities, operations, on-going technical support, permitting, planning, and programs as a major new focus of Reclamation's overall mission in California.

Also critical to any large-scale groundwater recharge program will be a permanent fix to recently identified issues relating to land subsidence along the Friant-Kern Canal,[10] and intensive local development of groundwater managed aquifer replenishment projects in the San Joaquin River and Tulare Lake Basin, all along the Eastside of the Central Valley.

In light of federal budget constraints, transfers of ownership and operation of existing Reclamation facilities, federal-state-local-private partnerships, and creative new financing arrangements will also be important tools to ensure Reclamation and the CVP can continue to successfully meet the many challenges the 21st Century will no doubt hold, both in California and elsewhere in the American West.

- Federal-State-Local Partnerships. In a recent reservoir reoperation study,[11] in a managed aquifer recharge paper,[12] and in a report on available water for groundwater recharge,[13] the California Department of Water Resources ("DWR") examines potential opportunities to increase system resilience. Reclamation and the Corps must lead similar federal efforts to increase

[8] See CWC "Kern Fan Groundwater Storage Project" (accessed January 25, 2018 at https://cwc.ca.gov/Pages/WSIP/KernFan.aspx).

[9] See article, "Central Valley irrigation districts team up to boost water levels," Western Farm Press, January 15, 2018 (accessed January 25, 2018 at http://www.westernfarmpress.com/water/central-valley-irrigation-districts-team-boost-water-levels).

[10] See Brochure, "Subsidence – A Critical Challenge to Friant-Kern Canal Water Deliveries," Friant Water Authority, 2017 (accessed January 25, 2018 at https://static1.squarespace.com/static/58c2eccc15d5db46200ea426/t/5994c8fd49fc2b3ca875b3f5/1502923009382/Friant_Subsidence_Brochure.pdf).

[11] See Phase III Report: Assessment of Reoperation Strategies (August 2017) (accessed January 16, 2018 at http://www.water.ca.gov/system_reop/).

[12] See DWR Flood-MAR Whitepaper (accessed January 16, 2018 at http://www.water.ca.gov/system_reop/).

[13] See DWR Draft Water Available for Replenishment (accessed January 16, 2018 at http://www.water.ca.gov/groundwater/sgm/wafr.cfm).

reservoir yields, recharge more groundwater, and increase system flexibility. Both DWR and the federal government should work with local agencies to facilitate regional solutions that include public benefits, and that benefit California's economy and California's water system as a whole. For the federal government, this includes leadership and partnership to ensure meaningful investment and viable project implementation.

- Delta Operations.

  - *Near-Term WIIN Act Operational Flexibility*. The Bureau, in its coordinated operations of the CVP in connection with the SWP, must take maximum advantage of new near-term operational flexibility provisions in the Subtitle J of the Water Infrastructure Improvements for the Nation (WIIN) Act. However, near-term flexibility under the WIIN Act, alone, will not be sufficient to provide the necessary long-term flexibility to significantly improve the reliability of CVP and SWP project deliveries in export areas located south of the Sacramento-San Joaquin River Delta.

  - *Long-Term Delta Solutions*. As highlighted in ACWA's Integration Study, long-term fixes in the Delta will require both physical improvements, improved species habitat, and legislative and regulatory reforms in the area of species protections and water management. While the question of major new infrastructure is beyond the scope of this comment letter, improved Delta conveyance could also involve a mix of:

    - ✓ Regulatory and operational reforms;
    - ✓ Smaller-scale, cost-effective, readily implementable system fixes within, upstream, and down-pipe of the Delta, whether in combination with other more ambitious conveyance proposals, or possibly as self-standing or supplemental projects;[14]
    - ✓ Improved water management, in all sectors throughout the Delta's watershed and its associated exports service areas;
    - ✓ Improved habitat conditions for endangered fish species both in the Delta and upstream of the Delta;
    - ✓ Reduced stressors;

[14] From an agricultural standpoint particularly, it is important to note that improvements to Delta conveyance that are overly expensive, that are not fundable, implementable, or permittable within a reasonable amount of time, or those that do not provide desired levels of long-term reliability, affordability, increased water supply, are solutions that may ultimately necessitate a look at possible alternatives. While the current situation with respect to long-term Delta conveyance is uncertain and highly fluid, all viable and technically feasible alternatives should be considered as part of the DEIR.

- ✓ Improved fishery management;
- ✓ Upstream water management;
- ✓ New storage both north and south of the Delta, both above and below ground.

While the exact nature of a comprehensive Delta solution that can be funded, permitted and implemented remains uncertain, basic equities require a solution that protects water quality in the Delta and that is fair and just to Delta communities. At same time, the fact that many aspects of the *status quo* in the Delta are unacceptable and unsustainable for *all* of the communities, and especially important farming areas south of the Delta, is almost universally acknowledged.

- ➢ *Functional Flows and Habitat Restoration*. In addition to the priorities above, lasting fixes to California's water system will require breaking with failed policies and approaches of the past and embracing bold new collaborative approaches to species and habitat management.

- ➢ *21st-Century Water Infrastructure*. On balance with human needs and other competing system demands, operations and physical features of California's statewide water system must be adjusted to provide improved public benefits in the area of fish and wildlife. The public—including US taxpayers who enjoy distinct economic and food security benefits from California's water system—should share in the funding of potential new storage facilities to provide such benefits.

- ➢ *Environmental Water Use Efficiency*. Efficiency and accountability for results in the area of environmental water use must be placed on a par with efficient use and accountability in other areas of water use.[15] As a major part of this move toward more efficient and effective environmental water use, times and volumes of environmental water releases must take account of the intersection of environmental water flows and the broader suite of relevant environmental stressors and ecological functions. Such stressors and ecological functions include:

  - ✓ Improved cold water management;
  - ✓ Improved management of dedicated environmental water assets including potential environmental water purchases from willing sellers;

[15] Article X, section 2 of the California Constitution requires that all uses of water be reasonable and non-wasteful.

- ✓ Seasonally inundated floodplains;
- ✓ Modified local diversion times and intra-annual storage, including offstream ponds and on-farm recharge;
- ✓ Land and water management for an improved aquatic food web;
- ✓ Instream habitat features;
- ✓ Restored tidal marsh in the Sacramento and San Joaquin Delta;
- ✓ Improved migration pathways and access to high quality upstream habitats;
- ✓ Improved hatchery management;
- ✓ Predator control;
- ✓ Fish screens and barriers;
- ✓ Possible predator exclusion weirs;
- ✓ Other managed human interventions including safe harbor for dry-year rescue efforts, dry-year channel modification and maintenance for emergency fish passage, modern conservation hatchery techniques, managed trucking or barging, and the like;
- ✓ Flood system improvements and improved management of periodic flood flows for multiple benefits, including seasonally inundated floodplain habitat in combination with floodplain agriculture.[16]

With respect to environmental and socioeconomic impacts and their assessment within the context of the alternatives analysis undertaken in the DEIS, it goes without saying that the service areas of both the CVP and the SWP superintend millions of acres of California's landscape, and affect tens of millions of people. For both source regions and the service areas, the DEIS must examine impacts to:

- Groundwater resources. The DEIS must recognize impacts to groundwater resources, both as a function of groundwater recharge and groundwater substitution.

- Water quality. The DEIS must recognize impacts to water quality, including dry-year impacts and potential impacts on irrigation, crop yields, and potential salt-trapping in the Delta.

- Land use. The DEIS must examine land use impacts of the various alternatives, including agricultural fallowing.

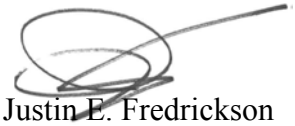
[16] See DWR's 2017 Update to the Central Valley Flood Protection Plan and associated documents (accessed January 16, 2018 at http://www.water.ca.gov/cvfmp/2017-cvfpp-docs.cfm).

- Socioeconomic effects. The DEIS must examine socioeconomic effects, including economic impacts and employment.

We appreciate the Bureau's consideration of the foregoing, and look forward to following the Bureau's efforts to improve CVP operations as this process moves forward. Please do not hesitate to contact either of us directly, if any questions arise about this letter.

Very truly yours,

Christian C. Scheuring
Managing Counsel



Justin E. Fredrickson
Environmental Policy Analyst

Harrison, Katrina <kharrison@usbr.gov>

Response to USBR's preposed revisions to the coordinated long-term operation of the CVP and SWP projects and related facilities

Ron Forbes <ronforbes65@gmail.com> Wed, Jan 31, 2018 at 9:42 PM
To: kharrison@usbr.gov, Ron Forbes <Bluse03@yahoo.com>

Ronald A. Forbes D.D.S.
Delta Fly Fishers, Conservation Chair
132 S. Crescent Ave.
Lodi, Ca. 95240

31 January 2018

Katrina Harrison, Project Manager
801 I Street, Suite 140
Sacramento, Ca. 95814-2536

Dear Ms. Harrison;

The Delta Fly Fishers is an organization of approximately 100 members. We adamantly oppose the US Bureau of Reclamation's (USBR) attempts
to divert more water from the Delta to South San Joaquin Valley corporate agribusiness and

southern water agencies. Since the inception of the Central Valley Project the USBR has diverted water from the Delta with no regard for the Delta's agriculture, environment, economy, or its fisheries.

Research by respected state and federal agencies, as well as the National Academy of the Sciences, has shown an overwhelming direct correlation between these water diversions and the devastation of the Delta's fisheries and water quality. Now, because of the USBSs reckless water diversions, many indigenous fish species, and the Central Valley's salmon and steelhead population, are facing extinction. Since the Environmental Protection Agency was founded no species have become extinct. The USBR's proposed long-tern water diversion will guarantee these extinctions and they will occur on your watch.

Because of the loss of it's fisheries and water quality, the Delta has lost most of it's recreational economic viability. Several years ago, in the 5 Delta counties, fishing and recreational income was just over $750 million.

That asset has been diminished by more than 50%. A decade ago 10,000 commercial fisherman were a $1.4 billion asset to the California economy. Now the number of commercial fisherman has dropped to 700.

Under no circumstance should the USBR proceed with it's proposed long-tern revisions from the SWP and CVP. It is time the for USBR to comply with both state and federal law and base your operating decisions on the Doctrine of Public Trust. The Delta Fly Fishers strongly request that the USBR not continue to subsidize the political and economic well-being of the South San Joaquin Valley's corporate agribusiness at the expense of the Delta region's environment and economy.

Sincerely,

Ronald A. Forbes D.D.S.

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Transmitted via email: kharrison@usbr.gov

January 31, 2018

Katrina Harrison, Project Manager
Bureau of Reclamation
Bay Delta Office
801 I Street, Suite 140
Sacramento, CA 95814

Subject: Notice of Intent to Prepare a Draft Environmental Impact Statement, Revisions to the Coordinated Long-Term Operations of the Central Valley Project and State Water Project, and Related Facilties.

Dear Ms. Harrison:

Restore the Delta advocates for local Delta stakeholders to ensure that they have a direct impact on water management decisions affecting the water quality and well-being of their communities, and water sustainability policies for all Californians. We work through public education and outreach so that all Californians recognize the Sacramento-San Joaquin Delta as part of California's natural heritage, deserving of restoration and protection. We fight for a Delta whose waters are fishable, swimmable, drinkable, and farmable, supporting the health of the San Francisco Bay-Delta Estuary, and the ocean beyond. Our coalition envisions the Sacramento-San Joaquin Delta as a place where a vibrant local economy, tourism, recreation, farming, wildlife, and fisheries thrive as a result of resident efforts to protect our waterway commons.

We appreciate the opportunity to comment on the above-referenced notice of intent issued December 29, 2017, by the United States Bureau of Reclamation (USBR). It is our understanding that Reclamation proposes to evaluate alternatives that maximize water deliveries and optimize marketable power generation consistent with applicable laws, contractual obligations, and agreements; and to augment operational flexibility by addressing the status of listed species. We understand from the NOI that the EIS will be programmatic in nature, and that future project-specific EISs or other environmental review documents will be "tiered" off this EIS. Our comments address USBR's request for suggestions and information on alternatives and topics to be addressed, including other important issues related to the proposed action.

Further, we incorporate by reference the comments contained in the letter of Natural Resources Defense Council, Bay Institute, Defenders of Wildlife, and San Francisco BayKeeper submitted to the Bureau on January 30, 2018.

Specific Comments

1. USBR states that the purpose and need for the action is "to continue the operation of the CVP [federal Central Valley Project] in a coordinated manner with the SWP [State Water Project], for its authorized purposes, in a manner that enables Reclamation and California Department of Water Resources (DWR) to maximize water deliveries and optimize marketable power generation consistent with applicable laws, contractual obligations, and agreements; and to augment operational flexibility by addressing the status of listed species."

   The NOI clearly indicates that CVP operations will occur "in a coordinated manner with the SWP"—this means that this reinitiating must include preparation of an environmental impact statement that also complies with the provisions and requirements of the California Environmental Quality Act (CEQA) since the SWP's operator is a state agency, DWR—or provide valid reasoning for why CEQA compliance was deemed unnecessary.

   This language fails to acknowledge that the purpose and need for the EIS is to reinitiate Bureau consultation with other federal agencies charged with administering and enforcing the federal Endangered Species Act through use of the National Environmental Policy Act. This is significant because it ignores the past record of Bureau and fisheries agencies' consultation which established reasonable and prudent alternatives (RPAs) for how the CVP and SWP operate throughout the Delta and in upstream tributaries of the Delta's Central Valley watershed. Those previous consultations and environmental impact statements have resulted in the very reductions, due to projects' effects on listed species, that USBR complains of when it states that "State and Federal regulatory actions, federal trust responsibilities, and other agreements, have significantly reduced the water available for delivery south of the Sacramento-San Joaquin River Delta, in order…to protect water quality within the delta and prevent jeopardy and adverse modification of critical habitat of threatened and endangered species." This reasoning also ignores the fact that eight of the last twelve years have been dry or critically dry years, crimping south-of-Delta water supply reliability generally. The seven years of CVP and SWP operations under just D-1641—prior to application of the 2008 Delta smelt and 2009 salmonid biological opinions—were correlated with emergence and spread of a Delta-wide "pelagic organism decline." This systemic die-off of many different open water species was heavily studied by the estuary's science community. The generally concluded that the estuary had entered a crisis state that was the result of interactions of many "stressors" including water project operations, pollutants, contaminants, and other stressors. The reason that CVP deliveries have been reduced under the federal Endangered Species Act is that projects' operations at

higher levels of exports and deliveries would otherwise continue or worsen the abundance, genetic diversity, and survival of listed fish and other species in the Delta, and there is little reason to expect that—at least on sound scientific grounds—that restrictions on Delta exports imposed under these biological opinions should be eliminated or relaxed.

2. The EIS should address among the "stressors" the water quality effects of toxics and legacy contaminants like selenium, mercury, arsenic, pesticides, and other contributors to water quality degradation in the Delta. EIS preparers should follow and incorporate findings about these stressors from the Delta Independent Science Board's recent water quality science review.

3. Recently, the State Water Resources Control Board approved new beneficial uses for tribal/cultural subsistence fishing and subsistence fishing generally. The EIS should evaluate impacts and potential mitigation measures for preventing impairment of these beneficial uses and degradation of water quality resulting from proposed program actions.

4. The NOI states that USBR will analyze potential changes to long-term operations of the CVP and SWP to: maximize water supply delivery, consistent with applicable law, contracts and agreements, considering new and/or modified storage and export facilities. The EIS misstates Bureau objectives and purposes for the CVP as stated in the Central Valley Project Improvement Act of 1992, whose purposes include operational protection of fish and wildlife as well as water delivery. Formulation of any and all alternatives must incorporate these purposes as fundamental to CVP operations in coordination with SWP operations. The EIS must clearly describe what regulatory changes will be made and considered.

5. The NOI is silent about WHAT modifications to regulatory requirements USBR will review and consider as part of the EIS. We have no regulatory requirement changes to recommend, since listed species continue to survive, although at a reduced level after five consecutive years of drought and a single flood year since 2011. We recommend none be incorporated into the alternatives USBR considers in this EIS.

6. The NOI states the EIS will "evaluate stressors on fish other than CVP and SWP operations, beneficial non-flow measures to decrease stressors, and habitat restoration and other beneficial measures for improving targeted fish populations." Instead of the EIS evaluating stressors other than CVP and SWP operations, the alternatives evaluated in the EIS must evaluate *all* stressors affecting listed species, including CVP and SWP operations, otherwise, effective mitigation and RPA strategies will founder for having failed to acknowledge the relative contributions of different stressors to the population effects listed species experience in the altered ecosystems of the Delta estuary. It would be fallacious, arbitrary, and capricious for USBR to conduct an EIS process that did not properly situate CVP and SWP operations as an important stressor in the Delta context.

7. The NOI states the EIS will “evaluate potential changes in laws, regulations and infrastructure that may benefit power marketability.” But it fails to indicate what any of these “potential changes” may include. This makes it difficult to recommend whether some potential changes should or should not be included in the EIS from our perspective. Clearly, USBR is not looking for input from the public on how to scope this issue. We think, however, it would not be advisable to subject CVP and SWP operations to instabilities of electricity deregulation such as those California experienced in the state’s power market between 1999 and 2001. Among the effects of applying market principles to the state’s electric power market were frequent rolling blackouts that struck major cities in the San Diego region and the Bay Area. Such effects were unacceptable at that time, and are unacceptable today.

8. USBR is by federal law required to comply with state water law under section 8 of the Reclamation Act of 1902. Under state law (Delta Reform Act, DRA), it is the policy of our State to reduce reliance on the Delta for supplying California’s future water supply needs. Each alternative developed for this EIS must indicate how the alternative complies with this policy mandate (Water Code section 85021). Each alternative must also demonstrate how it will achieve the coequal goals contained in the DRA (Water Code section 85054).

9. There should be at least one alternative, for the EIS’s alternatives analysis to have a spectrum of reasonable alternatives, that reflects state policy to “make conservation a California way of life.”

10. It is an overarching goal of the federal Endangered Species Act to achieve the recovery and de-listing of rare, threatened, or endangered species. Through application of the ESA nationally, several species have rebounded through federal actions and management to achieve this purpose, including sea lions and wolves. A reasonable alternative should be included in this EIS that addresses what Delta in- and out-flows would be needed to achieve recovery of Delta smelt, longfin smelt, winter-run Chinook, salmon, and spring-run Chinook salmon, at a minimum.

11. The EIS should evaluate in every alternative the potential for adjustments in long-term coordinated operations to assist CVP and SWP south-of-Delta service areas to meet and achieve Sustainable Groundwater Management Act goals and policies.

12. The EIS should make clear that USBR is proposing to maximize exports and delivery potential of CVP and SWP to south-of-Delta contractors subject to all applicable laws and regulations. These should include presidential executive orders relating to environmental justice, as well as state policies concerning environmental justice, the human right to water, and civil rights non-discrimination laws and policies. If USBR proposes changes to federal regulations as part of its proposed action, such changes should be evaluated to disclose all environmental impacts and potential mitigation measures, including water supply, water quality, aquatic and

terrestrial species, cultural resources, public services and utilities, land use, air quality, seismic risk, environmental justice, and many other environmental issue areas. The Delta and its upstream watersheds should be central to the scope of the proposed EIS.

13. The California Environmental Quality Act requires that lead agencies identify in their environmental impact reports the alternative that is environmentally superior to all others, including the proposed action/project.

Thank you for the opportunity to comment on this NOI. Please include our contact information on routing of any direct communications the USBR may have related to this proposed action and EIS.

Sincerely,

Barbara Barrigan-Parrilla
Executive Director
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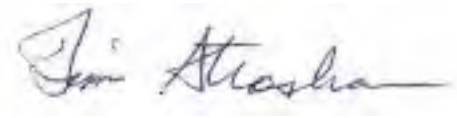

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cc: Carl Wilcox, California Department of Fish and Wildlife
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Tom Stokely, PCFFA/IFR
Gary Mulcahy, Winnemem Wintu Tribe
Osha Meserve, Local Agencies of the North Delta
Bill Jennings, California Sportfishing Protection Alliance
Chris Shutes, California Sportfishing Protection Alliance
Michael B. Jackson, California Water Impact Network

Harrison, Katrina <kharrison@usbr.gov>

Public comment on efforts to maximize water deliveries and power generation from Central Valley Project

Kelli Gant 01 <kelligant01@gmail.com> Wed, Jan 31, 2018 at 2:34 PM
Reply-To: kgant@tangella.com
To: kharrison@usbr.gov

Ms Harrison

Please accept the following comments on behalf of the Trinity Lake Revitalization Alliance, Inc. (TLRA) into your record of input on efforts to maximize water deliveries and power generation from Central Valley Project.

TLRA is a community-based, all-volunteer charitable corporation representing about 1,223 property owners, 500 residents, and seven forest communities that are adjacent to Trinity Reservoir north of Trinity Dam and five Trinity Lake marina businesses.

Our communities are bordered by the Trinity Alps Wilderness to the west, and Trinity Lake and the Trinity Unit of the Shasta-Whiskeytown-Trinity National Recreation Area to the east. Our entire economy is tourism recreation.

TLRA asks that Reclamation:

- Establish a minimum pool for Trinity Reservoir to protect an adequate lake level for our boating facilities and a cold water source for fishery restoration on the Trinity River. A minimum pool volume of 900,000 to 1,000,000 acre feet has been the request of the Trinity Adaptive Management Group (TAMWG) and long time reservoir management reform advocates.

- If a minimum pool, which is large enough sustain water recreation through mid-October is not establish, we request that Reclamation mitigate the impact by funding the construction of low-water boat launch facilities at Trinity Center and Fairview.

More Trinity Reservoir water would be available to valley users and for power generation later in the season if:

- An efficient cold water convenience system was constructed through Lewiston Reservoir to Trinity River from Trinity Reservoir. Currently, over 850,000 acre feet of water is used to keep Lewiston Reservoir water cool enough to meet the summer mandated temperature requirements in the Trinity River Record of Decision. Bringing water directly from Trinity Reservoir to the river would save water for use later in the year and helps our tourism economy.

Regards,
Kelli Gant
--

Kelli Gant

President
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AQUALLIANCE
DEFENDING NORTHERN CALIFORNIA WATERS

CSPA
CALIFORNIA SPORTFISHING PROTECTION ALLIANCE
Since 1983

california water impact network

February 1, 2018

Katrina Harrison
U.S. Bureau of Reclamation
2800 Cottage Way
Sacramento, CA 95825
Sent via email to kharrison@usbr.gov

RE: Comments on the Notice of Intent to Prepare a Draft Environmental Impact Statement, *Revisions to the Coordinated Long-Term Operation of the Central Valley Project and State Water Project, and Related Facilities*

Dear Ms. Harrison:

AquAlliance, the California Sportfishing Protection Alliance, and the California Water Impact Network (hereinafter "AquAlliance") submit the following comments and questions for the Notice of Intent To Prepare a Draft Environmental Impact Statement ("NOI"), *Revisions to the Coordinated Long-Term Operation of the Central Valley Project and State Water Project, and Related Facilities* ("Project").

I. Areas of Concern

A. Lack of Project Description Clarity

In summary, the "proposed action" is to obtain more water for points south of the area of origin, the Sacramento Valley. The scoping meetings held for the Project sought feedback on what should be considered in the planned National Environmental Policy Act ("NEPA") document. However, the "proposed action" is so poorly defined that it was quite difficult to address the Project at the Bureau of Reclamation ("Bureau") scoping meeting in Chico on January 25, 2018. As an example, the federal register notice[1] and the scoping meeting material fail to disclose the current amount of water the Central Valley Project ("CVP") exports, the proposed increase, and the combined current and proposed exports planned with the California Department of Water Resources ("DWR") through the State Water Project ("SWP"). Despite this deficiency, AquAlliance will elaborate on issues raised at the scoping meeting that are germane to water exports from the Sacramento Valley through the Delta.

[1] *Federal Register /Vol. 82, No. 249 / Friday, December 29, 2017 /Notices*. pp. 61789-61791.

B. Groundwater Conditions in the Sacramento Valley

The Draft Environmental Impact Statement ("DEIS") must address the consequence of declining Sacramento Valley groundwater levels. The NEPA review conducted by the Bureau in 2015[2] provided limited groundwater elevation data of the Sacramento Valley groundwater basin in the Groundwater Resources and Groundwater Quality chapter.[3] The 2015 DEIS erroneously concluded that, "Overall, the Sacramento Groundwater Basin is approximately balanced with respect to annual recharge and pumping demand."[4] Without defining "approximately balanced," the 2015 DEIS continued by stating, "However, there are several locations showing early signs of persistent drawdown, suggesting limitations due to increased groundwater use in dry years. Locations of persistent drawdown include: Glenn County, areas near Chico in Butte County, northern Sacramento County, and portions of Yolo County."[5] Unfortunately, the 2015 DEIS failed to elaborate through maps or text leaving the public without specific details regarding this serious decline in groundwater, something we highly encourage the Bureau to correct with the NEPA analysis proposed for the Project.

1. Conjunctive Use

Conjunctive water use ("CWU") of surface and groundwater by Sacramento Valley water districts contributes to declining groundwater. Historic, independent groundwater pumpers may be economically injured by declining aquifer levels. "While conjunctive use may prove successful for an individual or group of water users to manage an immediate situation, it is also possible for conjunctive use to unintentionally harm the groundwater basin and other groundwater users who are not involved in conjunctive use but are reliant on the same groundwater basin."[6]

If CWU is considered in any part of the Project or its alternatives, the DEIS must identify areas where communities, farms, residential wells, and groundwater dependent ecosystems ("GDE") may be impacted by CWU. "In order to identify potential habitat impacts associated with potential changes in water management practices, a program-specific network of shallow monitor monitoring wells should be developed to detect changes in water levels over the shallowest portion of the aquifer. In evaluating impacts to certain GDE species, it is important to discern both the rate of groundwater level change, as well as the cumulative change over the entire year. Data collection and monitoring frequency should be appropriately selected to support the temporal and long-term evaluations."[7]

2. Sustainable Groundwater Management Act of California

Under the Sustainable Groundwater Management Act, critically over-drafted basins must come up with a Groundwater Sustainability Plan ("GSP") by 1/31/20. DWR will not finish reviewing all of the GSPs until 2024. The Bureau's project timing is cause for concern. At minimum, over-drafted basins must have an opportunity to create plans without including whatever additional surface water the Bureau proposes to make available. To do otherwise may result in a GSP for one region that would intensify unsustainable water transfers in another. A conservative approach would dictate that no major revisions to CVP/SWP water regimes would take place until DWR has an opportunity to review all of the GSPs.

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[2] Bureau 2015. *Coordinated Long-Term Operation of the Central Valley Project and State Water Project* Draft Environmental Impact Statement
[3] *(Id.)* pp. 7-1 to 7-184.
[4] *(Id.)* p. 7-14.
[5] *(Id.)*
[6] Dudley, Toccoy and Allan Fulton, 2005. *Conjunctive Water Management: What Is It? Why Consider It? What are the Challenges?* https://www.buttecounty.net/Portals/26/Education/second1.pdf
[7] McManus, Dan (DWR) et al 2007. *Sacramento Valley Water Resource Monitoring, Data Collection and Evaluation Framework*. pp. 5-6

C. Impacts to Native Tribes

The DEIS must evaluate the impacts to indigenous people who have been deprived of their abundant supply of numerous salmon runs disrupted by CVP/SWP infrastructure. The DEIS must examine an alternative that facilitates the return of spawning salmon in the McCloud River. The DEIS must consider the cultural ramifications of raising of the Shasta Dam. There are culturally sensitive sites that will be flooded if the dam is raised. These places are the last remaining sacred sites of the Winnemem Wintu people.[8]

D. Impacts to the Upstream Watershed

The DEIS must analyze how the inflow of fresh water drives the health of the Central Valley watershed. The elimination of the majority of spawning anadromous fish is depriving riparian corridors, agricultural land and forested watersheds of marine derived nutrients. "Pacific salmon transfer large quantities of marine-derived nutrients to adjacent forest ecosystems with profound effects on plant and wildlife production…These data suggest that robust salmon runs continue to provide important ecological services with high economic value, even in impaired watersheds. Loss of Pacific salmon can not only negatively affect stream and riparian ecosystem function, but can also affect local economies where agriculture and salmon streams coexist."[9] The DEIS must include historic details and charts regarding what has happened to fish and other species from past and current operations of the two projects – the CVP (Shasta) and the SWP (Oroville).

In addition, streamflow depletion must be disclosed and analyzed. The CVP and SWP have extended water far from the areas of origin for agricultural, urban, and industrial uses. In so doing, particularly with paper water, as discussed further below, the state and federal governments have facilitated a destructively unrealistic demand for water. Ever willing to destroy natural systems to meet demand for profit, the San Joaquin River dried up and subsidence caused by groundwater depletion in the San Joaquin Valley is even cracking water conveyance facilities.[10] Enter conjunctive use where the Agencies facilitate and their contractors implement river water sales and pump groundwater to continue crop production (see above). The continual, long-term groundwater overdraft in the San Joaquin Valley, the expansion of new permanent crops in both the San Joaquin and Sacramento valleys, and groundwater substitution transfers by CVP and SWP contractors *all* cause streamflow depletion. The current state of streamflow depletion in the Sacramento River basin and how the CVP and SWP cause streamflow depletion must be disclosed in the DEIS.

E. Source Water

The Project must unambiguously identify the source water. The unimpaired runoff of the Sacramento River basin is 21.6 MAF, but the consumptive use claims are an extraordinary 120.6 MAF – 5.6 times more claims than there is available water.[11]

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[8] Sisk, Caleen 2017. *Personal Communication.*

[9] Merz, Joseph E., et al. 2006. *Salmon, Wildlife, and Wine: Marine-Derived Nutrients in Human-Dominated Ecosystems of Central California*. https://pdfs.semanticscholar.org/1342/ce8aa20421c8531c7466bdb2a64bc60cc774.pdf

[10] Sneed, et al., 2012. Abstract: *Renewed Rapid Subsidence in the San Joaquin Valley, California*.
"The location and magnitude of land subsidence during 2006–10 in parts of the SJV were determined by using an integration of Interferometric Synthetic Aperture Radar (InSAR), Global Positioning System (GPS), and borehole extensometer techniques. Results of the InSAR measurements indicate that a 3,200-km^2 area was affected by at least 20 mm of subsidence during 2008–10, with a localized maximum subsidence of at least 540 mm. Furthermore, InSAR results indicate subsidence rates doubled during 2008. Results of a comparison of GPS, extensometer, and groundwater-level data suggest that most of the compaction occurred in the deep aquifer system, that the critical head in some parts of the deep system was exceeded in 2008, and that the subsidence measured during 2008–10 was largely permanent." Conference presentation at *Water for Seven Generations: Will California Prepare For It?*, Chico, CA.

[11] California Water Impact Network, AquAlliance, and California Sportfishing Protection Alliance 2012. *Testimony on Water*

Since South of Delta exports depend on Sacramento River inflows, where will the increased export water come from during all years and in particular, drought years? The Sacramento River hydrology clearly shows that there are few years that can be clearly identified as average; most of the years are clustered in to two groups, a dry group (56% of the years, average 12.5 MAF, 4-river index) and a wet group (44% of the years, average 24 MAF, 4-river index). Some of the driest years can barely support senior diverters in the Sacramento Valley with very small allowances for Delta outflow.

The total claims to consumptive water available in the Delta watershed, including the Trinity River and its tributaries, must be part of the DEIS as well as disclosure of the CVP's junior claims.

F. Freshwater Flow to the Ocean Sustains the San Francisco Bay

The DEIS must consider how water diversions create artificial, super critically dry years in the San Francisco Bay. This analysis must consider the following:

- How will dry years shift the size and location of the ecologically important salinity mixing zone?
- How will water diversions divert the inflow of nutrients, food, and sediment from the watershed that are vital components of fish and wildlife habitat?
- How will decreased flows prevent periodic flushing and allow pollutants to persist?
- How will reduced flows facilitate invasions by undesirable non-native species?[12]

The DEIS must analyze how the dams and diversions have prevented sediment from flowing into the Bay Estuary depriving the Bay and the down current ocean beaches of sand needed to sustain the existence of sandy beaches. The DEIS must consider the role of sediment transport as a means of dealing with rising sea levels. Marsh formation is a critical tool in dealing with rising sea levels. The DEIS must examine the role of how freshwater flow regimes in the estuary facilitates the preservation and growth of freshwater marshes in response to rising sea levels. According to The Bay Institute, "Organic matter accumulates faster in freshwater marshes than it does in saltwater marshes. Wetlands and beaches act as natural flood barriers to protect shoreline communities in the Bay Area."[13]

G. Delta Impacts

1. Given that CVP has opted out of the Twin Tunnels of the California WaterFix, it is presumed that the CVP will pump export water via cross-Delta transfers. What are the maximum pumping rates proposed? Is the CVP asking for an increase in their permitted pumping levels? If there are to be increases, does the proposed plan expect to install greater pumping capacity at Tracy? How much?
2. If the CVP has opted out of the Twin Tunnels part of the California WaterFix, is the Bureau still bound by the "restore the Delta" elements of the plan? How do increased CVP cross-Delta transfers help restore the Delta?
3. New findings show that the "Water Year Type" index is without scientific merit and bias Delta operations to favor exports over outflows. What new Delta standards is the CVP proposing to protect the Delta properly?

Availability Analysis for Trinity, Sacramento, and San Joaquin River Basins Tributary to the Bay-Delta Estuary.

[12] The Bay Institute, 2016. *San Francisco Bay; The Freshwater-Starved Estuary. How Water Flowing to the Ocean Sustains California's Greatest Aquatic Ecosystem*. https://bayecotarium.org/wp-content/uploads/freshwater_report.pdf. p. 10.

[13] *(Id.)*

4. Analyses of the San Joaquin River inflows at Vernalis indicate that SJR inflows to the Delta must be increase significantly to mitigate reverse flows in Old River when export pumping occurs. What plans are the CVP proposing to increase SJR inflows to suppress reverse flows? What good are the Twin Tunnels if CVP operations continue to foster reverse flows and other assaults on the Delta? Does the CVP have a responsibility to help restore the Delta?
5. How does the CVP plan to store increased exports south of the Delta? Does the proposed plan contemplate the construction of additional reservoirs south of the Delta? If not who will be the recipients of the increased exports?
6. How will the CVP manage export pumping in the driest years without affecting Delta health (e.g. increases in salinity, reverse flows at the pumps, species impacts, required outflows)?
7. How does the Bureau and the CVP intend to comply with the Public Trust Doctrine in this process? Has a Public Trust analysis of the public trust assets in the Delta watershed been completed? If not, it should be completed for the Project.

H. Intersection with the California Environmental Quality Act

AquAlliance inquired about the nexus between the California Environmental Quality Act ("CEQA") and the NEPA process at the Bureau's scoping meeting in Chico on January 25, 2018. A clear answer was not provided, only an ambiguous thought that the operator of the SWP, DWR, needed more information about the Project to determine if it triggered CEQA. This is understandable considering the vacuous description of the project in the NOI as noted above; however, it leaves the public at a loss regarding the NEPA and CEQA processes. The relationship of the CVP and SWP and their coordinated operations, which is in the NOI title and noted repeatedly in the NOI, must be clarified in detail in the DEIS.

II. Alternatives

A. Watershed Rehabilitation as Storage

The DEIS must evaluate alternatives that include Sierra/Cascade watershed management that rehabilitates mountain meadow restoration and restores wildfire into the fire-evolved ecosystem. Natural fire regimes restore forest structure that reduces small diameter ladder fuel and enhances precipitation percolation. Degraded mountain meadows release runoff while healthy meadows holds and slowly releases water in storage. "Meadows are also important for water storage and habitat connectivity, providing California with water to sustain its ever-growing population and agricultural endeavors. Promoting the restoration of mountain meadows is critical for supplying our state with enough water to grow and habitat for the plant and animal species that we cherish."[14]

B. Decreasing Demand Alternative

The DEIS must evaluate an alternative that would focus on reduction of water demand and include elements such as:

- Expanding agricultural and urban conservation.
- Retiring contaminated lands. There are approximately 1 million acres of irrigated land in the San Joaquin Valley and the Tulare Lake Basin tainted with salts and trace metals like selenium, boron, arsenic, and mercury. This water drains back—after leaching from these soils the salts and trace metals—into sloughs and wetlands and the San Joaquin River, carrying along these pollutants. Retirement of these lands from irrigation usage would stop wasteful use of precious

[14] Earthwatch Institute, 2017, *Restoring Sierra Meadows: The Source of California's Water*. p. 1. http://earthwatch.org/briefings/web-teen-earthwatch-restoring-sierra-meadows-the-source-of-californias-water-2017.pdf

fresh water resources and help stem further bioaccumulation of these toxins that have settled in the sediments of these water bodies. The Lead and Approving Agencies have known about this massive pollution of soil and water in the area of demand for over three decades.[15] Whether or not this is a preference for contractors, this pragmatic element should be fully explored.

C. Reducing Dependence on Water Imported From the Delta

The DEIS must contain an alternative that honors California Water Code Section 85021 that requires all regions of California reduce their dependence on water imported from the Delta. "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."[16]

We thank you for the opportunity to affect the NEPA document.

Sincerely,

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[15] http://www.usbr.gov/mp/cvpia/3408h/

[16] California Water Code. DIVISION 35. SACRAMENTO-SAN JOAQUIN DELTA REFORM ACT OF 2009 [85000 - 85350] (Division 35 added by Stats. 2009, 7th Ex. Sess., Ch. 5, Sec. 39.)
https://leginfo.legislature.ca.gov/faces/codes_displayText.xhtml?lawCode=WAT&division=35.&title=&part=1.&chapter=2.&article=

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Audubon CALIFORNIA

February 1, 2018

Ms. Katrina Harris
Project Manager
Bureau of Reclamation
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Sacramento CA 95835

Re: Comments on the Notice of Intent to Prepare a Draft EIS on Revisions to the Coordinated Long-term Operation of the Central Valley Project and State Water Project

Dear Ms. Harrison

Audubon California submits these comments in response to the Bureau of Reclamation's Notice of Intent to Prepare a Draft Environmental Impact Statement on Revisions to the Coordinated Long-Term Operation of the Central Valley Project and the State Water Project, and Related Facilities (NOI).

Audubon California has over 325,000 members and supporters statewide who care about the protection of birds, wildlife and their habitat. The NOI as currently described has the potential to threaten an already fragmented system of habitat areas that receive less than the mandated share of water needed to create habitat and are frequently underfunded, limiting the ability to sustain habitat and wildlife populations. With roughly 90 percent of wetlands, floodplain and riparian habitat gone in the Central Valley, Reclamation should focus on achieving the not yet met co-equal goals of operating the system for the protection and restoration of fish and wildlife in addition to delivery of water supply rather than pursue processes that threaten further damage. Actions taken here in the Central Valley have international implications. The habitat we provide here is a critical link along the Pacific Flyway. We strongly encourage Reclamation to keep these issues in mind when pursuing the draft EIS.

The NOI published in the Federal Register on December 29, 2017 states that the Bureau of Reclamation proposes to evaluate alternatives to the current operations of the CVP to maximize water deliveries and optimize marketable power generation. These alternatives will be analyzed consistent with applicable laws, contractual obligations, and agreements. The analysis will also address the status of species listed under the Endangered Species Act, to the extent that they affect operational flexibility. We strongly object to the stated purposes in that this NOI is not consistent with existing state and federal law which require that the CVP be operated to ensure not only water supply but the "mitigation, protection and restoration of fish and wildlife."

Among the applicable laws that must be considered is the Central Valley Project Improvement Act (CVPIA). The 1992 Central Valley Project Improvement Act (CVPIA) mandates that the Bureau of Reclamation (Reclamation) provide sufficient water supplies to 19 wetland habitat areas in the Central Valley. Reclamation collects fees from water contractors and power users into a Restoration Fund, which provides funding for the acquisition of water supplies and for conveying the water supplies to the refuges. Refuge contractors rely almost exclusively on their CVP contract supplies and have little ability to supplement those supplies, unlike many other CVP water contractors who have access to supplemental groundwater and can acquire water on the private market.

In the 25-year history of the Act, Reclamation has only twice provided full Incremental Level 4 supplies, and in some years, delivers less than the full Level 2 baseline refuge water supply. Further, these refuges routinely receive less than 30% of their mandated spring/summer contractual supplies. In the drought years of 2014 and 2015, spring and summer supplies were cut off entirely for refuges in the San Joaquin Valley. These summer irrigations are just as critical to wildlife areas and refuges as they are to farmers; spring irrigation provides the biomass and energetics the landscape needs in the fall and winter for resident and migratory species. Not prioritizing the mitigation, protection and restoration of fish and wildlife as part of this process will only further harm species populations, public access to refuges, and the many other benefits that healthy, functioning aquatic, riparian and wetland ecosystems provide to wildlife and people.

We have a variety of concerns and suggestions that Reclamation should consider while engaging on this upcoming process. We believe this process is largely intended to meet the desire of agricultural and municipal CVP contractors to achieve greater water supply reliability. We urge you, in the strongest possible terms, to include equal discussion about maximizing water supplies to CVP refuge water supply contractors and the fish and wildlife benefits required under CVPIA. Failure to also consider and address these water deliveries and Reclamation's longstanding failure to satisfy these obligations in full would run contrary to multiple international agreements, federal and state laws and regulations, as well as violating the basic principles of equal and fair governance.

Audubon California asks that the following be addressed under the analysis of alternatives:

- **Maintain equal priority among CVP contractors.** Any attempts to eliminate the equal priority that CVPIA refuge water deliveries share with senior water contractors, by creating a new "obligation to satisfy" other senior contracts could result in a new approach to CVP water allocations that would leave wildlife refuges completely dry in some years. This would have significant impacts on bird populations, listed species including the Giant Garter Snake and human populations that enjoy these refuges for public access and recreation.

- **Incremental Level 4.** The analysis must address the requirement in the CVPIA (*PL 102-575, Section 3406(d)(2)*) that wildlife refuges be provided with the full Level 4 supply of water from 2002 forward. This requirement has only been met in two out of the 16 years since full Level 4 has been required. This NOI is an opportunity to address the issue of not meeting the mandates by ensuring that all alternatives include full, reliable and properly timed water deliveries to wildlife refuges. Additionally, all modeling and analyses of system operations done in this or later federal programmatic or project level documents must accurately depict mandated, full Level 4 refuge water supply deliveries and timing.

- **Maintain the Restoration Fund.** Achieving marketability of CVP power generation should not occur at the expense of the Restoration Fund. Power contractors pay more into the Restoration Fund in dry years, but then make significantly reduced payments in wet years.. Reclamation should conduct an analysis to ensure that the Restoration Fund under the CVPIA (*PL 102-575, Section 3407*) is fully appropriated and collected annually to provide the necessary funding to meet the Level 4 requirement. The amount necessary to meet the requirements of the CVPIA should be reviewed and, if necessary, to be adjusted to reflect changes in costs since 1992 and going forward.

- **Include Climate Change in Analysis**. The EIS must include the likely effects of climate change in its analysis. Extreme weather events, the magnitude of which have been demonstrated over the last five years, are predicted to increase in the coming years. Modeling that anticipates the impacts from climate change is available for incorporation into this EIS. To exclude climate change from this and future analysis of operations would skew results towards a hydrological system and norm that no longer exists, making the results irrelevant.

We offer several suggestions that would allow for increase water supply reliability for refuges south of the Delta:

- **Facilitate "carryover" in San Luis Reservoir for South of Delta refuges.** Currently, Reclamation imposes a 150,000 acre feet cap on carryover in San Luis on an annual basis and restricts that carryover to agricultural contractors. In previous years, Reclamation has denied the south of Delta refuge contractors the ability to carryover winter water for spring irrigation, even though south of Delta refuge contractors are CVP contractors of equal standing to any other Reclamation customers. This arbitrary decision to restrict carryover only to agricultural water agencies is unequitable and promotes water waste, encouraging refuges and wildlife areas to "use it or lose it" with annual allocations. Additionally, it limits refuges ability to do spring irrigations which provide the food needed for winter migratory birds which arrive here in the millions. Without sufficient food, winter water has reduced importance for migratory birds. Also, there are several species of concern or listed species that rely on spring and summer water in wetlands for breeding and habitat including the Tricolored Blackbird and the Giant Garter Snake. Allowing carryover of the small amount of refuge water requested would have tremendous environmental benefits.

- **Facilitate Inter-refuge transfers among the Federal and State refuges.** Because of limitations in the necessary infrastructure and conveyance required under CVPIA, 5 of the 19 Federal refuges cannot fully access their Level 2 and IL 4 supplies. Reclamation's historic policy has denied refuge managers the ability to transfer blocks of water dedicated for wildlife purposes from refuges that cannot or do not need their allotment to those that do. This decision to deny the ability to move water to where it is most needed is punitive and results in a forfeit of legally allocated water to the CVP refuge system. Reclamation should allow flexibility among refuge water contractors including allowing pooling, rescheduling and transfers.

We have several suggestions for you to consider that could improve power marketability, without negatively impacting fish and wildlife water supplies or payments into the Restoration Fund:

- **Finalize the Croffsets proposal**. Provide a credit for past payments, which WAPA would use to offset at least $10 million per year in capital repayment. If this $10 million credit had been applied for the past 13 years, CVP hydropower would have been below market rate in two of the five years when it was above (2012 and 2014). The average annual rate would have been less than $28 per MWH, approaching the lowest known average market rate. The total Croffsets credit is currently calculated at $92 million, but future credits would accrue if power contractors make payments into the Restoration Fund above their CVP cost-allocation proportion. Phase II of the Croffsets proposal,

which will review additional ways to reduce contractor obligations, would result in an even higher credit, as would other solutions that are described below.

- **Finalize the Cost Allocation Study.** The draft Cost Allocation Study (CAS) for the CVP reduces the capital repayment obligation for commercial power contractors by $28.4 million. The final capital repayment deadline for the CVP occurs in 13 years (2030). Spreading the proposed CAS repayment reduction over this timeframe will reduce hydropower rates by more than $2 million per year. If this reduction had been applied for the last 13 years, the cost of CVP hydropower would have been reduced by almost $1 per MWH. The final CAS will also reduce the O&M rate for power customers, further dropping the price of CVP hydropower.

- **Revise ability-to-pay waivers and accounting practices.** Reclamation is now reviewing historical ability-to-pay waivers for 29 CVP water contractors. Each year Reclamation waives half a million dollars in Restoration Fund charges that would otherwise accrue to those water contractors, and instead charges that amount to hydropower contractors. Restoration Fund payments should be the last type of payment waived for water contractors. When updating its ability-to-pay studies, Reclamation should prioritize only partial waivers, if warranted, that do not waive Restoration Fund payments. Cumulatively, Reclamation has waived $45.5 million in Restoration Fund collections from water contractors, listing those foregone charges as a hydropower cost obligation on the ECO Report. Reclamation should adjust this accounting practice and provide power contractors with an additional $45.5 million Croffsets credit.

- **Revise State Trust Fund accounting practices.** When Reclamation spends money on a reimbursable environmental mandate it lists that expenditure as an obligation to be reimbursed by CVP contractors. Reclamation has not collected more from contractors than the annual CVPIA Restoration Fund payments, but the reimbursable obligation remains on the books (i.e. the "ECO" Report of environmental credits and offsets). This practice should not apply to expenditures of non-federal dollars. Reclamation utilizes a State Trust Fund made up of payments by the State for environmental programs. Reclamation counts $49.6 million of expenditures from that fund as reimbursable to the federal Treasury by contractors, even though the expenditures were not made from federal appropriations. The ECO Report should be revised to reduce the contractor obligation by $46.9 million, providing an additional Croffsets credit of $12 million to power contractors.

- **Reset the three-year rolling average.** Inconsistent collections in the early years of the CVPIA created an uneven three-year rolling average of Restoration Fund collections, which fluctuates from $56 million in high years to $42 million in low years. Reclamation should undertake a three-year "reset" to fix this problem, making even collections in each year, which would eliminate the fluctuations and keep collections consistent at $49 million per year (indexed over time). This would increase certainty in hydropower rates by avoiding price spikes in high collection years.

- **Help WAPA provide an increased annual Croffsets credit.** At this time, WAPA will only commit to applying the Croffsets credit to relieve $10 million in annual capital repayment charges. This is because most capital and O&M charges are "prepaid" by hydropower contractors, i.e. not appropriated to Reclamation but collected directly from contractors and spent accordingly. Those

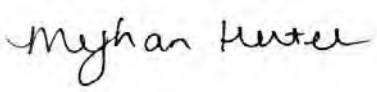
costs are also projected to increase in upcoming years. If Reclamation requested some of these costs as direct appropriations in its Water and Related Resources budget, the annual Croffsets credit could be increased by a like amount, lowering the cost of CVP hydropower to below-market rates in every year.

- **Change California's definition of renewal energy**. Existing CVP hydropower produced in California is excluded from the definition of "renewable energy" in the State's requirements for utilities. As the renewable portfolio standard increases to 100%, existing hydropower sources should be included in that definition. This would make CVP hydropower much more marketable, even if the price remains above market rate in certain years.

When noticing this effort, and inviting public comment, your announcement stated "The CVP is a major water source for agricultural, municipal and industrial, and fish and wildlife demands in California. This project will evaluate alternatives to restore water supply in consideration of all of the authorized purposes of the CVP." We encourage you to carefully review this statement and recognize that your efforts must extend to ALL purposes of the CVP and the CVPIA, to include a discussion about meeting Reclamation's currently unmet obligations to fish and wildlife demands, a failure that has existed for over 25 years.

Thank you for your consideration of these concerns. Our organizations welcome the opportunity to provide further information about these issues and we will continue to work with other stakeholders to lessen impacts to agriculture while preserving the fish and refuge water supply provisions of the CVPIA.

Sincerely,



Meghan Hertel
Interim State Co-Director
Audubon California

February 1, 2018

Ms. Katrina Harrison
Project Manager
Bureau of Reclamation, Bay-Delta Office
801 I Street, Suite 140
Sacramento, CA 95814-2536

Re: Comments on the Notice of Intent to prepare a draft EIS on revisions to the Coordinated Long-term Operation of the Central Valley Project and State Water Project

Dear Ms. Harrison:

California Waterfowl appreciates the opportunity to comment on the scope of a draft environmental impact statement for analyzing potential modifications to the operations of the Central Valley Project (CVP). The California Waterfowl Association is a statewide nonprofit organization whose principal objective is the conservation of the state's waterfowl, wetlands, and hunting heritage. California Waterfowl believes hunters have been the most important force in conserving waterfowl and wetlands.

The Notice of Intent published in the Federal Register on December 29, 2017 states that the Bureau of Reclamation proposes to evaluate alternatives to the current operations of the CVP that maximize water deliveries and optimize marketable power generation. These alternatives will be analyzed consistent with applicable laws, contractual obligations, and agreements. The analysis will address the status of species listed under the Endangered Species Act, to the extent that they affect operational flexibility.

Among the applicable laws that will be reviewed will be the Central Valley Project Improvement Act (CVPIA). Under the CVPIA, the Bureau provides water supplies to wildlife refuges in the Sacramento and San Joaquin Valleys. The Bureau also collects fees from water contractors and power users into a Restoration Fund, which provides funding for the acquisition of water supplies and for conveying the water supplies to the refuges.

California Waterfowl has two main concerns that should be addressed under the analysis of alternatives to operations of the CVP:

1. The analysis must address the requirement in the CVPIA (*PL 102-575, Section 3406(d)(2)*) that wildlife refuges be provided with the full Level 4 supply of water from 2002 forward. This requirement has been met in two out of the 16 years since full Level 4 has been required.
2. The analysis must ensure that the Restoration Fund under the CVPIA (*PL 102-575, Section 3407*) is fully appropriated and collected annually to provide the necessary funding to meet the Level 4

requirement. The amount necessary to meet the requirements of the CVPIA should be reviewed and, if necessary, to be adjusted to reflect changes in costs since 1992 and going forward.

The Central Valley of California is the most important waterfowl wintering area in the Pacific Flyway. It supports up to 60 percent of the total Flyway population in some years. The national wildlife refuges and state wildlife areas in California protect about one third of the remaining wetland habitat for waterfowl in the state. Millions of birds migrating on the Pacific Flyway each year rely on the refuges for their winter habitat and food supplies. Without the water and money made available by the CVPIA, these birds would lose a significant portion of their habitat in California.

Although the CVPIA has only provided the refuges the full water supplies required by the CVPIA twice in 25 years, overall, the CVPIA has been a success with respect to waterfowl. Since the passage of the CVPIA in 1992, the U.S. Fish & Wildlife Service and the California Department of Fish and Wildlife have documented:

- A 300 percent increase in waterfowl food production within the Grassland Resource Conservation District;
- An 89 percent reduction in avian disease outbreaks on the Sacramento National Wildlife Refuge complex;
- A 49 percent increase in fall shorebird use valley-wide;
- A 50 percent increase in the number of heron and egret rookeries in the San Joaquin Valley;
- Increases in populations of threatened or endangered species; and,
- Marked increases in white-faced ibis and Sandhill cranes. (*Central Valley Joint Venture: 2006 Implementation Plan.*)

In January 2018, Interior Department Secretary Zinke announced the creation of a Hunting and Shooting Sports Conservation Council. The Council is tasked with providing recommendations to the Department on policies and programs that:

- Conserve and restore wetlands, agricultural lands, grasslands, forests, and range land habitats;
- Promote opportunities and expand access to hunting and shooting sports on public and private lands;
- Encourages hunting and shooting safety by developing ranges on public lands;
- Recruit and retain new shooters and hunters;
- Increase public awareness of the importance of wildlife conservation and the social and economic benefits of hunting and shooting;
- Encourage coordination among the public, hunting and shooting sports community, wildlife conservation groups, state, tribal, territorial, and federal government.

Recently, there has been some controversy over the way in which the Restoration Fund is collected and distributed, particularly with respect to increased obligations placed on CVP power contractors during drought years when water contractors' allocations are reduced substantially. The Bureau has proposed a

"credits and offsets" formula that shows promise in providing an equitable settlement for the power contractors. The Restoration Fund is the means by which refuges are able to obtain and to convey incremental Level 4 water. Without the Restoration Fund or an equivalent funding source, the requirement of a full Level 4 supply cannot be met.

Continuation of the CVPIA water supply programs and the Restoration Fund is vital to accomplishing these activities in California. Changes in CVP operations that would facilitate the provision of full Level 4 water supplies should be a focus of the analysis process. The process identified in the Notice of Intent could be highly beneficial to waterfowl, other migratory birds, and wetlands-dependent species in California if the operations of the CVPIA water supply programs are improved.

Thank you for your consideration of these comments. If you have any questions or concerns, please address them to: Jeffrey A. Volberg, Director of Water Law & Policy, (916) 217-5117, or at jvolberg@calwaterfowl.org.

Sincerely,

Jeffrey A. Volberg
Director of Water Law & Policy

Coalition for a Sustainable Delta

February 1, 2018

VIA EMAIL AND U.S. MAIL

U.S. Bureau of Reclamation
Bay-Delta Office
801 I Street, Suite 140
Sacramento, California 92814-2536
kharrison@usbr.gov

Re: Bureau of Reclamation's Notice of Intent to Prepare Environmental Impact Statement for Analyzing Potential Modifications to Continued Long-Term Operation of the Central Valley Project in Coordination with the State Water Project

Dear Ms. Harrison:

The Coalition for a Sustainable Delta ("Coalition") is a California nonprofit corporation comprised of agricultural, municipal, and industrial water users, as well as individuals in the San Joaquin Valley. The Coalition and its members depend on water from the Sacramento-San Joaquin Delta ("Delta") for their continued livelihood. Individual Coalition members frequently use the Delta for environmental, aesthetic, and recreational purposes; thus, the economic and non-economic interests of the Coalition and its members depend on a healthy and sustainable Delta ecosystem.

The Coalition appreciates the opportunity to review and comment on the Notice of Intent ("NOI") to Prepare a Draft Environmental Impact Statement published in the *Federal Register* on December 29, 2017. 82 Fed. Reg. 61,789 (Dec. 29, 2017). Further, we appreciate the Bureau of Reclamation's ("Bureau") effort to seek input early in the environmental review process, demonstrating a commitment to cooperative engagement both to inform the public and to guide government decision-making consistent with the Council on Environmental Quality's ("CEQ") regulations for implementing the National Environmental Policy Act ("NEPA"). 40 C.F.R. § 1501.2, 1501.7.

The NOI, which describes the Bureau's intentions at this early stage in the environmental review process, indicates the Bureau will analyze "potential modifications to the continued long-term operation of the federal Central Valley Project (CVP), for its authorized purposes, in a coordinated manner with the State Water Project (SWP), for its authorized purposes." 82 Fed. Reg. at 61,789. The NOI goes on to state that the Bureau seeks to "maximize water deliveries and optimize marketable power generation consistent with applicable laws, contractual obligations, and agreements; and to augment operational flexibility by addressing the status of

listed species." *Id*. at 61,790. We fully support these efforts and appreciate the Bureau's efforts in this regard.

We note the indication, in multiple places in the NOI, that the purpose is to address continued operation of the CVP in a coordinated manner with the SWP, and we urge the Bureau to work closely and collaboratively with the Department of Water Resources ("DWR") and State Water Contractors throughout the environmental review process. This is essential because under the Coordination Operations Agreement the CVP and SWP are operated in an integrated manner. Doing so inures to the benefit of both Projects and their respective end users. In addition, because the Bureau and DWR's respective plans and activities can trigger various environmental permitting requirements, coordination between the agencies is critical to developing and implementing an efficient and timely permitting strategy.

In light of the fact that the Bureau requested reinitiation of consultation regarding continued operations of the CVP and SWP in 2016 and consultation is not yet completed, we believe it is important for the Bureau to clarify that **reinitiation is occurring on a separate track from the action described in the NOI**. The other activities described in the NOI, including water and energy supply projects, should be the subject of separate environmental review and regulatory approval from continued operations. At this point, it is not by any means clear that reinitiation regarding continued operations will trigger the obligation to conduct environmental review under NEPA. Consultation on ongoing operations would only trigger such review in the event that it results in a change in the status quo that qualifies as a major Federal action that effects the quality of the human environment. 42 U.S.C. § 4332(2)(C); see also *Upper Snake River Chapter of Trout Unlimited v. Hodel*, 921 F.2d 232, 235, (9th Cir.1990); *Burbank Anti-Noise Group v. Goldschmidt*, 623 F.2d 115, 116 (9th Cir.1980).

The NOI indicates the Bureau's commitment to prepare an Environmental Impact Statement (EIS) then characterizes the document it intends to prepare variously as a "programmatic EIS" and an EIS that is "primarily programmatic in nature." 82 Fed. Reg. at 61,690. Here, we ask for further clarification. In doing so, we urge the Bureau to state in no uncertain terms that the EIS will not include activities that are covered by another EIS, an environmental assessment, or a categorical exclusion, or that do not trigger review. We further urge the Bureau to delineate what actions will be analyzed at a programmatic level and what actions, if any, will be analyzed at a project-specific level. There may be good reason to undertake separate environmental review of independent actions via a distinct process, such as decisions whether (and on what terms) to renew existing long-term contracts for water supplies from the CVP or to take action to address certain stressors on listed fish species.

While some of the activities identified may be ripe for review at a programmatic level given the status of existing planning efforts and the time horizon to act, such as the potential to increase storage both north and south of the Delta, there may be an opportunity to pursue other activities (either with project-level review or without the need for further review) at this stage.

For example, we urge the Bureau to consider modifying operations of the CVP and SWP by eliminating the Fall X2 Action (Action 4) and Component 3 of the Reasonable and Prudent Alternative prescribed by the U.S. Fish and Wildlife Service ("Service") in its 2008 Biological Opinion for Continued Operations of the Central Valley Project and State Water Project. This could occur without further environmental review and would likely improve water supplies while not negatively impacting fish species. The Fall X2 Action is based on the false premise that X2 is a surrogate indicator of Delta smelt habitat suitability and availability. *Id*. at 373. The use of surrogates in conservation planning is commonplace, but in general it is unsupported by ecological theory or empirical research. *E.g.*, S.J. Andelman. and W.F. Fagan. 2000. Umbrellas and flagships: efficient conservation or expensive mistakes. Proceedings of the National Academy of Sciences 97:5954-5959; P.B. Landres. 1992. Ecological Indicators: Panacea or Liability? Pages 1295-1318 in D.H. McKenzie, D.E. Hyatt, and V. J. McDonald, editors. Ecological Indicators, Vol. 2. Elsevier Applied Science, London. When surrogates are used, there is widespread agreement that they must first be validated. D.D. Murphy et al. 2011. A critical assessment of the use of surrogate species in conservation planning in the Sacramento-San Joaquin Delta, California (U.S.A.). Conservation Biology 25:873–878; S.J. Wenger. 2008. Use of surrogates to predict the stressor response of imperiled species. Conservation Biology 22:1564-1571; T. Caro, J. Eadie and A. Sih. 2005. Use of substitute species in conservation biology. Conservation Biology 19:1821-1826.

The Service did not make an effort to validate its assumption that X2 is a defensible proxy for Delta smelt habitat suitability and availability in its 2008 Biological Opinion. Nor did the record for that agency decision document include indicia of an effort to validate the surrogate relationship. There is strong evidence that the presumed surrogate relationship is false, including evidence that Delta smelt reside year-round in freshwater circumstances far upstream from the location of X2 in the estuary. *E.g.*, T. Sommer et al. 2011. The spawning migration of delta smelt in the upper San Francisco estuary. San Francisco Estuary and Watershed Science 9(2); J. Merz et al. 2011. Spatial perspective for delta smelt: a summary of contemporary survey data. California Fish and Game 97:164–189; T. Sommer and F. Mejia. 2013. A place to call home: a synthesis of delta smelt habitat in the upper San Francisco estuary. San Francisco Estuary and Watershed Science 11(2); D.D. Murphy and S. Hamilton. 2013. Eastward migration or marsh-ward dispersal: exercising survey data to elicit an understanding of seasonal movement of delta smelt. San Francisco Estuary and Watershed Science 11(3).

Revisiting the Fall X2 Action at this point time is logical in light of the foregoing, which includes data and analyses completed since the Service issued the 2008 Biological Opinion. And it is also necessary in light of the Service's comment to "conduct a comprehensive review of the outcomes of the Action and the effectiveness of the adaptive management program ten years from the signing of the biological opinion, or sooner if circumstances warrant." 2008 Biological Opinion for Continued Operations of the Central Valley Project and State Water Project at 283. Because the entire house of cards that is the Fall X2 Action rests on the premise that X2 is a surrogate for Delta smelt habitat – and that premise is false – we urge the Bureau to evaluate

eliminating the action, which will better enable the agency to meet its stated purpose to maximize water deliveries. 82 Fed. Reg. at 61,790.

Likewise, the Bureau should evaluate predation by non-native fish on native, listed fish within the Delta as a "beneficial non-flow measure[] to decrease stressors." *Id*. Depending on the steps taken, this activity could be preceded by project-level environmental review or may be ripe for action absent further review. The fact that predation is a major source of mortality of listed fish including Central Valley spring-run Chinook salmon, Central Valley steelhead, Delta smelt, and Sacramento River winter-run Chinook salmon is well documented. For example, in a 2011 report to the California Fish and Game Commission, the then-Department of Fish and Game concluded "studies of striped bass feeding habits indicate they consume an enormous volume of fish, overlap in their geographic range with the listed species, and have historically consumed listed species, at times in very substantial quantities." Department of Fish and Game, Report and Recommendation to the Fish and Game Commission in Support of a Proposal to Revise Sportfishing Regulations for Striped Bass, Dec. 2011. More recently, in its 2014 Recovery Plan for Central Valley Salmonids, the National Marine Fisheries Service ranked predation in the highest stressor category in its threat assessments for Central Valley spring-run Chinook salmon, Central Valley steelhead, and Sacramento River winter-run Chinook salmon. National Marine Fisheries Service, Recovery Plan for Sacramento River winter-run Chinook salmon, Central Valley spring-run Chinook salmon, and Central Valley steelhead, July 2014.

These reports from the state and federal agencies entrusted to manage fish populations within California are reinforced by outside experts. For example, in a 2008 report on the Central Valley Project Improvement Act fisheries program, a blue-ribbon panel of scientists characterized predation as a "key limiting factor" on Central Valley salmonids and concluded that predation reduction efforts are among those actions that have the "greatest ability to improve anadromous fish populations in the near term." K. Cummins, et al., Listen to the River: An Independent Review of the CVPIA Fisheries Program, Dec. 2008. The Bureau would do well to analyze the steps it can take in cooperation with the DWR to address predation as one component of a broader effort to improve the status of listed fish in the Delta. Doing so is consistent with the Bureau's desire to "[e]valuate stressors on fish other than CVP and SWP operations." 82 Fed. Reg. at 61,790.

Finally, we urge the Bureau to give further consideration to participation in – or, at a minimum, affirmative support for – the California WaterFix project ("WaterFix"). The WaterFix has the potential to enable the Bureau and the DWR to operate the CVP and SWP cooperatively for their authorized purposes, including by increasing water export capabilities while providing both direct and indirect benefits for listed species. As you are aware, the Bureau has already issued a draft, a recirculated draft, and a final Environmental Impact Statement for the WaterFix. For this reason, while the WaterFix can contribute to the achievement of the purpose and goals identified in the NOI, it need not be addressed during the environmental review process contemplated by the NOI.

The Coalition looks forward to continuing to work with the Bureau as it seeks to take steps to improve the quantity and reliability of water supplies in cooperation with the DWR. We appreciate your willingness to give these comments due consideration.

Sincerely,

William D. Phillimore

Exhibit 1 – References

Andelman, S.J. and W.F. Fagan. Umbrellas and flagships: efficient conservation or expensive mistakes. Proceedings of the National Academy of Sciences. 2000.

Caro, T., J. Eadie and A. Sih. Use of substitute species in conservation biology. Conservation Biology. 2005.

Cummins, K., et al. Listen to the River: An Independent Review of the CVPIA Fisheries Program. Dec. 2008.

Department of Fish and Game. Report and Recommendation to the Fish and Game Commission in Support of a Proposal to Revise Sportfishing Regulations for Striped Bass. Dec. 2011.

Merz, J., et al. Spatial perspective for delta smelt: a summary of contemporary survey data. California Fish and Game. 2011.

Murphy, D.D., et al. A critical assessment of the use of surrogate species in conservation planning in the Sacramento-San Joaquin Delta, California (U.S.A.). Conservation Biology. 2011.

Murphy, D.D. and S. Hamilton. Eastward migration or marsh-ward dispersal: exercising survey data to elicit an understanding of seasonal movement of delta smelt. San Francisco Estuary and Watershed Science 11(3). 2013.

National Marine Fisheries Service. Recovery Plan for Sacramento River winter-run Chinook salmon, Central Valley spring-run Chinook salmon, and Central Valley steelhead. July 2014.

Sommer, T., et al. The spawning migration of delta smelt in the upper San Francisco estuary. San Francisco Estuary and Watershed Science 9(2). 2011.

Sommer T. and F. Mejia. A place to call home: a synthesis of delta smelt habitat in the upper San Francisco estuary. San Francisco Estuary and Watershed Science 11(2). 2013.

U.S. Fish and Wildlife Service. Biological Opinion on the Proposed Coordinated Operations of the Central Valley Project (CVP) and State Water Project (SWP). 2008.

Wenger, S.J. Use of surrogates to predict the stressor response of imperiled species. Conservation Biology. 2008.

January 31, 2018

Katrina Harrison
U.S. Bureau of Reclamation
Sacramento, CA 95825

Re: **Comments Regarding the Notice of Intent to Prepare a DEIS on Revisions to the CVP and SWP Operating Criteria and Plan**

Dear Ms. Harrison:

On behalf of the Golden Gate Salmon Association, the Pacific Coast Federation of Fishermen's Associations and the Institute for Fisheries Resources, we offer the following comments regarding the Bureau of Reclamation's (Bureau) NOI to prepare a DEIS on the Coordinated Long-Term Operations of the State Water Project and the Central Valley Project. We incorporate by reference comments that our organizations sent on December 6, 2017 regarding the draft NOI.

Unfortunately, the proposed approach does not meet Interior's legal obligations under NEPA, the Endangered Species Act, the Central Valley Project Improvement Act, the Reclamation Reform Act and applicable California state law. This proposed process is not founded on sound legal analysis, sound science or even basic facts. Further, this process represents an attack on the health, and even the survival, of the California salmon fishing industry, with potentially devastating implications for tens of thousands of jobs, fishing families, and the California and Oregon communities that depend on healthy salmon runs and healthy rivers.

Status of Salmon Runs and the Salmon Fishery: As discussed below, the NOI does not reference the Bureau's obligations to double Central Valley anadromous fish, including listed and commercially important salmon species. Since the passage of the CVPIA in 1992, rather than double Central Valley's salmon, the Bureau's mismanagement of the CVP has contributed to the two worst salmon crises in state history.

The California salmon fishing industry, as well as the coastal salmon fishery in Oregon, rely overwhelmingly on Central Valley fish. As a result, the fishing industry suffers significantly when Central Valley runs decline. Those runs, the fishing industry, and fishing communities, have been harmed tremendously in the past decade. The following are only a few examples of this decline.

- In 2008-2009, the California commercial and recreational salmon fisheries were closed for the first time in state history. This decision shut down an industry that, in previous years, had generated 23,000 jobs and than $1.4 billion in annual economic activity. Although some attributed this closure to low ocean productivity, the truth is the steep decline in salmon followed several years with the highest levels of Delta water diversion in history. These high export levels had many different impacts on salmon. For example, NMFS has found that indirect losses of juvenile salmon entrained into the Delta can be many times greater than those recovered at the Delta pumps.

- In 2017, as a result of low adult populations, commercial salmon fishermen along the California coast lost 2/3 of the fishing season they had a decade ago. One of the primary causes of these low adult salmon numbers was the irresponsible management of Shasta Dam. The Bureau drained cold water from the reservoir, which caused elevated river temperatures in spawning and rearing areas during 2015 and 2016. This led to the loss of between 95 and 98 percent of naturally spawning Sacramento river juveniles and eggs during those two years. A draft amended RPA to provide improved river temperatures should be finalized and implemented immediately.

- The California commercial salmon harvest has fallen more than 90 percent, from nearly 800,000 fish a quarter century ago, to 56,000 fish in 2016. The final numbers for the 2017commercial harvest will be similarly poor.

The irresponsible management of the CVP continues in 2018. For example, on January 16, the Bureau proposed to weaken winter run protections in the NMFS Biological Opinion in order to increase Delta pumping. NMFS currently estimates that 61-70% of juvenile winter-run salmon are in the Delta[1]. These juveniles are the offspring of one of the smallest spawning adult populations on record. As a result, this proposal to weaken Delta salmon protections comes at one of the most vulnerable moments for winter run in the history of the CVP. This proposal represents either an unlawful disregard for impacts on salmon or, alternatively, an intentional effort to drive salmon runs to extinction.

[1] January 23, 2018 e-mail from Jeff Stuart of NMFS re. DOSS meeting results.

Status of Central Valley Agriculture: In stark contrast with salmon runs and the salmon fishing industry, Central Valley agriculture has thrived in the past decade. In recent years, California agriculture has set all time records for revenue and employment. Almond acreage and revenue are at record levels. During the past decade, California agriculture has planted more than 550 square miles of new almond orchards. The California agricultural industry is the strongest in the nation. It does not need weaker environmental protections or maximized water exports to continue to thrive.

Urban Efforts to Reduce Reliance on the Delta: Many recent developments demonstrate that the needs of California's urban residents in export areas also do not justify weaker environmental protections for the Delta and salmon, or actions designed to maximize water deliveries. Urban water users served by the CVP and SWP have identified and are pursuing options that will significantly reduce their reliance on the Delta. For example, the City of Los Angeles has adopted a water management plan with a goal of reducing by 50 percent, by 2025, the amount of imported water it purchases. The Santa Clara Valley Water District, the City of San Diego, and many other urban water districts are making large investments to develop alternative water supplies that are less affected by climate change, drought and regulatory requirements. These alternatives include conservation, cleaning up contaminated groundwater, water recycling and capturing urban stormwater. The potential of just one of these sources was demonstrated during the drought, when aggressive water conservation resulted in significant declines in water use. Finally, many California cities are continuing to grow without increasing their water use.

Lack of Foundation for Change in Reconsultation Process: The process described in the NOI represents a 180 degree turn away from the process described in the 2016 letters in which DWR and the Bureau announced the beginning of OCAP reconsultation. In those letters, the Bureau and DWR stated that it was necessary to revisit current ESA protections because of the decline of listed species during the drought and newly available science. That new science clearly demonstrates the need for stronger protections for listed species. Failure to incorporate these scientific results would be arbitrary and capricious.

Unfortunately, in the NOI, the Bureau has abandoned this science-based approach and reinvented the process in an effort to "maximize water deliveries" in both the long term OCAP revisions discussed in the NOI "Phase 2" and the short term process seeking to weaken standards, which the Bureau has described as "Phase 1". This revision represents an Alice in Wonderland approach to the 2016 reconsultation process, in which the Bureau asserts that the appropriate response to declining ecosystem health and salmon runs is to further the weaken standards that allowed the decline in the first place.

In addition, the Bureau unlawfully proposes to delay consideration of new scientific information and the need to strengthen environmental protections until Phase 3 of this process. These issues must be the focus of the reconsultation effort and must not be delayed to a subsequent and unspecified time.

Trinity River Impacts and Obligations: The CVP has caused disastrous impacts to Trinity River salmon. The recovery of the Trinity River must not be threatened by the Bureau effort to maximize water deliveries. In particular, Reclamation may not make a decision that would adversely affect the Interior Secretary's obligation under the 2000 Trinity Record of Decision. As stated in the 1981 Secretarial Issue Document on the Trinity River,

"…the Hupa and Yurok Indians have rights to fish from the Trinity and Klamath Rivers and to have adequate water supplies to make their fishing rights meaningful. These rights are tribal assets which the Secretary of the Interior (the Secretary), as trustee, has an obligation to manage for the benefit of the tribes. The Secretary may not abrogate these rights even if the benefit to a portion of the public from such an abrogation would be greater than the loss to the Indians."

Eliminating, modifying or rescinding the Record of Decision for the Long-Term Plan to Protect Adult Salmon in the Lower Klamath River Project would also be illegal because it would adversely affect salmon, a tribal trust asset that our members also depend upon for their livelihoods. Adverse conditions in the Lower Klamath River caused by dams and diversions have necessitated the use of water beyond the Trinity ROD flows in order to protect tribal fisheries. This includes instream use of Humboldt County's 50,000 acre-foot water contract with the Bureau for Trinity River water. This critical water supply must not be compromised by the Bureau process described in the NOI.

Furthermore, efforts to reduce instream flows for the Trinity River that would hamper restoration efforts would be contrary to Congressional direction (Public Law 98-541, as amended by Public Law 104-143 and CVPIA Section 3406(b)(23)) to restore Trinity River Basin Fish and Wildlife Populations to levels approximating those that existed prior to construction of the Trinity River Division. As defined by Congress, Trinity River fishery restoration includes the ability of tribal and non-tribal fishers to participate fully in meaningful in-river and ocean harvest opportunities.

Unlawful Purpose and Need Statement: The current purpose and need statement, particularly with its focus on maximizing water deliveries, is inconsistent with the Bureau's legal obligations.

The ESA establishes an obligation to avoid jeopardy to and to assist in the recovery of listed species. This requirement is not reflected in the NOI. The NOI also fails to meet the requirements of NEPA.

The NOI also is inconsistent with the Central Valley Project Improvement Act, which requires the CVP to be managed for the co-equal project purpose of "mitigation, protection, and restoration of fish and wildlife". The CVPIA also requires the Bureau to double anadromous fish, compared with the period from 1967-1992. For Central Valley salmon, this represents a target of 990,000 naturally producing adult fish. However, as discussed above, rather than double salmon, the Bureau has contributed to the collapse of Central Valley salmon runs. The Bureau has also ignored the independent 2008 Listen to the River report, which included strong recommendations to strengthen the CVPIA fish doubling program. Rather than convening the process describe in the NOI to maximize water deliveries, Interior should immediately launch an effort to strengthen ESA standards and achieve the CVPIA doubling goal.

The NOI fails to reference broadly respected scientific analysis that confirm that currently required flows and other protections fail to adequately protect ecosystem health and fish populations. These analyses include, but are not limited to, the State Water Resources Control Board's final scientific basis report for the Phase 2 update of the Bay-Delta Water Quality Control Plan and San Francisco Estuary Partnership's 2015 State of the Estuary Report.

The CVPIA and the Reclamation Act also require the Bureau to comply with state law. California state law establishes water supply reliability (not maximizing water deliveries) and ecosystem health as co-equal goals for Delta management. In addition, the California Department of Fish and Wildlife has issued a consistency determination finding that the current OCAP Biological Opinions, with some modifications, meet the requirements of CESA. Further, the State Water Resources Control Board's Bay-Delta Water Quality Control Plan, which regulates the operations of the CVP, also requires the doubling of anadromous fish. The NOI is inconsistent with each of these state requirements. This inconsistency creates an additional violation of federal legal obligations.

The current purpose and need statement for this process is inconsistent with all of these obligations. It should be withdrawn and reissued in a manner that reflects these obligations.

Unlawfully Limited Alternatives: The NOI does not appear to include a broad range of alternatives that could contribute to the protection, recovery and rebuilding of listed species and salmon runs, and that could help the Bureau comply with the legal obligations discussed above. The Bureau must include a full range of alternatives that could assist in meeting its ecosystem protection and fish

restoration obligations. These alternatives include, but are not limited to, the following:

- Improved temperature protections at CVP dams for all salmon runs, including, at a minimum, the January 2017 revised NMFS RMP for temperature control at Shasta Dam.

- Increased Delta outflow, incorporating the findings in the State Water Resources Control Board's final scientific basis report for the Phase 2 update of the Bay-Delta Water Quality Control Plan.

- Spring pulse flows in most year types, to assist with juvenile salmon outmigration.

- Operating criteria to ensure that the Yolo Bypass and other floodplain habitat are inundated to provide juvenile salmon rearing habitat.

- A program to reduce the dewatering of fall-run redds in the Sacramento River after Keswick releases are ramped down, following the emergence of the last winter run juveniles from the gravel.

- Incorporation of the science-driven Conservation Strategy approach included in the 2017 Central Valley Flood Protection Plan.

- Incorporation of the recommendations in the 2008 Listen to the River report, which evaluated the Bureau's implementation of the CVPIA's anadromous fish restoration program.

- Withdrawal and reform of the 2003 guidance document regarding the implementation of Section 3606(b)(2) of the CVPIA, which dedicated 800,000 acre-feet of water to anadromous fish doubling. New (b)(2) policies should be adopted that ensure that this water is fully dedicated to high priority anadromous fish restoration actions. Recapture of (b)(2) water for other project purposes should not be allowed.

- Significant retirement of drainage impaired lands served by the CVP and SWP.

- Agricultural water conservation and crop shifting.

- Elimination of future conversion of annual crops to permanent crops on land served by junior CVP or SWP water rights, land with limited groundwater and land with significant groundwater overdraft.

- Reduced Delta exports.

- Reduced CVP contract quantities.

- Renegotiation of the CVP/SWP Coordinated Operations Agreement to address CVP concerns regarding the equitable allocation of Delta exports.

Further, the Bureau should exclude from analysis alternatives that are inconsistent with the legal obligations described above to protect, recover and rebuild ecosystem health and fish populations in both the Central Valley and the Trinity River. For example, storage and diversion projects should be excluded if they would result in significant negative impacts on temperature, juvenile salmon outmigration and survival, redd dewatering, Delta outflow, floodplain inundation, water quality or entrainment.

Current Requirements and the Baseline for Analysis: This process must include, in the baseline for analysis, full compliance with all current requirements relevant to the CVP and SWP, including the January 2017 revised NMFS RMP for temperature control at Shasta Dam.

Lack of State Involvement: It is important to note that, although the 2016 letters requesting reinitiation of consultation were joint letters signed by the Bureau and the Department of Water Resources, the current NOI is a unilateral federal proposal. In this way, the NOI is misleading. The Bureau of Reclamation has no authority to unilaterally rewrite the operating rules for the SWP.

We are pleased that the state has, apparently, refused to support the irresponsible federal NOI. In addition, we are pleased that state agencies have rejected both of BOR's proposals during 2018 to weaken current salmon protections in the Delta.

The current unilateral federal process, including both short-term (Phase 1) and long-term (Phase 2) efforts to weaken current protections, threatens decades of joint state-federal management of the Delta. This federal process could signal the start of an unpredictable era in which the state and federal projects are not managed together, in which the state and federal projects attempt to achieve different goals, and in which they may not recognize a common set of operating rules. This instability could threaten the environment, the fishing industry and water users alike. We urge the Bureau to end this confusion by clearly committing to comply with all state requirements related to CVP operations, including CESA requirements.

We urge the Bureau to return to the 2016 reconsultation process described in the Bureau/DWR 2016 letters. Thank you for considering these comments.

Sincerely,

John McManus
President
Golden Gate Salmon Association

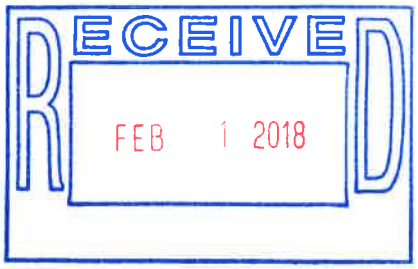
Noah Oppenheim
Executive Director
Pacific Federation of Fishermen's Assns
Institute for Fisheries Resources

North Delta CARES Action Committee

P.O. Box 223, Clarksburg,CA 95612 Phone: (530) 570-9641 Email: deltaactioncommittee@gmail.com

January 31, 2018

Ms. Katrina Harrison, Project Manager
Bureau of Reclamation
Bay-Delta Office
801 I Street, Suite 140
Sacramento, CA 95814-2536



Re: Comments on the scope of the EIS

Dear Ms. Harrison,

North Delta CARES made Public Comment at the USBR meeting held in Sacramento on January 23, 2018, and expressed that a Comment Letter with attachments would be delivered to your office.

We thank you for this opportunity **to oppose maximizing water exports from Northern California** to Central and Southern California. There are better alternatives that have not been vetted for water supply. Over pumping has already created a decline in the estuary in the past several years. More water needs to flow through our California Delta and be captured during high water times below the Delta. Perhaps restoring Tulare Lake and the hydrological region there in Central California would be one of the better options – it would maximize benefits to restore the California Delta as well and would be a win-win-win situation.

In addition, Dr. Peter Gleick from the Pacific Institute did a study in 2009 (San Francisco Chronicle article 'Saving California Agriculture" dated July 22, 2009, in the attached binder that states, **"For an average water year, the agricultural water conservation and efficiency practices identified in the Pacific Institute report have the potential to save 5.6 million acre-feet of water equivalent to:**

- **More than 16 times the amount of water that can be stored in the Hetch Hetchy Reservoir**
- **Triple the water that can be stored in the far larger San Luis Reservoir**
- **4.5 times the water than could be stored in the proposed Temperance Flats Reservoir"**

The California Waterfix is not a good solution for a sustainable water supply for all Californians. It seriously harms the people and environment of Northern California, harms agriculture in the Delta, harms recreation in the Delta, harms homes and

livelihoods of the people and gives a 50 year take permit to the water agencies that will cause salmon and other species to go extinct.

Attached is a binder of information that North Delta CARES Action Committee has put together to substantiate why **our position is that USBR should NOT make changes to export operations in California that would risk the environment and fisheries of the State.**

We would like to be part of a win-win-win situation, not part of a "we-win- you-lose" ~~ and the environment suffers as well.

Sincerely,

Barbara Daly

Barbara Daly, Co-Chair (for)
North Delta CARES Action Committee

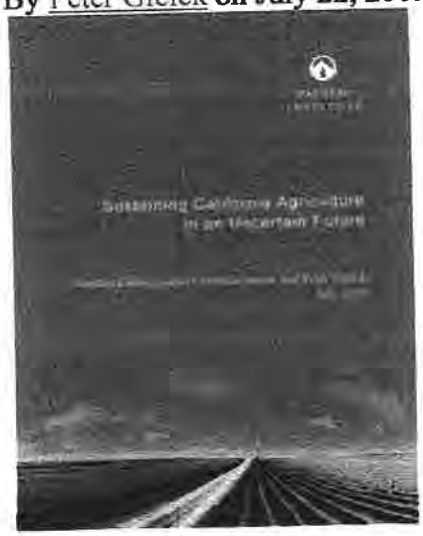
Attachments:

- City Brights: Peter Gleick, "Saving California Agriculture" 7/22/09
- "Review Comments: BDCP July 2015 Partially Recirculated Draft EIR/EIS 11/9/15
- "Feds Set to Give 400 Farms More Water than L.A., S.F., San Diego Combined" 9/14/05
- "Soaking Uncle Sam – Why Westlands District's New Contract Is All Wet" 9/14/05
- "An Unconventional Desalinization Technology Could Solve California's Water Shortage" 3/12/14"
- "District Rakes in $14 Million From Water Auction"
- "Who Owns California's Water?" 6/21/10
- "Western Delta Intake Concept (WDIC)" by Dr. Robert Pyke 5/12
- Review Comments: Delta Stewardship Council – Delta Plan Amendment for Water Conveyance, System Storage, and the Operation of Both 6/21/17 with attachments
- Letter: M. David Stirling – Delta Plan Amendment for Water Conveyance, etc. for DSC Hearing 6/22/17 -- 6/20/17
- Pictures – North Delta Living that would be destroyed by CA WaterFix
- Public Citizen: "Water Heist – How Corporations are Cashing in on California's Water and National Geographic's "Water & Powr: A California Heist" film notice
- High Country News, "The Ghost of Tulare – Reviving an ancient lake may help solve California's water woes" 12/09
- Santa Clara Water District Board of Directors Letter, "Comments on January 26, 2016, Agenda Item 2.2 – Workshop on State Perspectives on California WaterFix and California EcoRestore" 1/25/16

City Brights: Peter Gleick

Saving California Agriculture

By Peter Gleick on July 22, 2009 at 9:16 AM



Pacific Institute

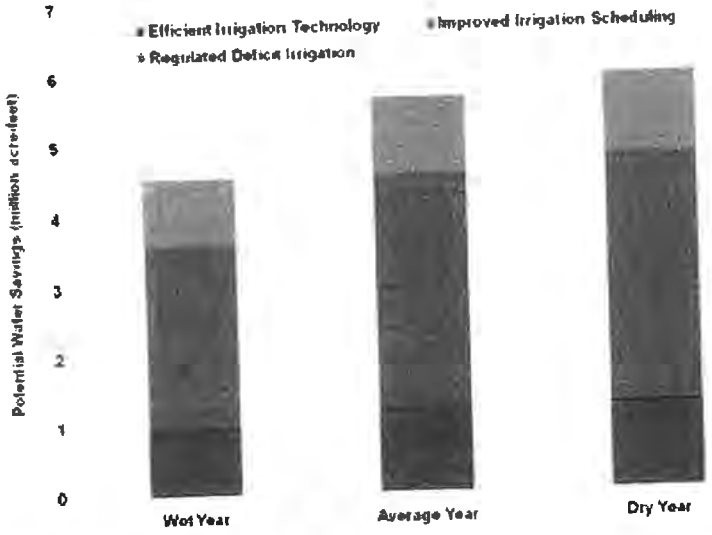
The Pacific Institute has just released a major new study that shows that a strong and healthy California agricultural sector can flourish despite diminishing water supply and future uncertainty from climate change, but only if new steps are taken to significantly increase the efficiency of water use in California fields. The good news is that many farmers and irrigation districts are already making improvements in how they use water. The better news is that there is still tremendous untapped potential – potential that totals millions of acre-feet. The report also offers explicit policy and water management changes to capture this potential.

The new report, *Sustaining California Agriculture in an Uncertain Future* (funded by the David and Lucile Packard Foundation and the William and Flora Hewlett Foundation), quantifies the potential to reduce agricultural water withdrawals and vulnerability to drought and climate change while maintaining and even increasing productivity.

Water Number: 4.5 to 6 million. The number of acre feet each year that we estimate can be saved statewide by comprehensive changes in the irrigation technologies and management practices we use to grow California's crops. This savings represents around 17% of all of the water used by agriculture in California. In comparison, this is 19 times the amount of water returned to the environment through the recent Delta smelt ruling.

While there are many approaches to increasing our water-use efficiency, we looked at three: improving irrigation and soil

moisture management, changing from old inefficient irrigation technology to newer efficient technologies, and regulated deficit irrigation.



Pacific Institute

Potential water savings (in million acre-feet) in a wet, average, and dry year

Our report finds that all three of these approaches show potential for significant savings. Indeed, all three are already being implemented by innovative farmers. Many farmers have worked hard to improve water-use efficiency in recent years, but much more can be done. For example, an astounding 58% of crops are still irrigated in California by flooding the field – a practice that leads to unproductive water loss. As hard as it is to believe, the last irrigation survey in California showed that nearly 300,000 acres of vineyards are still grown using flood irrigation in the San Joaquin and Tulare hydrologic regions (as are many more acres of crops that don't need flood irrigation). In comparison, fewer than 4,000 acres of vineyards in the rest of the state are grown using flood irrigation. Converting even a fraction of flood irrigation to sprinklers allows farmers to apply water with greater precision and uniformity, boosting yields and quality, while reducing unproductive water use. Other states already do far more with smart irrigation systems than California.

The report also features several early adopters who have implemented water conservation and efficiency improvements that both reduce water use and increase their bottom line. For example, Craig McNamara, owner and operator of Sierra Orchards, has converted many fields to drip irrigation and installed tailwater recovery ponds to capture excess water runoff (watch the video).

The new report makes specific recommendations, such as property and sales tax exemptions, rebates for efficient irrigation equipment, greater federal support through Farm Bill conservation programs, and better water pricing policies.

Here are a few:

– Provide financial assistance and incentives to more farmers to implement efficient irrigation methods.

– Update district irrigation delivery systems to provide water to farmers when it is needed.

– Change current state law, which allows local government to create local groundwater management authorities, to require such authorities throughout the state.

– Provide legislative, regulatory, and administrative support to update the water rights system given future hydrologic uncertainties.

– Empower the State Water Resources Control Board to act as an independent body by changing the appointment and funding processes.

– Develop economic strategies, including pricing, water markets, and water transfer agreements that provide incentives to improve efficiency rather than incentives to consume water.

– Ensure that state and federal water contracts comply with state water law and encourage water conservation by promoting and implementing diverse best management practices.

If California wants a healthy agricultural sector, and if significant new sources of supply remain out of reach or are too expensive, we have no choice but to implement conservation and efficiency more aggressively. The good news is that we're starting to move in the right direction; the better news is we can do much more.

COMPARISON OF WATER QUANTITIES

For an average water year, the agricultural water conservation and efficiency practices identified in the Pacific Institute report have the potential to save 5.6 million acre-feet of water, equivalent to:

-more than 16 times the amount of water that can be stored in the Hetch Hetchy Reservoir;

-triple the water that can be stored in the far larger San Luis Reservoir;

-4.5 times the water than could be stored in the proposed Temperance Flats Reservoir;

-19 times the water restored to the environment in the recent Delta smelt ruling;

-more than double the 2.3 million acre-feet in urban efficiency improvements identified in the Pacific Institute's urban water efficiency study of the potential for residential, commercial, and industrial efficiency improvements.

January 30, 2018

Katrina Harrison
U.S. Bureau of Reclamation, Bay-Delta Office
801 I Street, Suite 140
Sacramento, CA 95814-2536

Sent via email to kharrison@usbr.gov

RECEIVED
FEB 1 2018

RE: Comments on the Notice of Intent to Prepare a Draft Environmental Impact Statement, Revisions to the Coordinated Long-Term Operation of the Central Valley Project and State Water Project, and Related Facilities

Dear Ms. Harrison:

On behalf of Natural Resources Defense Council (NRDC), Defenders of Wildlife, the Bay Institute, and San Francisco Baykeeper, we are writing to provide comments on the U.S. Bureau of Reclamation's ("Reclamation") Notice of Intent to Prepare a Draft Environmental Impact Statement, Revisions to the Coordinated Long-Term Operation of the Central Valley Project and State Water Project, and Related Facilities ("NOI"). This letter incorporates the comments sent to Reclamation on December 6, 2017 regarding a draft of the NOI and related actions to reinitiate consultation under section 7 of the Endangered Species Act ("ESA"). Unfortunately, as discussed below, the NOI and approach to the reinitiation of consultation are inconsistent with Reclamation's legal obligations under the Reclamation Act of 1902, the ESA, the National Environmental Policy Act ("NEPA"), and the Central Valley Project Improvement Act ("CVPIA").

I. The Purpose and Need Statement is Unlawful:

The NOI identifies the purpose of the reinitiation of consultation and the NEPA analysis as modifications to coordinated operations of the Central Valley Project ("CVP") and State Water Project ("SWP") to "maximize water supply delivery," to "increase operational flexibility," and to "maximize water deliveries." However, as Reclamation is aware, federal law requires that the Bureau operate the CVP for equal purposes of water supply and "mitigation, protection, and restoration of fish and wildlife" pursuant to section 3406(a) of the CVPIA. The purpose and need statement in the NOI is inconsistent with Reclamation's obligations under the CVPIA because it prioritizes water supply above other equal purposes of the project.

The purpose and need statement is also inconsistent with state law. Reclamation is obligated to operate the CVP in conformance with state law pursuant to both section 3406 of the CVPIA and section 8 of Reclamation Act of 1902. However, California law establishes co-equal goals of improving water supply reliability and protecting and restoring the Delta ecosystem. Cal. Water Code § 85054. By prioritizing water supply at the expense of the environment and other beneficial uses of water, the NOI is inconsistent with California law.

The purpose and need statement is also inconsistent with Reclamation's obligations under the ESA and NEPA. For instance, the NOI fails to acknowledge that reinitiation of consultation is required because existing operations of the CVP and SWP are jeopardizing the continued existence and recovery of ESA-listed species. In 2016, the U.S. Fish and Wildlife Service ("USFWS") and National Marine Fisheries Service ("NMFS") concurred that reinitiation of consultation under the ESA was required because of the impacts of CVP/SWP operations on endangered species during the drought, new scientific information on effects of operations of the CVP and SWP that were not considered in the existing biological opinions, and recent data showing extremely low abundance of ESA-listed species. In this context, the purpose and need cannot be limited to projects and alternatives that would increase water deliveries from the Delta, as the best available science demonstrates that greater protections for endangered species are required, including actions that will reduce water diversions. CVP operations that reduce exports 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).

Indeed, in 2015, Reclamation appropriately included an alternative (Alternative 5) that improved environmental flows and reduced Delta exports as part of the Environmental Impact Statement ("EIS") analyzing long term operations of the CVP and SWP. *See* Bureau of Reclamation, Final Environmental Impact Statement, Coordinated Long-Term Operation of the Central Valley Project and State Water Project, November 2015, available online at: https://www.usbr.gov/mp/nepa/nepa_project_details.php?Project_ID=21883.[1]

As currently drafted, the purpose and need statement is improperly narrow under NEPA, and it would be unlawful to preclude consideration of alternatives that result in reduced water deliveries from the Delta.

II. The Draft Environmental Impact Statement ("DEIS") Must Consider a Reasonable Range of Alternatives, Including Alternatives that Reduce CVP Water Diversions and Delta Exports:

NEPA requires that Reclamation consider a reasonable range of alternatives. 42 U.S.C. § 4332; 40 C.F.R. §§ 1502.14, 1508.25(b). The NOI identifies a number of potential alternatives, but does not appear to

[1] For instance, page 35 of the Record of Decision states that Alternative 5 would reduce long term average CVP and SWP exports by 13 percent and 27 percent, respectively.

include any alternatives that result in reduced water diversions from the San Francisco Bay-Delta Estuary ("Bay-Delta"). The exclusion of such alternatives would be unlawful.

First, the best available science indicates that diversions from the Bay-Delta watershed must be reduced to sustain and restore native fish and wildlife, including species listed under the Endangered Species Act. As noted above, USFWS and NMFS found that reinitiation of consultation under section 7 of the ESA was required.[2] In addition, NMFS provided Reclamation with a revised Shasta Reasonable and Prudent Alternatives ("RPA") amendment in January 2017, in order to prevent Shasta Reservoir operations from jeopardizing the continued existence and recovery of winter-run Chinook salmon.[3] Operations of the CVP and SWP over the past several years, including the failure to fully implement the RPA actions in the 2008 and 2009 biological opinions, are jeopardizing Delta smelt, winter-run Chinook salmon, spring-run Chinook salmon, longfin smelt, and other native species. Weakening protections for fish and wildlife in order to maximize water exports from the Delta, as proposed in the NOI, is contrary to the best available science.

That conclusion is strongly supported by the State Water Resources Control Board's ("SWRCB") final scientific basis report for the Phase II update of the Bay-Delta Water Quality Control Plan.[4] That report explicitly concludes that, "[t]he best available science, however, indicates that these requirements [D-1641 and the 2008 and 2009 biological opinions] are insufficient to protect fish and wildlife." SWRCB 2017 at page 1-5. The Scientific Basis Report concludes that the best available science supports the adoption of significant new protections that would increase instream flow, increase Delta outflow, improve cold water pool management at upstream reservoirs, and limit the ecological impacts of CVP/SWP operations in the Delta. The SWRCB is currently scheduled to adopt changes to the Bay-Delta Water Quality Control Plan by the end of 2018. *See* SWRCB, San Francisco Bay/Sacramento – San Joaquin Delta Estuary (Bay-Delta) Watershed Efforts, https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/ (last visited January 19, 2018). In addition, the SWP's existing permit for the incidental take of longfin smelt under the California Endangered Species Act ("CESA") expires in December 2018, and it is anticipated that the new permit will require significant increases in Delta outflow during the winter and spring months. While the existing CESA incidental take permit currently only applies to the SWP, both the CVPIA and Reclamation

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[2] Section 7(d) of the ESA prohibits Reclamation from making irretrievable commitments of resources during the pendency of the reinitation of consultation, requiring that the Bureau maintain the status quo during the consultation process. *See, e.g., Pacific Rivers Councils v. Thomas*, 936 F.Supp. 738, 745 (D. ID 1996) (citations omitted). Reservoir releases and water diversions constitute an irretrievable commitment of resources under section 7(d) of the ESA. *Kandra v. U.S.*, 145 F.Supp.2d 1192, 1210-1211 (D. Or. 2001); *see Pacific Coast Fed'n of Fishermen's Assoc. v. Bureau of Reclamation*, 138 F.Supp.2d 1228, 1249 fn. 19 (N.D.Cal.2001). Failing to fully implement the biological opinion until completion of the section 7 consultation process would violate the ESA.

[3] That amendment is available online at: http://www.westcoast.fisheries.noaa.gov/publications/Central_Valley/Water%20Operations/nmfs_s_draft_proposed_2017_rpa_amendment_-_january_19__2017.pdf and is incorporated by reference.

[4] The SWRCB's Final Report is available online at: https://www.waterboards.ca.gov/water_issues/programs/peer_review/docs/scientific_basis_phase_ii/201710_bdphaseII_sciencereport.pdf and is incorporated by reference.

Act of 1902 require the CVP to be operated in compliance with state law and Reclamation has previously stated that it would assist the SWP in meeting obligations under CESA. *See* letter from John F. Davis, Deputy Director, U.S. Bureau of Reclamation to John McCammon, California Department of Fish and Wildlife, dated February 13, 2008. There is no reason to believe that the requirements of CESA with respect to longfin smelt are preempted by federal law.[5]

The best available science also demonstrates that while non-flow measures, such as habitat restoration, can complement flow measures, they are not a substitute for flow and export restrictions. For instance, in 2015 Reclamation's final EIS ("FEIS") on long-term SWP and CVP operations analyzed the effects of several alternatives that did not fully implement the biological opinions and substituted non-flow measures like habitat restoration or predator control. Scientific information submitted by state and federal agencies concluded these measures did not adequately protect fish and wildlife. In the final EIS and Record of Decision ("ROD") Reclamation rejected implementation of the alternatives, concluding that they resulted in adverse impacts to aquatic resources, as compared to the No Action Alternative. Similarly, as part of the Bay Delta Conservation Plan / California WaterFix process, Reclamation and other federal and state agencies determined that there was not adequate scientific information to conclude that habitat restoration could substitute for flow measures, including restrictions on exports and water diversions. Given the dire status of the species and the available scientific information, there is no legal basis to conclude that non-flow measures would adequately substitute for the existing RPA actions in the biological opinions.

Therefore, we recommend that the EIS consider a range of alternatives that includes several alternatives that reduce water diversions from the Bay-Delta watershed, including one or more alternatives that are consistent with the flow and export limitations that were identified as protective of analyzed fish species in the State Water Resources Control Board's 2017 Final Scientific Basis Report.

Second, the EIS should analyze one or more alternatives that include potential investments in local and regional water supply projects, such as wastewater recycling, improved urban and agricultural water use efficiency, urban stormwater capture, the proposed expansion of San Luis Reservoir, and proposed and potential groundwater banking projects (including on-farm recharge projects). These kinds of projects can reduce reliance on Delta exports while effectively increasing water supply. The NOI specifically identifies these types of projects in the discussion of alternatives to be considered ("Actions to generate additional water or that improve and optimize the utilization of water such as desalinization, water conservation, or water reuse"). Moreover, these kinds of projects are consistent with California law, which requires reduced reliance on the Delta and investments in local and regional water supplies:

> 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

[5] In addition, USFWS has concluded that listing of longfin smelt under the ESA is warranted, and that existing regulatory requirements fail to adequately protect this species. 77 Fed. Reg. 19756 (April 2, 2012). The Service plans to make an updated determination in FY19.

> 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.

Cal. Water Code § 85021.

There are substantial opportunities to reduce reliance on the Delta and increase water supply through these types of projects. In 2014, NRDC and the Pacific Institute released the *Untapped Potential* report, which estimated the potential improvements in water supply from urban stormwater capture, water recycling, and improved urban and agricultural water use efficiency.[6] For instance, although some agricultural CVP contractors have pressurized delivery systems that provide water on demand and utilize drip irrigation or other efficient on-farm efficiency practices, according to the California Department of Water Resources, more than 50% of irrigated acreage statewide (excluding rice) still uses inefficient irrigation methods like flood and furrow irrigation. The EIS should evaluate potential improvements in irrigation efficiency that would enable reduced water use during drier years, while still using flood irrigation in wet years, with the ability to transfer conserved water. Similarly, in 2013, NRDC was part of a coalition of water districts and conservation groups that proposed a Portfolio Alternative for the Bay-Delta that included significant investments in local and regional water supplies in conjunction with water operations that would reduce Delta diversions.[7] These kinds of investments could be paired with water operations that reduce exports in one or more alternatives.

Finally, we understand that the operators of the CVP and SWP, and their contractors, are discussing potential changes to the Coordinated Operating Agreement ("COA"), which specifies how the projects share regulatory and water supply responsibilities. The EIS should also evaluate the effect of potential changes to COA. According to the Public Policy Institute of California, since the early 2000s, increased demand by the Metropolitan Water District of Southern California and increased SWP pumping has resulted in an average annual reduction of water supply of nearly 500,000 acre feet to CVP contractors and other water users in the San Joaquin Valley:

> The San Joaquin Valley receives the largest share of Delta imports. However, this share has declined over time, as Southern California's share has increased (Figure A18). This shift reflects Southern California's increased ability to take and store water under its long-standing State Water Project contracts, thanks to investments in new surface storage (e.g., construction of Diamond Valley Lake, expansion of San Diego's San Vincente Dam) and increases in groundwater banking within Southern California and in

[6] This report is available online at: https://www.nrdc.org/resources/untapped-potential-californias-water-supply and is incorporated by reference.
[7] The 2013 Portfolio Alternative is available online at: https://www.nrdc.org/resources/portfolio-based-conceptual-alternative-bay-delta and is incorporated by reference.

> Kern County. In addition, some San Joaquin Valley irrigation districts have sold project contracts to Southern California urban agencies on a permanent or long-term basis (Hanak and Stryjewski 2012). From 1986 to 2000, the San Joaquin Valley received an average of 72 percent of all Delta imports; that share fell to an average of 61 percent in 2001-2015. Meanwhile, Southern California's share rose from 19 percent to 29 percent. On average, this represents a shift of about 0.5 maf/year. Deliveries to the San Francisco Bay Area and Central Coast remained fairly stable, with each receiving just under 5 percent.

Public Policy Institute of California, Water Stress and a Changing San Joaquin Valley, Technical Appendix, at 21.[8] While average CVP/SWP exports under the biological opinion are similar to the average CVP/SWP exports over the 1980-2000 period, the share of exports by the CVP has changed over time. The EIS should evaluate the likely effects of potential changes to COA.

III. The Environmental Baseline Must Include Existing Environmental Protections

Under NEPA, the environmental baseline generally consists of the no action alternative, including current legal obligations and policies at the time the notice of intent is issued. *See* 40 C.F.R. § 1501.14(d). In this case, the no action alternative must include existing environmental standards applicable to the CVP and SWP, including the RPA actions in 2008 and 2009 biological opinions, D-1641, the CVPIA, and the 2017 amendment to the Shasta RPA.[9] Reclamation's 2015 FEIS on long-term operations likewise concluded (see page ES-9) that the no action alternative must include the full implementation of the RPAs in the biological opinions, because they were issued prior to the NOI and were provisionally accepted and being implemented.

IV. The EIS Must Include Analysis of the Likely Effects of Climate Change

Given the magnitude of environmental changes that are anticipated, the EIS must include the likely effects of climate change in its analysis.[10] As NMFS explained in its 2017 biological opinion on the California WaterFix project, climate change is likely to increase the frequency of droughts, as well as causing less total precipitation, a shift in precipitation from snow to rain, and earlier snow melt. *See* NMFS 2017 at 50. The biological opinion also warned that,

> Another important overall consideration is that the water temperature modeling reflects projected climate change to 2030 and to the extent that climate change creates greater thermal stress beyond what is projected for 2030, any adverse effects seen in the modeling will accordingly be exacerbated. Based on previous climate change

[8] This report is available online at: http://www.ppic.org/publication/water-stress-and-a-changing-san-joaquin-valley/.
[9] Reclamation has provisionally agreed to implement the amended RPA action, and it was issued prior to the NOI.
[10] Inclusion of the likely effects of climate change is also required under the ESA.

> modeling for the Central Valley (Cayan et al. 2009), NMFS expects that climate conditions will follow a trajectory of higher temperatures beyond 2030. Not only are annual air temperatures expected to continue to increase throughout the 21st century, but the rate of increase is projected to increase with time. That is, in the early part of the 21st century, the amount of warming in the Sacramento region is projected to be less than it is in the latter part of the century under both low and high carbon emissions scenarios (Cayan et al. 2009). Because water temperatures are influenced by air temperatures, NMFS expects that climate change will amplify adverse thermal effects of the proposed action combined with the environmental baseline and modeled climate change past 2030.

Id. at 323. The NMFS WaterFix biological opinion generally requires reinitiation of consultation by 2030 in order to analyze the effects of CVP/SWP operations in conjunction with the longer term impacts of climate change.

It is unclear from the NOI what the proposed duration of analysis is in the EIS. However, under both NEPA and the ESA, the EIS and any biological opinion(s) must analyze effects for the same duration of time as any water supply contracts or permits that would rely on these analyses,[11] and they must include the likely effects of climate change over that same time period. Modeling that includes the anticipated effects of climate change over the longer term period (2070) is available to Reclamation for use in this EIS and any related biological opinions.

V. The Reinitiation of Consultation Cannot Defer to a Subsequent Phase Consideration of the Best Available Science and Additional Protections for the Species

Finally, we understand that Reclamation is considering a three-phased approach to the reinitiation of consultation and accompanying NEPA compliance, where the first phase would consist solely of weakening or eliminating restrictions on Delta exports in the current biological opinions. Effectively, this approach proposes to only consider rollbacks of existing ESA protections in the Delta, without consideration of additional operational provisions, such as increased Delta outflow, increased instream flows, and reduced diversions, necessary to protect ESA-listed species, as indicated by the 2016 letters requiring reinitiation of consultation as well as other scientific information referenced herein. Under the ESA, the reinitiation of consultation must utilize the best available science to determine the effects of CVP and SWP operations on listed species. 16 U.S.C. § 1536(a)(2). This includes new scientific information regarding the effects of Delta outflow on listed species and the effects of impaired Sacramento River flows on ESA-listed salmon and sturgeon. Reclamation cannot limit the scope of the reinitiation of consultation to a limited set of actions as described in the Regional Director's email, and the prohibitions of section 7(d) of the ESA apply until the section 7 consultation is completed.

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[11] *See, e.g., Conner v. Burford*, 848 F.2d 1441, 1453, 1458 (9th Cir. 1988); *Wild Fish Conservancy v. Salazar*, 628 F.3d 513, 521-525 (9th Cir. 2010).

Thank you for consideration of our views.

Sincerely,

Doug Obegi
Natural Resources Defense Council

Rachel Zwillinger
Defenders of Wildlife

Gary Bobker
The Bay Institute

Ben Eichenberg
San Francisco Baykeeper

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February 1, 2018

TO: Katrina Harrison
Bureau of Reclamation
Bay-Delta Office
801 I Street Suite 140
Sacramento, CA 95814

RE: Comments regarding Trinity River protections in a DEIS on revisions to the CVP and SWP operating criteria and plan

Dear Ms. Harrison:

On behalf of the Pacific Coast Federation of Fishermen's Associations and the Institute for Fisheries Resources, we offer the following comments regarding the Bureau of Reclamation's (Bureau) NOI to prepare a DEIS on the Coordinated Long-Term Operations of the State Water Project and the Central Valley Project. Trinity River alternatives must be considered during the process. These comments include both the legal justification for the alternative as well as the specifics of the proposed "Trinity River Protection Alternative" that would require Reclamation through terms and conditions in the NMFS Biological Opinion as well as amendment of Reclamation's Trinity River state water permits to current instream flows, North Coast Basin Plan temperature objectives and Trinity Reservoir cold water carryover storage.

Consistency with Existing Laws:

The unique protection afforded the Trinity River, its fisheries and water is embodied in State and federal law. The special legal status of the Trinity River, and the federal mandate to do no harm to its salmon runs, has been expressed in numerous legal opinions, court decisions and administrative actions at both the State and federal level. While the Trinity River Division is "fully integrated" with the CVP, its special status creates a priority for the use of Trinity River water for Trinity River fisheries and other in-basin uses that is legally superior to any other use of CVP water outside of the Trinity River basin.

Our proposed alternative is consistent with federal and state mandates to protect, preserve, propagate and restore the Trinity River's fisheries as described below.

Federal Laws and Policies:

The *Trinity River Act of 1955* (PL 84-386) "directed and authorized" the Secretary of Interior to "preserve and propagate" the fish and wildlife resources of the Trinity River.

Another provision in the *Trinity River Act of 1955* reserved 50,000 acre-feet for Humboldt County and downstream water users that is embodied in a 1959 water contract between the Humboldt County Board of Supervisors and the Bureau of Reclamation that is separate from fishery flows. A 2014 Solicitor's Opinion has reaffirmed this long-standing water right and the fact that it is in addition to fishery flows under the Trinity River Record of Decision.[1] This fact of law was recently upheld by the Ninth Circuit Court of Appeals in a case that PCFFA intervened on behalf of the federal government.[2]

The Trinity River Basin Fish and Wildlife Restoration Act of 1984 (PL 98-541) clarified the "preserve and propagate" language from the 1955 Trinity River Act to mean "…restoring fish and wildlife populations in the Trinity River basin to a level approximating that existed immediately before the construction of the Trinity River division."

Under the Tribal Trust Doctrine, and the federally reserved fishing rights of the Hoopa Valley and Yurok Tribes there is a property right associated with the flows of the Trinity River. These rights date back 10,000 years or time immemorial, making them senior to any water rights obtained by the Bureau of Reclamation for the Central Valley Project.

The Central Valley Project Improvement Act, P.L. 102-575 (CVPIA) acknowledged the difference between the Trinity River and Central Valley streams by having separate fishery restoration goals for each basin.

The primacy of the waters of the Trinity River for use in the Trinity River basin is explained in a 1979 opinion by Interior Solicitor by Leo Krulitz on the water contract and drought shortage provisions with the Grasslands Water District:[3]

> *"…in authorizing the Trinity River Division in 1955, Congress specifically provided that in-basin flows (in excess of a statutorily prescribed minimum) determined by the Secretary to meet in-basin needs take precedence over needs to be served by out of basin diversions."*

The Federal Clean Water Act Section 303 approval by the United States Environmental Protection Agency of Trinity River Water Quality Objectives in 1992[4] constituted establishment of a federal water quality standard that all federal agencies, including the Bureau of Reclamation must comply with. USEPA also stated in their approval

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[1] "Trinity River Division's 50,000 Acre-Foot Proviso and the 1959 Contract Between the Bureau of Reclamation and Humboldt County", U.S. Department of Interior Solicitor Opinion M-37030, Hilary C. Tompkins, December 23, 2014. Accessed at https://www.doi.gov/sites/doi.opengov.ibmcloud.com/files/uploads/M-37030.pdf

[2] San Luis Delta Mendota Water Authority and Westlands Water District v. Department of Interior (No 14-17493, D.C. No. 1:13-cv-01232-LJO-GSA), February 21, 2017.

[3] Interior Solicitor to Assistant Secretary for land and Water Resources regarding Proposed Contract with Grasslands Water District, December 7, 1979. Accessed at http://bit.ly/2vwa1dr

[4] Letter from USEPA Region IX Administrator to Chairman of the California State Water Resources Control Board, March 13, 1992. Accessed at http://bit.ly/2vG8QqL

that Trinity River diversions to the Sacramento River are a controllable factor in the protection of the Trinity River and have harmed the Trinity River.

The 2000 Trinity River Record of Decision (ROD page 17)[5] clearly stated as follows:

> "*From the inception of the TRD, Congress directed this Department to ensure the preservation and continued propagation of the Trinity River's fishery resources and to divert to the Central Valley only those waters surplus to the needs of the Trinity Basin.*"

State Laws and Policies:

The Trinity River's fisheries also have protections under the concept of the Public Trust Doctrine, as expressed in the Mono Lake Opinion (*National Audubon Society vs. Alpine County Superior Court*). "*The public trust…is an affirmation of the duty of the state to protect the people's common heritage of streams, lakes, marshlands and tidelands….*" – Supreme Court of California, 1983.

The Area of Origin and Watershed Protection Statutes under California law also contain a priority for in-basin uses compared to out of basin uses. The waters of the Trinity River are subject to California's Watershed Protection, Area of Origin and County of Origin Statutes (California Water Code Sections 10505, 11128 and 11460 *et seq.)* that limit the export of its waters to surplus flows only. Water Code Section 11128 specifically applies the watershed protection and county of origin statutes to the Bureau of Reclamation's Central Valley Project, which includes the Trinity River Division of the CVP.

The California Department of Fish and Game (DFG), in its 22 June 2004 comments on the Supplemental EIS/EIR for the Trinity River Mainstem Fishery Restoration Program[6] stated that impacts to listed species in the Central Valley and Delta as a result of increased Trinity River flows (and decreased Trinity exports to the Sacramento River) are not a "significant impact" requiring mitigation under the California Environmental Quality Act. DFG cited California's watershed protection and area of origin statutes as the rationale for the determination that the priority for Trinity River water is within that basin:

> *"In California, the controls put in place governing a single source of water supply from two separate basins, requires needs for beneficial uses in the basin of origin be met first- then needs can be supplied for the other basin."*

The North Coast Regional Water Quality Control Board and the California State Water Resources Control Board approved Trinity River temperature objectives in 1991, which were approved by USEPA in 1992.[7]

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[5] See https://www.fws.gov/arcata/fisheries/reports/technical/Trinity_ROD.pdf

[6] Trinity Supplemental EIS/EIR comments from California Department of Fish and Game Region 1 Manager to Russell Smith, USBR and Tom Stokely, Trinity County. Accessed at http://bit.ly/2xbDqh9

[7] "Water Quality Control Plan for the North Coast Region" Footnote 5, Table 3-1, page 3-8.00: Accessed at http://www.waterboards.ca.gov/northcoast/water_issues/programs/basin_plan/083105-bp/04_water_quality_objectives.pdf

The concept of doing no harm to the Trinity River is also manifested in Water Right Order 90-05 (WRO 90-05)[8], which contained a term and condition prohibiting harm to the Trinity River as it relates to the export of Trinity River water to the Sacramento River for temperature control on the Sacramento River.

Need for Trinity River Protection Alternative

There is no assurance that the Trinity River and its beneficial uses will be protected from CVP operations because Reclamation's eight Trinity River water permits are not consistent with North Coast Basin Plan temperature objectives and instream flows under the Trinity ROD. Furthermore, the 600,000 acre foot Trinity Reservoir minimum cold water carryover storage requirement in the 2000 NMFS Biological for the Trinity River[9] is inadequate to prevent temperature induced mortality in the Trinity River, particularly during multi-year drought.

The CVP OCAP does nothing to mitigate or prevent catastrophic loss of cold-water storage and basic flows to keep fish in good condition below Trinity and Lewiston Dams, as required by the federal government's Tribal Trust obligations and California Fish and Game Code Section 5937.

Multi-year drought increases the risk to the Trinity and Lower Klamath rivers of losing the cold water stored in Trinity Reservoir to out of basin export. It is essential to note that Trinity River water provides beneficial uses for Coho (listed as threatened) and Chinook salmon, as well as steelhead, Pacific Lamprey, green sturgeon and other species important to Tribal, recreational and commercial fishing communities.

In 1958, the Bureau of Reclamation, pursuant to section 8 of the 1902 Reclamation Act applied to the state for water rights to operate the TRD, but those water rights contain minimum fishery flows of only 120,500 AF. Trinity ROD flows and Humboldt County's 50,000 AF water contract amount to a weighted annual average of 644,000 AF.

Reclamation has admitted that it does not operate to any specific Trinity Reservoir carryover storage requirement and does not consider water quality objectives[10] contained in the North Coast Basin Plan as water permit terms and conditions.

Trinity River temperature objectives to protect salmon and steelhead been adopted by the North Coast Regional Water Quality Control Board, the State Water Resources Control

Daily Average Not to Exceed	Period	River Reach
60°F	July 1- Sept 15	Lewiston to Douglas City Bridge
56°F	Sept 15-Oct 1	Lewiston to Douglas City Bridge
56°F	Oct 1- Dec 31	Lewiston to North Fork Confluence

[8] See Water Right Order 90-05, pages 61-62. Accessed at https://www.waterboards.ca.gov/waterrights/board_decisions/adopted_orders/orders/1990/wro90-05.pdf

[9] See https://www.fws.gov/arcata/fisheries/reports/technical/TREIS_BO_NMFS.pdf

[10] See 2/23/11 letter from Paul Fujitani, Chief of CVP Ops to Brian Person, Chairman Trinity Management Council; accessed at: http://bit.ly/2tuIvQc

Board and USEPA have not been fully incorporated into water permit requirements for the Bureau of Reclamation, creating a regulatory gap.

Reclamation does consider Water Right Order 90-05 (WRO 90-05) to be a permit term and condition but it is not consistent with North Coast Basin Plan Temperature objectives for the Trinity River. WRO 90-05 includes Trinity River North Coast Basin Plan temperature requirements for the September 15- December 31 period but omits the Basin Plan temperature objective for the Trinity River July 1- September 15 period. Additionally, the WRO 90-05 September 15 through December temperature requirement only applies to transfers of Trinity River water to the Sacramento River for temperature control. All other uses of Trinity River water sent to the Sacramento River are not covered by the temperature requirements of WRO 90-05. Reclamation refuses to acknowledge that North Coast Basin Plan requirements are Clean Water Act Section 313 standards that they must comply with because they are not water permit terms and conditions.[11] Thus, comprehensive Trinity River Basin Plan temperature objectives should be included in Reclamation's water permits.

The NMFS 2000 Biological Opinion[12] for the Trinity River, includes a minimum carryover storage in Trinity Reservoir on September 30 of 600,000 AF and requires reconsultation if storage falls below that level, which it did in 2014. However, other analyses have found that a 600,000 AF minimum carryover storage is inadequate. A 2012 report by Reclamation found that September 30 carryover storage requirement of less than 750,000 AF is "problematic" in meeting state and federal Trinity River temperature objectives protective of the fishery.[13]

In 1992 Balance Hydrologics found that a minimum carryover storage of 900,000 AF was necessary to meet Basin Plan temperature objectives.[14]

Analyses completed for Trinity County for the Trinity Record of Decision by Kamman Hydrologics indicated that September 30 Trinity Reservoir carryover storage of at least 1.2 million AF on September 30 is necessary at the beginning of a simulated 1928-1934 drought in order to meet Basin Plan temperature objectives.[15] During the recent drought, Trinity Reservoir storage fell below levels necessary to survive a historic multi-year drought such as 1928-1934.

Furthermore, Reclamation's Mid-Pacific office also produced a preliminary technical

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[11] Ibid : http://bit.ly/2tuIvQc

[12] National Marine Fisheries Service (2000), Biological Opinion for the Trinity River Record of Decision, accessed at: http://www.fws.gov/arcata/fisheries/reports/technical/TREIS_BO_NMFS.pdf

[13] 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

[14] See Balance Hydrologics (6/26/1992) "The Need for Standards for Minimum Carryover Storage in Trinity Reservoir" Accessed at http://tcrcd.net/trl-stor.htm

[15] Memorandum from Greg Kamman to Tom Stokely and Mike Deas on Carryover Storage Analysis Simulated (1928-34) Period, 5/22/1998. Accessed at http://www.c-win.org/webfm_send/414

memorandum on the problem of excessive heating of Trinity Dam releases[16] when they pass through the shallow 7-mile long Lewiston Reservoir. While Trinity Dam releases are normally 43-44°F, summer heating in Lewiston Reservoir can be severe unless approximately 1,800 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 study and environmental document would need to be prepared to select a solution and no such plans exist at this time.

Additionally, the delivery of CVP water to Sacramento River Settlement Contractors who are post-1914 diverters when other post-1914 diverters are enjoined from diversions through state curtailment orders unlawfully depletes storage in Trinity Reservoir and deprives the Trinity River basin area of origin from needed cold water, while also bypassing the priority of water rights in the Sacramento Valley.

Furthermore, during summer and fall, Trinity River diversions to the Sacramento River are often warmer than Shasta Dam releases by three degrees F or more. Diversion of large amounts of Trinity River water to the Sacramento harms Sacramento River salmon through warming and depletes Trinity Reservoir of cold water.

Therefore, in order for the Trinity River to be protected, the revised Biological Opinion should require that Reclamation's is required to comply with the following terms and conditions and that Reclamation's Trinity River water permits be amended as well, as directed in SWRCB Water Quality Order 89-18.[17] The conditions for Reclamation are as follows:

1. Conformance with the instream fishery flows contained in the Trinity River Record of Decision.

2. Provision for release of Humboldt County's 50,000 AF in addition to fishery flows per the 1955 Trinity River Act.

3. Inclusion of permit terms and conditions to require Reclamation to comply with the Trinity River temperature objectives contained in the Water Quality Control Plan for the North Coast Region (NCRWQCB) for all relevant time periods and for all uses of Trinity water diverted to the Sacramento River.

4. A requirement for a minimum cold water storage in Trinity Reservoir adequate to

[16] 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

[17] See SWRCB Water Quality Order 89-18 (pages 18 and 19) at http://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/1989/wq1989_18.pdf

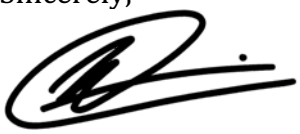
preserve and propagate all runs of salmon and steelhead in the Trinity River below Lewiston Dam during multi-year drought. Based on studies to date, a range of 900,000 AF to 1.2 million AF is appropriate.

5. Require Reclamation to address the temperature issue in Lewiston Reservoir through a feasibility study and environmental document to follow up on the 2012 preliminary technical memorandum by Reclamation.

6. When releases from Spring Creek are more than one degree Fahrenheit warmer than releases from Shasta Dam, limit the export of Trinity River water to the Sacramento River to the amount necessary to meet Trinity River Basin Plan Temperature Objectives. This protects both Trinity and Sacramento River salmon.

Thank you for your consideration.

Sincerely,



Noah Oppenheim
Executive Director
Pacific Coast Federation of Fishermen's Associations
Institute for Fisheries Resources

Nelson, Benjamin <bcnelson@usbr .gov>

SRCC Comments

1 message

Petey Brucker <peteybrucker@gmail.com> Thu, Feb 1, 2018 at 4:08 PM
To: bcnelson@usbr.gov

Dear Mr. Nelson,
Please accept SRCC's comments prepared by Petey Brucker to your agency.
I have pasted, below, the comments of the Salmon River Concerned Citizens.

++

From: Petey Brucker for the Salmon River Concerned Citizens

To: email address- kharrison@usbr.gov
Katrina Harrison- Project Manager, Bureau of Reclamation, Bay-Delta Office, 801 I Street, Suite 140, Sacramento, CA 95814-2536

RE: The Salmon River Conserned Citizens comments prepared by Petey Brucker are submitted on February 1, 2018 . for the proposed NOTICE OF INTENT TO PREPARE A DRAFT ENVIRONMENTAL IMPACT STATEMENT- 82 FR 61789 - for Revisions to the Coordinated Long-term Operation of the Central Valley Project and State Water Project, and Related Facilities by the United States Bureau of Reclamation Katrina Harrison.

February 1, 2018

Dear Ms. Harrison, Project Manager, United States Bureau of Reclamation,,

On behalf of the Salmon River Concerned Citizens, we would like to thank you for providing this opportunity to comment on the proposal to identify alternatives to maximize water deliveries and to optimize power. These comments are submiited to gather information to support the preparation of an Environmental Impact Statement (EIS).

The Bureau of Reclamation (Bureau, Recalamation, USBR, or BOR) has announced it will conduct an environmental analysis of potential modifications to the operation of the Central Valley Project or CVP, in coordination with California's State Water Project, to maximize water deliveries and optimize marketable

> This proposal to maximize water supply delivery; review and consider modifications to regulatory requirements; evaluate stressors on fish and beneficial non-flow measures to decrease stressors; evaluate potential changes in laws, regulations and infrastructure that may benefit power marketability is not appropropriate and is in violation of applicable law.

There is a wide-ranging value in allowing sufficient flows of water from California's snow-covered mountains to the ocean. The water boosts groundwater tables — the very ones Central Valley farmers have overdrawn to a degree that land there is sinking at a rate of almost a foot a year, damaging bridges, roads and even the California Aqueduct. Allowing more water to flow through the Sacramento-San Joaquin Delta freely also better preserves all manner of wildlife beyond the Delta smelt.

The State Water Resources Control Board is responsible for ensuring that any pumping from the Delta complies with California environmental laws. The proposal to expand water use and delivery to southern California will cause damage to the San Francisco Bay . which is the largest estuary west of the Mississippi. This estuary is fed largely by the Sacramento-San Joaquin Rivers. The environmental documentation should assess the short term and longterm impact on the water Silicon Valley and the East Bay count on.

The principle of the Sacramento-San Joaquin Delta (Delta) health argues against Governor Brown's separate, $17 billion twin-tunnel Delta plan, Water Fix, with the expectation to create capacity for greater flows to the Central Valley and for Southern California.

Listed Species in the United States Endangered Species Act and the California Endangered Species Act, such as coho salmon, spring and winter Chinook, and other dependant on the aquatic and riparian habitats such as amphibians, fishes, and wildife should be acknowledged in the EIS and not negatively impacted due to this proposed EIS.

The EIS should keep water in California's rivers to an extent rather than divert it to farmlands. The Delta Smelt, tiny freshwater fish on the brink of extinction and other endagered or threatened species should be more adequately protected. Central Valley agribusiness likes to argue that

sending more water south is prioritizing "people before fish," since the sharp decline in Delta smelt populations has been cited to block increased pumping. But the Delta smelt are the canary in the coal mine.

Spring-run chinook of the Salmon, Klamath, and Trinity Rivers are put more at-risk of extinction if more water is delivered from the Trinity River. The fall chinook in this area will be negatively impacted also if more water from these rivers is delivered to southern California.

New Storage Facilites, such as Sites, Temperance and other Dams and storage facilities should not be associated with this EIS or any reasonable alternatives to maximize water deliveries and optimize power.

The EIS alternative proposal which maximizes water deliveries and optimizes marketable power will negatively affect the Sacramento, Trinity, Feather, American and San Joaquin Rivers, and Tribal Trust responsibilities on the Trinity River.

To maximize water deliveries and optimize marketable power in the short term and long term should be done within the purvue of the California Public Utility Commision.

In closing, every scientific study of the Sacramento-San Joaquin Delta has yielded the same result: The only way to preserve its health and water quality is to allow more fresh water to run through it, not less water. California's salmon runs and the drinking water supply for millions are at risk from this proposal. The Bureau should not provide more water nor be examined in an EIS or any alternatives, which maximize water deliveries and optimize marketable power. Any pumping of more water to southern California from the fragile Sacramento-San Joaquin Delta is not required and should not be an alternative in environmental assessment.

Sincerely,

Petey Brucker
for the Salmon River Concerned Citizens

Harrison, Katrina <kharrison@usbr.gov>

Re: SRCC Comments

Petey Brucker <peteybrucker@gmail.com> Thu, Feb 1, 2018 at 8:52 PM
To: "Nelson, Benjamin" <bcnelson@usbr.gov>
Cc: kharrison@usbr.gov

DearMr. Nelson and Ms. Harrison,

Here is my personal information in the section "From". In addition to my email I've included this my mailing address and phone number with my comments(for the Salmon River Concerned Citizens. The comments are the same..

Sincerely,

Petey Brucker

From: Petey Brucker for the Salmon River Concerned Citizens
address -HCR 4 Box 610, Forks of Salmon CA, 96031, phone number - 530 419 1306,
email address: peteybrucker@gmail.com

To: email address- kharrison@usbr.gov
Katrina Harrison- Project Manager, Bureau of Reclamation, Bay-Delta Office, 801 I Street, Suite 140, Sacramento, CA 95814-2536

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for the Salmon River Concerned Citizens

On Thu, Feb 1, 2018 at 4:26 PM, Nelson, Benjamin <bcnelson@usbr.gov> wrote:

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On behalf of the Salmon River Concerned Citizens, we would like to thank you for providing this opportunity to comment on the proposal to identify alternatives to maximize water deliveries and to optimize power. These comments are submiited to gather information to support the preparation of an Environmental Impact Statement (EIS).

The Bureau of Reclamation (Bureau, Recalamation, USBR, or BOR) has announced it will conduct an environmental analysis of potential modifications to the operation of the Central Valley Project or CVP, in coordination with California's State Water Project, to maximize water deliveries and optimize marketable

> This proposal to maximize water supply delivery; review and consider modifications to regulatory requirements; evaluate stressors on fish and beneficial non-flow measures to decrease stressors; evaluate potential changes in laws, regulations and infrastructure that may benefit power marketability is not appropropriate and is in violation of applicable law.

There is a wide-ranging value in allowing sufficient flows of water from California's snow-covered mountains to the ocean. The water boosts groundwater tables — the very ones Central Valley farmers have overdrawn to a degree that land there is sinking at a rate of almost a foot a year, damaging bridges, roads and even the California Aqueduct. Allowing more water to flow through the Sacramento-San Joaquin Delta freely also better preserves all manner of wildlife beyond the Delta smelt.

The State Water Resources Control Board is responsible for ensuring that any pumping from the Delta complies with California environmental laws. The proposal to expand water use and delivery to southern California will cause damage to the San Francisco Bay . which is the largest estuary west of the Mississippi. This estuary is fed largely by the Sacramento-San Joaquin Rivers. The environmental documentation should assess the short term and longterm impact on the water Silicon Valley and the East Bay count on.

The principle of the Sacramento-San Joaquin Delta (Delta) health argues against Governor Brown's separate, $17 billion twin-tunnel Delta plan, Water Fix, with the expectation to create capacity for greater flows to the Central Valley and for Southern California.

Listed Species in the United States Endangered Species Act and the California Endangered Species Act, such as coho salmon, spring and winter Chinook, and other dependant on the aquatic and riparian habitats such as amphibians, fishes, and wildife should be acknowledged in the EIS and not negatively impacted due to this proposed EIS.

The EIS should keep water in California's rivers to an extent rather than divert it to farmlands. The Delta Smelt, tiny freshwater fish on the brink of extinction and other endagered or threatened species should be more adequately protected. Central Valley agribusiness likes to argue that sending more water south is prioritizing "people before fish," since the sharp decline in Delta smelt populations has been cited to block increased pumping. But the Delta smelt are the canary in the coal mine.

Spring-run chinook of the Salmon, Klamath, and Trinity Rivers are put more at-risk of extinction if more water is delivered from the Trinity River. The fall chinook in this area will be negatively impacted also if more water from these rivers is delivered to southern California.

New Storage Facilites, such as Sites, Temperance and other Dams and storage facilities should not be associated with this EIS or any reasonable alternatives to maximize water deliveries and optimize power.

The EIS alternative proposal which maximizes water deliveries and optimizes marketable power will negatively affect the Sacramento, Trinity, Feather, American and San Joaquin Rivers, and Tribal Trust responsibilities on the Trinity River.

To maximize water deliveries and optimize marketable power in the short term and long term should be done within the purvue of the California Public Utility Commision.

In closing, every scientific study of the Sacramento-San Joaquin Delta has yielded the same result: The only way to preserve its health and water quality is to allow more fresh water to run through it, not less water. California's salmon runs and the drinking water supply for millions are at risk from this proposal. The Bureau should not provide more water nor be examined in an EIS or any alternatives, which maximize water deliveries and optimize marketable power. Any pumping of more water to southern California from the fragile Sacramento-San Joaquin Delta is not required and should not be an alternative in environmental assessment.

Sincerely,

Petey Brucker
for the Salmon River Concerned Citizens

--
Ben Nelson

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January, 31, 2017

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Re: Draft Environmental Impact Statement, Revisions to the Coordinated Long-Term Operation of the Central Valley Project and State Water Project, and Related Facilities

Please accept the following comments from Save California Salmon on the Draft Environmental Impact Statement, Revisions to the Coordinated Long-Term Operation of the Central Valley Project and State Water Project, and Related Facilities. We wish to incorporate by reference the comments of Restore the Delta, The Pacific Coast Federation of Fishermen's Associations, the Golden Gate Salmon Associations, the National Resources Defence Coalition, Defenders of Wildlife, and the The California Sportfishing Protection Alliance. Thank you for the opportunity to comment.

We are aware that this is a scoping project and that it began with a process to create a Biological Assessment for the Federal Water Project, however we are very disappointed that the process is currently focused on "maximizing water diversions" from the Delta, which will put more pressure on all tributaries to the project. We feel that the analysis should instead focus on balancing the needs of fisheries and water quality, with the need for water supplies. We also feel that real water solutions such as water reuse, water conservation through application methods, desalination, and land and water rights retirement should be analyzed. We are glad to see a few of these are mentioned on the Federal Register Notice but are disappointed to see options like new dams and conveyances seem to be prioritized above more reasonable solutions. In the age of global warming how water is used, and whether this use is reasonable, needs to be top priority.

Not only is such a narrow focus a a violation of the Endangered Species Act, Central Valley Improvement Act, the Bay Delta Plan, the National Environmental Policy Act, Tribal Trust and

the Public trust responsibilities, it also runs counter to many other California state laws, along with Federal laws. Save California Salmon would like all of the applicable laws and past decisions regarding water use to be included in all alternatives, and for a restored fisheries and clean water to also be integrated in all alternatives.

The fact is more water diversions are not currently possible due to the habitat loss from dams and diversions in from the state and federal water project without wiping out salmon populations and seriously degrading the water supplies and water quality.

Fish runs in the Bay Delta and in the Trinity and lower Klamath River are in terrible shape with all but one run facing extirpation. Last year the Klamath River suffered the worst salmon returns in history leading to a allocation of one fish per eight Yurok Tribal members. The Sacramento River only had 230,700 fall run Chinook salmon projected down from 650,000 only years before. Wild Spring Chinook salmon numbers dropped into hundreds on the Klamath and Sacramento Rivers and only two Delta smelt were counted. In fact a report claimed without change 45 percent of California's fish species will be extinct within 50 years.

Similarly, the water quality in the almost all of the water sources of the project are declining rapidly in violation of the Clean Water Act and Porter Cologne. The state has declared that almost the entire Central Valley could soon have unusable water due to salinity, and some water treatment plants have their source water may soon be untreatable. All water sources within the project are facing unprecedented levels of nutrients and toxic algae along with temperature issues, and the Delta, lower Sacramento and San Joaquin more closely resemble a science experiment than swimmable, drinkable watersheds. Poor flows, irresponsible agricultural practices, overuse of water, and the need to drain water groundwater from poisoned lands in the Eastern San Joaquin Valley are at the center of the water quality crisis. The overuse of water and drainage issues can, and should be addressed in this process

The state is taking crutal actions to deal with some of these problems however these efforts could be too little too late without the cooperation of the Bureau. The fact is water deliveries can not be maximized from the water project without massive salmon recovery efforts and therefore to make this the sole focus of this process not only guarantees an insufficient range of alternatives in violation of NEPA, but it dooms the BOR to years of litigation and push back from the state of California, other federal agency, and Tribes. There is a better way.

We suggest that this DEIS focuses on alternatives that addresses water conservation, waste in the system including by water users, the retirement of water rights that violate the public trust or cause wide scale pollution throughout water supplies, improvements to the system, climate change resilience, and necessary habitat, water quality and flow restoration projects

We suggest that the BOR works closely with the state not only on coordination of the state and federal water projects but also on unimpaired flow studies and planning, prioritization of salmon habitat restoration in the mid-Sacramento River, water quality improvements, and on fish passage and survival at federal dams and facilities. Many of the the state's currently processes only are focused on flows or water quality improvements and not necessary habitat restoration.

The BOR has the authority and technical expertise to fill this gap to help accomplish restoration goals.This is why we recommend an integrated approach with the state.

- **Applicable Laws**

There are many applicable laws and statues that need to be integrated into this planning process. The Bureau is by federal law required to comply with state water law under section 8 of the Reclamation Act of 1902. Under the Delta Reform Act it is the policy of California to reduce reliance on the Delta for the state's water supply Porter Cologne demands the protection of high quality waters, and the Delta Plan updates will soon deal with the need to restore flows in the San Joaquin and Sacramento River. Fish and Game codes, the State ESA and California Environmental Quality Act should also be considered in this process. For instance some Fish and Game Codes mandate suitable flows for salmon at dams and in some cases fish passage and California Environmental Quality Act demands mitigations.

Federal laws related specifically to the project need to also be integrated in the process. For instance the Central Valley Improvement Act Doubling Standard for Salmon has not been met under past Bureau operations and many of the federal laws pertaining to the Trinity River have not been met in prior Bureau operations.

Furthermore there are many considerations under NEPA that are very important in this process, including the reasonable range of Alternatives, an analysis of growth inducing impacts, an analysis of available science and scientific controversy, and the establishment of an environmentally preferred alternative.

Perhaps the most important issue in both the CEQA and NEPA analysis is a cumulative impacts analysis. A cumulative impacts analysis is not only a requirement of NEPA, it is possibly the most important tool used to assess the impacts of a proposed action. This analysis must include past, present and foreseeable actions. For this project these impacts include the Delta Tunnels Proposal, the Temperance Flat Dam proposal, the Sites Reservoir Proposal, the proposed raising of Shasta Dam, CV-Salts' Final Nitrate and Salt Management Plan, TMDL listings and implementation, Clean Water Act and 303(d) list and TMDL updates and action plans, the Draft Environmental Impact Statement for Revisions to the Coordinated Long-Term Operation of the Central Valley Project and State Water Project, and Related Facilities, Phase 1 and 2 of the revisions to the Delta Plan related to flow standards, the Long Term Plan for the Lower Klamath River, recent water rights and instream flow decisions in a wide variety of watersheds and waterways, updates to the Central Valley Water Quality Control Plan, The Trinity River Record of Decision, plans for reestablishment of fish passage at Shasta Reservoir, recent and upcoming FERC and fish passage decisions on all impacted watersheds, California's Sacramento Valley Salmon Resiliency Strategy, Prop. 1 projects, Yolo Bypass recovery, toxin remediation projects, and the state and federal recovery plans for Delta Smelt, Winter Run Salmon, and Spring Chinook Salmon.

This project will have cumulative impacts with, and impact, all of these processes and plans and appears to directly counter or impede the environmental quality and condition goals of many of these proposals and initiatives. The project must evaluate cumulative impacts to environmental

integrity while contemplating each of these projects and initiatives.

- **Baseline Flows**

The baseline for this analysis needs to include all past and currently occuring flow, habitat restoration and fish passage decisions in the Sacramento River watershed, San Joaquin River, Trinity and Klamath River watersheds, and Bay Delta at the State and Federal level, along with all legal requirements imposed from previous legislation. The baseline should also incorporate all previous Recovery Plans and Reasonable and Prudent Measures for ESA listed species, along with Federal Energy Regulatory Commission (FERC) relicensing and flow decisions.

- **Species Protection and Restoration**

The most important issue that need to be addressed in this process is the fate of the fisheries and water quality of the source rivers. The threats to the Delta's health have grown steadily over the past five decades, and the resulting environmental devastation has pushed the Delta's imperiled fisheries to the brink of extinction. Several species of fish endemic to the Delta have already gone extinct; just twelve indigenous species remain. Critical habitat for the endangered Sacramento River winter run chinook salmon, Central Valley steelhead and spring run chinook, the Delta smelt, and the Southern Distinct Population Segment ("DPS") of the Northern American green sturgeon suffers progressively accelerating degradation. This decline is in violation of the Central Valley Improvement Act Salmon Doubling Standard and California Fish and Game Code Section 6902 and the Salmon Protection Objective in the Bay Delta Plan. Beyond better flow management in all times of year, providing fish passage, improving water quality, and habitat restoration are the best ways for the Bureau to achieve these goals.

Flows should be coordinated in a way to inundate floodplains and provide for habitat. Lack of floodplains and degradation of essential fish habitat are some of the most important impediments to salmonid recovery in the Sacramento River. Floodplains provide important feeding and rearing areas, which lead to increased growth and health for salmon and other species. The need for floodplain inundation is extraordinarily important, and the restoration of flows into the Yolo Bypass have been held up as one of the most important actions that can be taken to increase fish production in the Sacramento River. Similarly restoration flows and habitat improvements for Sutter bypass, Sycan Marsh should also be prioritized in this process.

The restoration of Spring Chinook populations should also be prioritized in this process. The tributaries that are the most important to the Spring Chinook and that provide key Fall Chinook habitat in the upper Sacramento River include: Butte Creek, Clear Creek, Mill Creek Deer Creek, Big Chico Creek and Antelope Creek. Protection of these creeks flows and habitat improvement projects would provide not only for spring chinook, but also for winter run. A Recent study has shown that winter-run also use tributaries at a much higher rate then was once thought.

"The surprising finding was that, in their youth, around half the successful winter run adults had wandered beyond their natal reach of the Sacramento River to feed and grow before continuing

their journey to the ocean. These alternative "non-natal" habitats included Deer, Mill, Battle Creeks, the Delta, Feather and American Rivers, most of which is not designated as critical habitat under the ESA."
https://californiawaterblog.com/2018/01/07/new-paths-to-survival-for-endangered-winter-run-chinook-salmon/

The state would be a great partner for restoring and providing fish passage at these creeks and coordination with the state could lead to cold water flows from these creeks entering the system at key times of the year, which could actually free up water for releases for various purposes. Because of the importance of these creeks the California Department of Fish and Wildlife recently announced a new strategy to protect and restore some of these watersheds.

"*The Strategy focuses special attention on streams that drain to the Sacramento River from Mount Lassen, Mt Shasta, and nearby volcanic peaks. Fed by snowmelt and springs, these streams stay cooler longer than most and offer refuge to winter-run Chinook salmon that evolved to use the spring-fed McCLoud and Pit rivers north of Redding. There, icy waters kept eggs and young fish alive through summer. Today winter-run are forced to spawn 30 miles south, below Shasta Dam. In drought years their eggs and newly hatched fish have not survived due to limited cold-water reserves behind the dam.*"
(http://resources.ca.gov/wp-content/uploads/2017/06/State-Launches-Aggressive-Strategy-to-Aid-Salmon-Steelhead-in-the-Sacramento-Valley.pdf)

Though winter run and spring run are not commercial species and are not currently used for Tribal subsistence, if they were not listed as endangered they would be, and their listing and continued hybridizations with fall run have caused limited fishing opportunities, and has changed the timing of salmon runs and fishing seasons. Both Winter and Spring run are tethering at the edge of extinction. In fact a new report shows that most of the district fish specifies in California are facing extinction in the next 100 years.

*"At the current rate, California stands to lose 45% of its remaining native salmonids, including 11 of 21 anadromous species and 3 of 10 of its inland species, in the next 50 years unless significant actions are taken to stem the decline. (Figure 3). Under present conditions, 23 of the remaining 31 species (74%) are likely to be extinct in the next 100 years." (*SOS II: Fish in Hot Water http://www.capradio.org/media/8795686/sos2.pd*f)*

Spring Chinook numbers are currently at a low of about 722 fish in Deer, Antelope, Mill, Cottonwood, Battle and Clear Creek. These creeks represent almost all of the remaining Sacramento River Spring Chinook beyond Butte Creek.

These record low Spring Chinook numbers mean that it is highly likely that the Spring Run will be uplisted to endangered rather that threatened in the state and possibly federally. This is especially concerning due to new information on the fragile nature of the Spring Run Chinook and Summer Run of Steelhead.

A recent study from the University of Davis shows that the gene that created the Spring Run of Salmon evolved in a single event, and that the spring run is genetically distinct from the fall run. Other studies have shown that changes to habitat and water quality have led to changes in run timing, which has lead to changed genetics which favor fall run salmon. In short, these species are interbreeding due to water quality and habitat issues and creating an earlier run of Fall Chinook that eventually loses the Spring Chinook gene and is even more susceptible to water quality impairments.
https://www.ucdavis.edu/news/study-reveals-evolutionary-history-imperiled-salmon-stocks

- Coordination with State Flow Processes

"Sampling showed that juvenile Chinook salmon do migrate past the site in the summer (August), but are most abundant during the winter months (December to February). Chinook salmon juveniles were most abundant during periods of high flow. Abundance decreased as flows receded. The abundance of fish passing the site also appeared to increase during periods of high turbidity (associated with relatively small increases in flow" (Sites Reservoir DEIS p. 12-51)

We suggest that the BOR not only protect winter and spring flows proposed by the state as part of the Delta Plan update process for the San Joaquin and Sacramento Rivers, but also that the BOR consult with fisheries genetic experts on how to improve the timing and duration of these flows to benefit the spring and winter runs. We can not have a continuation of the flatline management methodology that the state of California is trying to move away from coming from the Bureau. There is scientific consensus that higher winter and fall flows in the Sacramento and Trinity Rivers will help fish production. We suggest that the BOR plans flow releases and carry over storage levels based on these studies and the genetic needs of species, not on bare minimums under the law, or on releases needed to fill reservoirs. These types of fluctuations of flows have been proven to be very harmful to fisheries and diversity.

More natural flow regimes support the various life history characteristics of native aquatic organisms that are adapted to the natural flow regime (Bunn and Arthington 2002; ing et al. 2003; Lytle and Poff 2004). For example, most fish species native to California in general, and the Bay‐Delta in particular, have evolved to spawn during the spring or otherwise use spring flows to access spawning and rearing habitat (Moyle 2002. Phase II Update of the 2006 Bay‐Delta Plan 3‐3 Final Scientific Basis Report)

Management based solely on the needs of farmers or that fragment sections of watersheds harm salmon species directly through the lowering of flows, degradation of water quality and limitation of habitat, but also through creating water quality conditions that encourage predation from non-native species and cause direct harm and avoidance by native fisheries. Many studies document that poor water conditions, flow fluctuations and lack of scouring and high winter flows encourage non-native species and predation. Predation is a serious issue in the Sacramento River and the increases in predator species from flow modifications is well document.

An assessment of streams across the conterminous U.S. shows a strong correlation between simplified or diminished streamflows and impaired biological communities including fish (Carlisle et al. 2011). In addition, when streams are dammed and flow regimes are simplified by dam releases, stream fish communities tend to become simplified and more predictable, usually dominated by species that thrive in simplified and less variable habitats (Brown and Bauer 2009; Kiernan et al. 2012). This has been found to be the case in the Bay-Delta watershed, where native fish and other aquatic organisms have been increasingly replaced by nonnative species (Feyrer and Healey 2003; Brown and May 2006; Brown and Michniuk 2007; Brown and Bauer 2009; Mahardja et al. 2017). Within the watershed, the regions of greatest flow alteration are the most dominated by nonnative species (Brown and May 2006; Brown and Michniuk 2007), where the altered hydrology likely creates conditions more favorable for spawning and rearing of nonnatives than natives (Brown and Bauer 2009) (Phase II Update of the 2006 Bay-Delta Plan 3-2 Final Scientific Basis Report https://www.waterboards.ca.gov/water_issues/programs/peer_review/docs/scientific_basis_phase_ii/201710_bdphaseII_sciencereport.pdf)

We ask that all of these issues are addressed as part of this process

- **Economics, Tribal Trust and Hardships to Fish Dependant Communities**

Abundance indices for Sacramento River Fall Run Chinook, the stock on which the vast majority of commercial and recreational fishing effort is focused, declined from 652,000 to 230,700 in 2017 and the projection is even lower this year. The number of salmon-permitted vessels has declined from approximately 5000 in 1980 to approximately 1100 today. In 2015, only 585 vessels actually landed salmon in California and the numbers for 2017 and 2018 promise to be more dire. In fact some speculate that in the San Francisco area at least 80% of the ocean commercial fishing fleet has been lost in the last 20 years.

In the Klamath Zone, which is completely rural and largely a food desert, the impacts of poor water management, including in the Trinity River, are much more dire as fishing is regularly shut down and tribal communities that directly rely on salmon for food, ceremony and cultural identity are denied salmon.

Fishermen and Tribes bear the majority of the significant financial and health burden resulting from the environmental impacts of state and federal water policy, which in many cases occur in contravention of the law, past settlements, and management plans. The San Joaquin, Trinity and Sacramento River are of paramount economic importance to the fishing industry and all the other industries and communities it supports. Fisheries and fishery-dependent coastal communities have been suffering through back-to- back resource crises, with poor salmon seasons in 2015, 2016, and 2017. It is up to the Bureau to address these crises and uphold obligations

Because of these significant impacts, this analysis should include economic, cultural and socio-economic studies on the impacts to fishing and clean water dependant communities impacted by the federal water project. Water quality degradation and the loss of the fisheries have disproportionate impacts on rural, Tribal and coastal communities due to lack of jobs, lack of clean water supplies, lack of food and direct impacts to cultures along with freedom of

religion for Tribes.

Lack of salmon for fish fish dependant communities, especially those in food deserts or in areas of high unemployment have impacts far beyond one fishermen. They impact those that service boats, those that provide ice, and the families of all those that eat fish. Furthermore lack of opportunities increase social problems such as drug abuse, suicide rates, in-home abuse, and chances for education and social advancement.

A Southwick and Associates study into the benefits of a restored fishery in California found the commercial benefits of a restored fishery to be "*$4.83 billion Income impacts (salaries/wages/benefits, sole proprietor earnings): $2.51 billion Employment (full and part time): 88,672" (Calculation of the Projected Economics and Jobs Impact of Salmon Recovery in California. 06/24/2009 Southwick Associations)*

Southwick and Associates predict that a restored recreational fishery to be worth *"Total sales impacts (total sales that occur in the CA economy): $845.8 million Value-added impacts (salaries/wages/benefits, proprietors & property income, dividends, excise & sales taxes): $442.7 million Employment (full and part time):"*

Salmon are are also Tribal Trust species and several recognized and unrecognized tribes would be directly impacted by the project. Furthermore, the Winnemem Wintu Tribe, along with supporters, are working with the federal government to reintroduce salmon and restore fish passage above the Shasta Dam. Passage at Shasta is federally mandated in the reasonable and prudent measures as part of the current Biologically Opinion for the Operation of the State and Federal Water Projects [https://www.fws.gov/sfbaydelta/CVP-SWP/index.htm]. As stated before former reasonable and prudent measures actions that benefit salmon, such as the fish reintroduction projects at the Shasta Reservoir, should be upheld in this new process.

Furthermore this analysis should disclose that water and salmon are public trust resources in the state of California (https://lawreview.law.ucdavis.edu/issues/45/3/Topic/45-3_Frank.pdf), and that California has established Cultural Beneficial Use and Subsistence Fishing Beneficial Uses as part of water quality standards, whcih can be found at https://www.waterboards.ca.gov/about_us/public_participation/tribal_affairs/docs/bu_outreach.pdf. Protection of beneficial uses needs to be included in the process.

Health impacts to Tribes from lack of salmon should be analysed as part of this process also. Loss of salmon leads to significant health and economic impacts in Tribal communities. For instance a study of the Karuk Tribe on the Klamath River showed the estimated diabetes rate for the Karuk Tribe is 21%, nearly four times the U.S. average and the rate of heart disease for the Karuk Tribe is 39.6%, three times the average. Diabetes rates correlate directly with the loss of spring run salmon. Tribes in others areas suffering from loss of salmon not only have similar health issues but also extremely high rates of unemployments, drug use, and suicides.

For instances in 2015 s salmon returns plummeted the Yurok Tribe, saw suicide rates on the reservation skyrocket to 13 times the national average. Many connect the suicide rate with the loss of purpose and income associated with fishing.

- **Water Quality**

We are very concerned about the water quality impacts to the Sacramento River and Bay Delta from this proposed project. Flows not not only provide significant benefits to fisheries habitat and juvenile migration, but also to overall water quality as they flush chemicals, sediments, nutrients, salts and algae out of the system and increase levels of Dissolved Oxygen. All of these water quality parameters heavily impact assimilative capacity, connectivity, temperature and toxic algae production. Furthermore more water use, especially if it involves practices that waste water or cause impaired return flows to enter surface or groundwater cause more pollution issues creating a situation where more of the water supply is not usable. Dealing with water pollution could create more clean water for use.

This project will could lead to less cold and fresh water reaching the Delta which will lead to saltier water and more pollution in the Delta through temperature, salt, selenium and, Dissolved Oxygen, and algae impairments and higher concentrations of pesticides such as pyrethroid. This could led not only to clean drinking water not being available to 25 million people in California, and the violations of California's water quality laws, but also to the extinction of the Delta Smelt and low numbers of many game species.

An analysis of impacts to beneficial uses of water and water quality in the the supply, and impacts on fisheries, should be included in this process and mitigation measures to protect high quality waters, fisheries and drinking water supplies should be included in all project alternatives.

- **Reasonable Use, Water Storage and Land Retirement Alternative**

We request that the Bureau include not only alternatives to reuse and desalinate water, but also that alternatives that look at solutions to large problems within the system that would save water and thus lead to better deliveries elsewhere including to rivers and the Delta.

One of the options is the retirement of the poisoned lands of the East San Joaquin Valley. Farming toxic lands require large quantities of water to leach salt, and require drains for the subsurface toxic waters that farming created. This is lunacy during drought years and in the light of climate change. The fact that these lands largely have junior water rights that exceed available water supply is a further argument for land retirement as farming these lands is also leading to the unsustainable pumping and pollution of the Central Valley's groundwater. This polluted groundwater is then discharged to surface water through drains.

The retirement of salt laden lands could led to use of associated water rights for instream flows to dilute less easily controlled discharges of salt and nitrates. This would greatly improve water quality in the San Joaquin River and could lead to better storage as less water would need to be released for delusion flows. This would also deal with some of the Interior drainage

responsibilities, help with the Central Valley's salinity issues, improve water quality, save restoration funds and reduce the need to import water for farms.

The U.S. Fish and Wildlife Service has recommended that all 379,00 acres of drainage impaired land in the San Luis Unit be retired and the Bureau of Reclamation's own Economic Analysis stated that land retirement is the most cost-effective way to resolve problems associated with irrigation of toxic soils. Retirement showed immediate success is lowering contamination in groundwater, which would improve the quality of the water supply. Currently taxpayers lose up to $20 million a year to subsidize farming this toxic land, therefore buying out these lands or associated water rights could be money well spent.

- **Trinity River Protection should be Included in All Alternatives**

Federal Laws and Policies:

The *Trinity River Act of 1955* (PL 84-386) "directed and authorized" the Secretary of Interior to "preserve and propagate" the fish and wildlife resources of the Trinity River.

Another provision in the *Trinity River Act of 1955* reserved 50,000 acre-feet for Humboldt County and downstream water users that is embodied in a 1959 water contract between the Humboldt County Board of Supervisors and the Bureau of Reclamation that is separate from fishery flows. A 2014 Solicitor's Opinion has reaffirmed this long- standing water right and the fact that it is in addition to fishery flows under the Trinity River Record of Decision. This fact of law was recently upheld by the Ninth Circuit Court of Appeals in a case that PCFFA intervened on behalf of the federal government.2

The Trinity River Basin Fish and Wildlife Restoration Act of 1984 (PL 98-541) clarified the "preserve and propagate" language from the 1955 Trinity River Act to mean "…restoring fish and wildlife populations in the Trinity River basin to a level approximating that existed immediately before the construction of the Trinity River division."

Under the Tribal Trust Doctrine, and the federally reserved fishing rights of the Hoopa Valley and Yurok Tribes there is a property right associated with the flows of the Trinity River. These rights date back 10,000 years or time immemorial, making them senior to any water rights obtained by the Bureau of Reclamation for the Central Valley Project.

The Central Valley Project Improvement Act, P.L. 102-575 (CVPIA) acknowledged the difference between the Trinity River and Central Valley streams by having separate fishery restoration goals for each basin.

The primacy of the waters of the Trinity River for use in the Trinity River basin is explained in a 1979 opinion by Interior Solicitor by Leo Krulitz on the water contract and drought shortage provisions with the Grasslands Water District:

"…in authorizing the Trinity River Division in 1955, Congress specifically provided that in-basin flows (in excess of a statutorily prescribed minimum) determined by the Secretary to meet in-basin needs take precedence over needs to be served by out of basin diversions."

The Federal Clean Water Act Section 303 approval by the United States Environmental Protection Agency of Trinity River Water Quality Objectives in 19924 constituted establishment of a federal water quality standard that all federal agencies, including the Bureau of Reclamation must comply with. US EPA also stated in their approval that Trinity River diversions to the Sacramento River are a controllable factor in the protection of the Trinity River and have harmed the Trinity River.

The 2000 Trinity River Record of Decision (ROD page 17) clearly stated as follows:

"*From the inception of the TRD, Congress directed this Department to ensure the preservation and continued propagation of the Trinity River's fishery resources and to divert to the Central Valley only those waters surplus to the needs of the Trinity Basin.*"

State Laws and Policies:

The Trinity River's fisheries also have protections under the concept of the Public Trust Doctrine, as expressed in the Mono Lake Opinion (*National Audubon Society vs. Alpine County Superior Court*). "*The public trust…is an affirmation of the duty of the state to protect the people's common heritage of streams, lakes, marshlands and tidelands…."* . – Supreme Court of California, 1983.

The Area of Origin and Watershed Protection Statutes under California law also contain a priority for in-basin uses compared to out of basin uses. The waters of the Trinity River are subject to California's Watershed Protection, Area of Origin and County of Origin Statutes (California Water Code Sections 10505, 11128 and 11460 *et seq.)* that limit the export of its waters to surplus flows only. Water Code Section 11128 specifically applies the watershed protection and county of origin statutes to the Bureau of Reclamation's Central Valley Project, which includes the Trinity River Division of the CVP.

The California Department of Fish and Game (DFG), in its 22 June 2004 comments on the Supplemental EIS/EIR for the Trinity River Mainstem Fishery Restoration Program stated that impacts to listed species in the Central Valley and Delta as a result of increased Trinity River flows (and decreased Trinity River exports to the Sacramento River) are not a "significant impact" requiring mitigation under the California Environmental Quality Act. DFG cited California's watershed protection and area of origin statutes as the rationale for the determination that the priority for Trinity River water is within that basin:
"In California, the controls put in place governing a single source of water supply from two separate basins, requires needs for beneficial uses in the basin of origin be met first- then

needs can be supplied for the other basin."

The North Coast Regional Water Quality Control Board and the California State Water Resources Control Board approved Trinity River temperature objectives in 1991, which were approved by USEPA in 1992.

The concept of doing no harm to the Trinity River is also manifested in Water Right Order 90-05 (WRO 90-05), which contained a term and condition prohibiting harm to the Trinity River as it relates to the export of Trinity River water to the Sacramento River for temperature control on the Sacramento River.

Need for Trinity River Protection in All Alternatives

There is no assurance that the Trinity River and its beneficial uses will be protected from CVP operations because Reclamation's eight Trinity River water permits are not consistent with North Coast Basin Plan temperature objectives and instream flows under the Trinity ROD. Furthermore, the 600,000 acre foot Trinity Reservoir minimum cold water carryover storage requirement in the 2000 NMFS Biological for the Trinity River is inadequate to prevent temperature induced mortality in the Trinity River, particularly during multi-year drought.

The CVP OCAP does nothing to mitigate or prevent catastrophic loss of cold-water storage and basic flows to keep fish in good condition below Trinity and Lewiston Dams, as required by the federal government's Tribal Trust obligations and California Fish and Game Code Section 5937.

Multi-year drought increases the risk to the Trinity and Lower Klamath rivers of losing the cold water stored in Trinity Reservoir to out of basin export. It is essential to note that Trinity River water provides beneficial uses for Coho (listed as threatened) and Chinook salmon, as well as steelhead, Pacific Lamprey, green sturgeon and other species important to Tribal, recreational and commercial fishing communities.

In 1958, the Bureau of Reclamation, pursuant to section 8 of the 1902 Reclamation Act

"Water Quality Control Plan for the North Coast Region" Footnote 5, Table 3-1, page 3-8.00: Accessed at http://www.waterboards.ca.gov/northcoast/water_issues/programs/basin_plan/083105- bp/04_water_quality_objectives.pdf

Daily Average Not to Exceed	Period	River Reach
60°F	July 1- Sept 15	Lewiston to Douglas City Bridge
56°F	Sept 15-Oct 1	Lewiston to Douglas City Bridge
56°F	Oct 1- Dec 31	Lewiston to North Fork Confluence

8 See Water Right Order 90-05, pages 61-62. Accessed at

https://www.waterboards.ca.gov/waterrights/board_decisions/adopted_orders/orders/1990/wro90-05.pdf
See https://www.fws.gov/arcata/fisheries/reports/technical/TREIS_BO_NMFS.pdf

For all these reason the protection of the Trinity River salmon and water quality need to be central to all alternatives an EIS.

Thank you for the chance to comment.

Regina Chichizola
Save California Salmon
P.O. Box 142
Orleans, CA 95556

Jan 31, 2018
South Fork Trinity Up-River Friends

3505 Sonoma Blvd., #320
Vallejo, CA 94590
707-552-3553 – karenwilson19@hotmail.com

Bureau of Reclamation, US Dept of Interior
Attn: Katrina Harrison, Project Manager
Bay-Delta Office
801 I Street, Suite 140
Sacramento, CA 95814-2536
kharrison@usbr.gov

Subject: Comments on Scoping for Environmental Impact Statement (EIS) for Revisions to the Coordinated Long-Term Operation (LTO) of the Central Valley Project and State Water Project and Related Facilities

We are concerned with reliability of water quality and quantity for fisheries from the headwaters of South Fork Trinity River to the Pacific Ocean. From the headwaters of Klamath River and Trinity River to the Pacific Ocean, the quality and quantity of water determine the journey of fishes from the confluence of the South Fork with the Trinity River to the confluence of the Trinity River with the Klamath River, and then to the mouth of the Klamath at Requa, CA. These are the headwaters that also supply most of the high quality water to the Sacramento River.

Please consider all of the following subjects in your Programmatic EIS:

Dept of Interior legal opinion dated Dec23, 2014 from the Office of Solicitor to the Secretary,

Subject: Trinity River Division Authorization's 50,000 Acre-Foot Proviso and the 1959 Contract between the Bureau of Reclamation and Humboldt County

Make science be the guide

Enforce Endangered Species Act, especially in Upper Klamath River Basin with respect to ag operations

Evaluate safety of all dams in system, including California's 3rd largest reservoir, the earthen dam at Trinity Lake

Reduce reliance on the Delta, as required by law, and facilitate the process of restoring the Delta in a timely manner, with high priority

Address excessive subsidies given exclusively to Klamath Basin irrigators, which are out of proportion to subsidies and benefits given to Delta and Central Valley growers

Involve CA Dept of Water Resources

Consider air quality as it relates to the human environment, and the role of power generation

Consider the effects of pesticides and fertilizers on water quality thrughout the system

Provide certainty for fishing industry and fishers, by regulating ag pollution and requiring riparian protection to improve water quality

Federal irrigation water receipts should go to federal Treasury

Irrigators in Klamath should use federal canals, pumps, and other facilities to convey groundwater they want to sell on the open market

US Dept of Interior should maintain fair power costs for irrigators in the Klamath Project rather than reduce them

Commercial agriculture should not be using toxic pesticides or having water rights over the needs of Refuge purposes in the Tule Lake and Lower Klamath Refuges

Restore Lower Klamath Lake and clean the Klamath Irrigation Project's highly polluted ag waste water before that water reahes the Klamath River. Restoring the Lake would also provide additional winter water storage and help eliminate deficits in water supply that have plagued Klamath River Basin for decades, a win-win. That way, Upper Klamath Lake water now used to flush disease organisms from the River's bed could be devoted to irrigation instead. It would be a boon to taxpayers, too.

Examine/Revisit the 2013 Biological Opinion (BO). Since 2013, scientists confirm 48% to 90% of young salmon born in the Klamath River Basin died before they could reach the Pacific Ocean because unnaturally low winter and spring River flows cause salmon disease to become epidemic

BOR needs to protect breeding age Kuptu and C'wam fishes in Clear Lake, high in the Lost River Basin. The flawed BO of 2013 allowed BOR to draw down so that adults cannot get to their spawning grounds in Willow Creek

BOR must provide the cfs flows that are required by Court Order, including reserving water to augment summer flows if needed, for example, releases below Iron Gate Dam

Continue to retire acres that cannot be reclaimed for ag use

Improve ground storage

Improve the certainty for farmers that are caught between deliveries by BOR or the State of CA, and be fair with requiring up-front payments

Require an evaluation of water resources when considering providing for population growth or expansion of agricultural lands

Consider the best known predictions of climate change

Consider allocation of needs for quantities of water required for fire suppression

Consider banning the use of fresh water from this project for the use of fracking, requiring the use of grey water for this purpose, or desalinated water

Increase investment in reducing water use and recycling water

Water Temperatures throughout the system

Water Tempuatures during Wildfires at specific areas

Algae clogging Klamath River system starved of flows

Comply with all laws

Thank You

Please keep us informed of any developments on the EIS, including updates on Public Meetings. We hope the announcements of future meetings will allow more time for planning and public input. Our comments are necessarily brief. Glad to have met members of your team at Public Meeting.

Sincerely,

Karen Wilson for
South Fork Trinity Up-River Friends

United States Department of the Interior

OFFICE OF THE SOLICITOR

December 23, 2014

M-37030

Memorandum

To: Secretary

From: Solicitor

Subject: Trinity River Division Authorization's 50,000 Acre-Foot Proviso and the 1959 Contract between the Bureau of Reclamation and Humboldt County

Introduction

This memorandum responds to the Bureau of Reclamation's request for a legal interpretation of section 2 of the 1955 Act[1] that established the Trinity River Division (TRD) and the corresponding 1959 contract between the Bureau of Reclamation (Reclamation) and Humboldt County (1959 Contract). The request stems in part from a September 2010 letter from the Chairman of the Humboldt County Board of Supervisors seeking to "reaffirm the County's contractual right to not less than 50,000 acre-feet annually from the Trinity Reservoir" based on section 2 of the 1955 Act.[2]

Concerns regarding fishery needs in the lower Klamath River, below the confluence with the Trinity River to the Pacific Ocean, and actions that Reclamation took in the late summer the past three years have further heightened interest in this matter.[3] Over the past twelve years, the Department--particularly Reclamation--has faced increasing pressure to address conditions in the lower Klamath River in order to prevent a fish die-off, such as the one that occurred in September 2002. In five of the past twelve years, Reclamation has responded by releasing additional water from the TRD--first through purchase from willing sellers in 2003 and 2004, and then in 2012 and 2013 under the authority of the 1955 Act to protect the fishery. This year, Reclamation also released flows on an emergency basis, again citing the 1955 Act, to address rapidly deteriorating conditions related to the severe drought. The more recent releases spurred Central Valley Project (CVP) water users to file a lawsuit challenging Reclamation's actions.[4]

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[1] Act of August 12, 1955, 69 Stat. 719.

[2] September 7, 2010 Letter from Humboldt County Chairman Clendenen to Commissioner Connor re: Humboldt County Central Valley Project Contract. *See also infra* note 11.

[3] *See, e.g.,* July 19, 2013 Letter from Congressmen Huffman, Thompson, and Miller to Secretary Jewell (discussing efforts to protect the fishery in 2012 and 2013 and previous requests by Humboldt County and others to utilize section 2 of the 1955 Act); October 2, 2014 Letter from Congressman Huffman to Acting Commissioner Pimley (discussing the desire for Reclamation to address the obligation to make water available under section 2 of the 1955 Act).

[4] Reclamation cited Proviso 1 of the 1955 Act for the TRD supplemental flows (*i.e.* in addition to the volumes established in the 2000 ROD) released in 2012, 2013, and 2014 to protect Klamath and Trinity fish stocks against

During the period since 2002, as well as previously, Humboldt County officials and other interested parties also urged Reclamation to release additional TRD water to support instream flows for salmon.[5]

In response to these concerns, Reclamation is developing a long-term management strategy regarding instream flows in the lower Klamath River. This memorandum provides legal analysis of one of the authorities that Reclamation is considering in developing a long-term augmentation plan.

As discussed in more detail below, I conclude that the two provisos in section 2 of the 1955 Act--one regarding the maintenance of Trinity River flows and other appropriate measures to ensure the preservation and propagation of fish and wildlife (Proviso 1), and the other requiring that not less than 50,000 acre-feet be released annually and made available for Humboldt County and downstream water users (Proviso 2)--represent separate and independent limitations on the TRD's integration with, and thus diversion of water to, the CVP. Accordingly, I conclude that the water envisioned in Proviso 2 does not necessarily fall within the volumes released pursuant to Proviso 1. Additional releases to the Trinity River may also be required pursuant to Proviso 2 in response to proper requests and applicable law.

The legal analysis in this memorandum includes a review of Reclamation's past interpretation of the 1955 Act as well as prior memoranda from the Regional Solicitor's office. The prior interpretations generally deemed water to satisfy Humboldt County and downstream water users under Proviso 2 as being subsumed within the fishery releases of Proviso 1. It is my conclusion that these interpretations may not be consistent with the distinct purposes of the two provisos. I conclude instead that the better reading of the statute is that the two provisos authorize and may require separate releases of water as requested by Humboldt County and potentially other downstream users pursuant to Proviso 2 and a 1959 Contract between Reclamation and Humboldt County.

Relevant Statutory Provisions

Section 2 of the 1955 Act reads:

> Subject to the provisions of this Act, 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 manner as will effectuate the fullest, most beneficial, and most economic utilization of the water resources hereby made available: *Provided*, That the Secretary is authorized and directed to adopt appropriate measures to insure the

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potential disease outbreaks, such as occurred in 2002 in the lower Klamath River. Central Valley water users sought to enjoin this action in 2013. Although the court did not prevent Reclamation from making such augmentation flows in 2013 or 2014, the court's recent ruling questioned Reclamation's ability to rely upon Proviso 1 as authority for the 2013 releases. *San Luis & Delta Mendota Water Authority, et al. v. Jewell, et al.*, Case No.: 1:13-CV-01232-LJO-GSA (E.D. Cal., Oct. 1, 2014). The Department of Justice will be filing a protective notice of appeal on behalf of the Department.

[5] *See, e.g., supra* notes 2 and 3; *infra* note 11 and accompanying text.

preservation and propagation of fish and wildlife, including, but not limited to, the maintenance of the flow of the Trinity River below the diversion point at not less than one hundred and fifty cubic feet per second for the months July through November and the flow of Clear Creek below the diversion point at not less than fifteen cubic feet per second unless the Secretary and the California Fish and Game Commission determine and agree that lesser flows would be adequate for maintenance of fish life and propagation thereof; the Secretary shall also allocate to the preservation and propagation of fish and wildlife, as provided in the Act of August 14, 1946 (60 Stat. 1080), an appropriate share of the costs of constructing the Trinity River development and of operating and maintaining the same, such costs to be non-reimbursable **[Proviso 1]**: *Provided further*, That not less than 50,000 acre-feet shall be released annually from the Trinity Reservoir and made available to Humboldt County and downstream water users **[Proviso 2]**.

Setting and Background

TRD Authorization and Contract with Humboldt County

The Trinity River originates in the Salmon-Trinity Mountains (also known as the Trinity Alps) of northwest California. *See* Attachment 1 (Map). The Trinity River drains approximately 2,965 square miles and flows generally southward until Lewiston, where it then flows northwesterly, joining the Klamath River in Humboldt County near the boundary of the Hoopa Valley Indian Reservation. From this point, the lower Klamath River continues in a northwesterly direction, flowing through Humboldt County and the Yurok Indian Reservation before reaching the Pacific Ocean just south of the California-Oregon border. Reclamation's TRD facilities include Trinity Dam and Reservoir and Lewiston Dam and Reservoir on the Trinity River in Trinity County, and while the facilities allow a portion of the water from the Trinity River to flow to its confluence with the Klamath River, since the completion of the TRD, the facilities have diverted a significant volume of the Trinity River outside of the Trinity River basin and into the Sacramento River Basin to the east, making it available for delivery to Reclamation's CVP contractors.

Plans to divert Trinity River water to the Central Valley began in the 1930s under California's Water Plan.[6] The Department subsequently provided Congress with reports and findings on a plan of development in the early 1950s. Based on the reports, Congress concluded that water "surplus" to the present and future needs of the Trinity and Klamath Basins--estimated at approximately 700,000 acre-feet per year and considered "wasting to the Pacific Ocean"--could be diverted to the Central Valley "without detrimental effect to the fishery resources."[7] Congress authorized the TRD on August 12, 1955 (1955 Act).[8] Attachment 2.

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[6] The *California Water Plan* (Plan), a State document, provides a framework for water managers, legislators, and the public to consider options and make recommendations regarding California's water future. The Plan, which is updated every five years, presents basic data and information on California's water resources--including water supply evaluations and assessments of agricultural, urban, and environmental water uses--to quantify the gap between water supplies and uses. The first Plan was the State Water Plan of 1930, transmitted on January 1, 1931.

[7] H. Rep. No. 84-602, at 4-5 (1955); S. Rep. No. 84-1154, at 5 (1955).

[8] Pub. L. No. 84-386, 69 Stat. 719-21.

Congress authorized the TRD as an integrated component of the CVP in order to increase water supplies for irrigation and other beneficial uses in the Central Valley. Section 2 of the 1955 Act, however, included two provisos that limit this integration. Proviso 1 directed the Secretary to ensure the preservation and propagation of fish and wildlife through the adoption of appropriate measures, including certain minimum flows then deemed necessary in the Trinity River for the fishery. Proviso 2 specified that "not less than 50,000 acre-feet shall be released annually from the Trinity Reservoir and made available to Humboldt County and downstream water users."

In recognition of Proviso 2, a 1959 water delivery contract between Reclamation and Humboldt County states as follows:

> The United States agrees to release sufficient water from Trinity and/or Lewiston Reservoirs into the Trinity River so that not less than an annual quantity of 50,000 acre-feet will be available for the beneficial use of Humboldt County and other downstream users.[9]

Attachment 3. In addition, Reclamation's water permits from the State of California similarly include a distinct condition related to Humboldt County and downstream users.[10]

As discussed more fully below, the Department and Reclamation have previously asserted a view that these two provisos be read as addressing the same block of water notwithstanding the separate statutory provisos, the contract language (which mirrors Proviso 2), and the state water permit terms. Humboldt County has asked Reclamation to provide water pursuant to its contract to protect Klamath and Trinity River fish stocks in 2012, 2013, and 2014 as well as in previous years.[11] The Hoopa Valley Tribe joined in these requests. Reclamation has also received letters from water users supporting Reclamation's prior interpretation of these provisos.[12]

Initial TRD Operations and Subsequent Efforts to Restore and Protect Fish and Wildlife

Following the completion of the TRD in the early 1960s, Reclamation released into the Trinity River 120,500 acre-feet per year, which included the minimum fishery releases set by Proviso 1

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[9] 1959 Contract Article 8.

[10] *See infra* at 50-52.

[11] *See, e.g.,* March 13, 2013 Letter from Humboldt County Board of Supervisors Chairperson Bass and Hoopa Valley Tribe Chairman Masten to Secretary of the Interior Salazar and California Governor Brown re Prompt Action Requested to Protect Klamath River from Catastrophic Fish Kill; August 14, 2013 Letter from Humboldt County Board of Supervisors Chairman Sundberg and Hoopa Valley Tribe Chairman Masten to Secretary of the Interior Jewell re *San Luis & Delta Mendota Water Authority v. Jewell*, Case No. 1:13-CV-01232-LJO-GSA – Urgent Request for Telephone Conference. April 16, 2014 Letter from Hoopa Valley Tribe Chairwoman Vigil-Masten to Secretary of the Interior Jewell re Central Valley Project operations in violation of Law of the Trinity River; July 22, 2014 Letter from Humboldt County Board of Supervisors Chairman Bohn to Secretary of the Interior Jewell re Request for augmentation flows in lower Klamath River; August 14, 2014 Letter from Hoopa Valley Tribe Chairwoman Vigil-Masten to Secretary of the Interior Jewell re Salmon Fishery and Water Crisis. *See also, e.g., supra* note 3.

[12] *See, e.g.,* January 18, 2011 Letter from San Luis & Delta Mendota Water Authority Executive Director Nelson to Commissioner Connor re 1959 contract between Humboldt County and Reclamation for 50,000 acre-feet of Trinity River Division water.

and as further established by the TRD permits issued by the State Water Board.[13] For the first ten years of full operations, TRD diversions to the Central Valley averaged nearly 90 percent of the upper Trinity Basin inflow--exporting to the Central Valley on average 1,234,000 acre-feet annually from the 1,396,000 acre-feet total average inflow into Trinity Lake.[14] Construction of Trinity and Lewiston Dams also resulted in the loss of upstream spawning and rearing habitat and the degradation of fish habitats below the dams. The river's salmon and steelhead populations declined significantly as a result of these combined effects.[15]

A 1980 Environmental Impact Statement (EIS) estimated fish population reductions of 60 to 80 percent and habitat loss to be 80 to 90 percent since completion of the TRD. The EIS attributed the depletion of fish populations to three causative factors--inadequately regulated harvest, excessive streambed sedimentation, and insufficient streamflows--but concluded that insufficient streamflows represented the most critical limiting factor to fishery restoration. Based on the 1980 EIS, the 1955 Act, and trust obligations to the Hoopa Valley and Yurok Tribes, Secretary Andrus directed the U.S. Fish and Wildlife Service to complete a 12-year study to assess the effectiveness of flow and habitat restoration efforts and make recommendations on measures necessary to address the fishery impacts attributable to the TRD consistent with the Department's obligations.[16] Secretary Andrus increased fishery releases--ranging from 140,000 acre-feet in critically dry years to 340,000 acre-feet in normal years--and directed that these releases not be "permanently allocated" to any other purpose until the Secretary could act on the completed report and determine the needs of the Trinity River fishery.[17]

Congress enacted subsequent legislation aimed at addressing the growing problems facing the Trinity River. In 1980, Congress enacted the Trinity River Stream Rectification Act,[18] aimed at controlling sand deposition problems resulting from the degraded Grass Valley Creek watershed. In 1984, Congress passed the Trinity River Basin Fish and Wildlife Management Act,[19] which made findings similar to those in the 1980 EIS and directed the Secretary to develop a program to restore fish and wildlife populations to levels approximating those that existed immediately before TRD construction began.[20] In 1992, Congress enacted the Central Valley Project

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[13] Testimony before the State Water Rights Board on the permits for the TRD established that the water Congress directed to be released in Proviso 1 (150 cfs for July through November and 15 cfs at Clear Creek) would result in 46,000 acre-feet of releases. *In re Applications 5627, 5628, 15374, 15375,15376, 16767, 16768, 17374, United States of America, Bureau of Reclamation*, Before the Water Rights Board, State of California, Dec. 29, 1958 at 31 (1958 Testimony). Condition 8 of the TRD permit then sets out the balance of releases that add up to 120,500 acre-feet per year. *See infra* note 50; *see also* 1958 Testimony at 24.

[14] 2000 ROD at 5. Trinity Lake was formerly known as Trinity Reservoir or Clair Engle Reservoir.

[15] *Id.*

[16] Secretarial Issue Document, Trinity River Fishery Mitigation (January 1981).

[17] *Id.*

[18] Pub. L. No. 96-335.

[19] Pub. L. No. 98-541.

[20] Amendments to the 1984 Act redefined its restoration goals so that the fishery restoration would be measured not only by returning anadromous fish spawners, but also by the ability of dependent tribal and non-tribal fishers to participate fully in the benefits of restoration through meaningful in-river and ocean harvest opportunities, and also expanded the scope of the habitat restoration efforts beyond Weitchpec and the immediate Trinity River Basin to include the lower Klamath River downstream of its confluence with the Trinity River. Trinity River Fish and Wildlife Management Reauthorization Act of 1995, Pub. L. No. 104-143 (May 15, 1996).

Improvement Act (CVPIA), including section 3406(b)(23), which (1) set the minimum flow volume in the Trinity River at not less than 340,000 acre-feet based on the supplemental Secretarial Decision signed by Secretary Lujan in 1991;[21] (2) directed the completion of the 12-year study initiated by Secretary Andrus "in a manner which insures the development of recommendations, based on the best available scientific data, regarding permanent instream fishery flow requirements and [TRD] operating criteria and procedures for the restoration and maintenance of the Trinity River fishery"; and (3) mandated the Secretary to implement the recommendations from the study upon concurrence by the Secretary and the Hoopa Valley Tribe.

In 2000, Secretary Babbitt, with the concurrence of the Hoopa Valley Tribe, issued the 2000 ROD, which relied upon the multi-year Trinity River Flow Evaluation Study (TRFES) completed in 1999 and its associated EIS.[22] In addition to stream modifications, infrastructure improvements, sediment management, and other recommendations, the 2000 ROD adopted a variable annual instream flow regime for the mainstem Trinity River below the TRD, based on the annual forecasted hydrology for the basin, ranging from 369,000 acre-feet in critically dry years to 815,000 acre-feet in extremely wet years.[23] The regime mimics the natural spring snowmelt hydrograph for the basin, with higher flows focused in the spring and early summer months and relatively low base flows from July through March. The flows established in the 2000 ROD also address various habitat requirements of the Trinity River fishery, including spawning and rearing needs, migration cues, temperature conditions, and associated river-maintenance considerations. The 2000 ROD focused on the flow and habitat requirements of the Trinity River mainstem and did not consider the lower Klamath River below its confluence with the Trinity River.

Thus, although efforts were previously made to determine necessary TRD fishery releases, not until completion of the TRFES Final Report and EIS did the Secretary have a fully informed understanding of the biological and physical needs of the fishery based on the best available science, including TRD releases that must be dedicated to ensure the restoration and maintenance of the Trinity River fishery within the mainstem Trinity River.[24] Since 2001 and implementation of the 2000 ROD, flows in the Trinity River have averaged just over 630,000 acre-feet annually

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[21] Secretary Lujan set the minimum release to be "at least" 340,000 acre-feet per year for the remainder of the flow study process to ensure the integrity of the study because five of the first six years had been dry water years.

[22] The TRFES and EIS, and thus the 2000 ROD, focused on measures necessary to restore habitat conditions within the 40 miles of Trinity River mainstem immediately below Lewiston Dam, concluding that the detrimental effects of TRD construction and operation were particularly severe within this area. EIS § 1.3; *see also id.* § 1.2 (discussing purpose and goal of the TRFES as focused on restoration and maintenance of the mainstem Trinity River and its fishery); TRFES fig. 5.1 (showing study area extending from Lewiston Dam to the Hoopa Valley); 2000 ROD at 8.

[23] Central Valley water and power users challenged implementation of the 2000 ROD. The Ninth Circuit affirmed the 2000 ROD, noting that restoration of the Trinity River was "unlawfully long overdue." *Westlands Water District v. Dep't of the Interior*, 376 F.3d 853, 878 (9th Cir 2004). Moreover, the Ninth Circuit specifically rejected Plaintiffs' complaint that the Department impermissibly constrained the action's geographic scope to the Trinity River mainstem, recognizing that "the federal agencies were within their discretion in focusing the EIS on mainstem rehabilitation as a part of promoting fishery basin-wide." *Id.* at 866-67.

[24] As discussed in the final TRFES report, the science supporting the fishery flow volumes and regimes established both as part of the 1955 Act and the 1981 Secretarial Decision focused primarily on single-species management (Chinook salmon) and, initially, only on one life stage of that species (spawning). Trinity River Flow Evaluation Final Report at 1-2, 8 (June 1999).

and diversions to the CVP have averaged nearly 690,000 acre-feet annually.[25]

50,000 acre-foot Proviso and Previous Interpretations

Prior to passage of the 1955 Act, in-basin users became concerned that the TRD authorization would deprive them of water essential for their needs. Various statements in committee reports supporting the 1955 Act emphasized that only water deemed "surplus" to the needs of the Trinity Basin could be exported to the Central Valley. Statements in the Congressional Record also note that the inclusion of Proviso 2 as an amendment during debate on the House floor, after the committee reported the bill out containing only Proviso 1, was "to assure to Humboldt County, Calif., an *additional* 50,000 acre-feet of water from the rivers concerned[.]"[26]

Since the TRD's authorization, offices and bureaus within the Department have asserted a view that Proviso 2 should be read in conjunction with Proviso 1 and not as a separate release requirement. In 1958, Reclamation argued to the State Water Rights Board (State Water Board or Board)[27] that the 1955 Act's section 2 provisos required only a single permit condition. Although the State Water Board included two separate conditions in the TRD permits (*see* Attachment 4) and Reclamation entered into a contract with Humboldt County in 1959 that references Proviso 2, Reclamation sent a letter to the State Water Board on the same day as the contract's execution, noting that it entered the contract "on the basis of our firm position that the 50,000 acre-feet made available thereby is not additive to the 120,000 acre-feet annually released from Lewiston Dam."[28]

Later, in 1974 and 1977, the Regional Solicitor's Office examined the two provisos in the 1955 Act in two separate memoranda. The 1974 memorandum from the Assistant Regional Solicitor to Reclamation's Regional Director, although focused primarily on the issue of whether the 1955 Act authorized "flood control or other purposes generally beneficial to downstream interests" (concluding in the negative), also addressed the issue of an "interpretation of the last proviso of section 2 of the Act as it relates to releases authorized for fish preservation." Attachment 5.[29] With respect to Proviso 2, the 1974 memorandum briefly concluded, without any in-depth analysis:

> The water released for fishery purposes is not consumed, but remains available later for use by other downstream users. In addition, the term "downstream water user" is not specific, but appears to refer to all downstream users generally, including the fishery.

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[25] Trinity River releases during this period have included not only fishery releases pursuant to the 2000 ROD, but also occasional safety-of-dam releases (including more than 400,000 acre-feet in 2006), biennial tribal ceremonial releases, and additional late-summer fishery releases (*see supra* note 4 and *infra* note 35 and accompanying text).

[26] 101 Cong. Rec. H7962 (1955) (emphasis added).

[27] The State Water Rights Board was the predecessor to the State Water Resources Control Board, the entity presently charged with issuing and administering water rights in the State of California.

[28] June 19, 1959 Letter from Regional Director Bellport to California State Water Rights Board.

[29] July 1, 1974 Memorandum from Assistant Regional Solicitor to Reclamation Regional Director re Request for opinion re authority of the Secretary of the Interior to alter present functions and accomplishments of Trinity River Division, Central Valley Project, at 1-3.

> Therefore it is my opinion that since the purpose of the [TRD] is to provide as much water as possible to the Central Valley . . . the 50,000 acre-feet referred to in the last proviso of Section 2 should be construed to include the water necessary to maintain minimum specified instream flows for fish preservation and propagation rather than being considered to be in addition to such flows.[30]

Thus, the 1974 memorandum interpreted the section 2 provisos together rather than as authorizing separate or additional releases to meet the purposes of each proviso.

In 1977, in response to a request from the Field Supervisor for the U.S. Fish and Wildlife Service, the Regional Solicitor "reconsidered" the interpretation of section 2 as set out in the 1974 memorandum. Attachment 6.[31] The 1977 memorandum agreed with the prior interpretation that the section 2 provisos were "not necessarily conflicting purposes," and disagreed with the Service's view that the 1955 Act provided or intended "separate and distinct 'blocks of water' for fish preservation and propagation purposes[.]" The 1977 memorandum also recognized, however, that "diversions made by downstream users" could "caus[e] harm to fish resources" and that the 1955 Act "grant[ed] the Secretary of the Interior broad authority to increase the size of the releases . . . should such additional releases be deemed necessary" to meet the purposes of Proviso 1. Accordingly, the Regional Solicitor "amended" the 1974 memorandum's concluding paragraph (quoted above) by adding the following text:

> [H]owever, it should be noted that the proviso quoted above [Proviso 2] does not limit downstream use to 50,000 acre-feet annually. Rather . . . the Secretary has discretionary authority to release additional water for the purpose of preserving or propagating fish resources.[32]

Humboldt County, Trinity County, the Hoopa Valley Tribe, and other downstream interests have raised this issue periodically over the past few decades. In response to Trinity County's scoping comments on the Sacramento River Water Contracting EIS, Reclamation replied in 1988 that "the 50,000 acre-feet requirement can be made available from the river flow established for fisheries and accretions to the river."[33] In response to Trinity County's request to Secretary Babbitt to use the water for recreation and community development, Reclamation replied in 1995 that Proviso 2:

> was intended for consumptive uses that may develop and require additional releases. As such, the contract with Humboldt County was executed . . . on the basis that the 50,000 acre-feet is included within the total quantity of water provided for in the fishery releases

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[30] *Id.* at 5 (internal citations omitted).

[31] January 21, 1977 Memorandum from Regional Solicitor to Field Supervisor, USFWS, re Trinity River Division, CVP – Reconsideration of July 1, 1974 Memorandum to Regional Director, Bureau of Reclamation, Concerning Section 2 of the Trinity River Division Act.

[32] *Id.* at 2.

[33] January 29, 1988 Letter from Reclamation Regional Director Houston to Chairman Patricia Garrett, Trinity County Board of Supervisors.

and is not additive to that quantity *as long as* reservoir releases, accretions, and tributary flows are sufficient to supply the 50,000 acre-feet required for downstream uses.[34]

Over the past decade, Humboldt County and the Hoopa Valley Tribe made several requests to the Department to make releases pursuant to Proviso 2, primarily to avoid fish die-offs like the one that occurred in the lower Klamath River below its confluence with the Trinity in 2002. Instead, Reclamation has either acquired water from CVP contractors to provide late-season releases into the Trinity River in addition to those included in the 2000 ROD or made releases pursuant to Proviso 1.[35]

Analysis

After a thorough review of the record available to us, I believe the two provisos in section 2 of the 1955 Act address separate and distinct conditions on the TRD's integration with the CVP. Under the 1955 Act and related permits issued by the State Water Board, Proviso 2 establishes a separate obligation for Reclamation to release water from the TRD to provide for beneficial use by Humboldt County and other downstream users. This obligation is not subsumed within the obligation to release water pursuant to Proviso 1. Accordingly, additional releases from the TRD under Proviso 2 may be required in response to proper requests from Humboldt County or other downstream users.

In reaching this conclusion, I recognize there could be implications for Reclamation when altering its past practice to conform with this opinion. I believe, however, that if additional review and evaluation leads us to the conclusion that the past interpretation is erroneous, whether based on further legal review or changed circumstances, then the Department has an obligation to change its interpretation.[36] My reasoning follows.

1955 Act

Prior analyses of the 1955 Act emphasized the intent to develop facilities in the Trinity River Basin to provide additional water supplies to the Central Valley. As noted in the 1974 memorandum, section 1 of the 1955 Act authorized the TRD for the "principal purpose of increasing the supply of water available for irrigation and other beneficial uses in the Central Valley[.]" Likewise, section 2 provided that the TRD "shall be integrated and coordinated" with the CVP "in such a manner as will effectuate the fullest, most beneficial, and most economic utilization of the water resources hereby made available[.]"

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[34] January 30, 1995 Letter from Reclamation Regional Director Patterson to Chairman S.V. Plowman, Trinity County Board of Supervisors, re Federal Reserved Water Right to 50,000 Acre-Feet From the Trinity Division of the Central Valley Project (re: Your Letter Dated November 16, 1994) (emphasis added).

[35] These releases occurred during the pendency of, and immediately following the conclusion of, the CVP water and power users' lawsuit challenging the 2000 ROD. *See supra* note 23. In an April 2003 order, Judge Wanger specifically authorized the 2003 supplemental releases, up to 50,000 acre-feet, during the litigation and pending appeal in order to minimize the potential die-off of salmon as occurred in the lower Klamath River in 2002.

[36] *See Chisholm v. FCC*, 538 F.2d 349, 364 (D.C. Cir. 1976) ("We note initially that an administrative agency is permitted to change its interpretation of a statute, especially where the prior interpretation is based on error, no matter how longstanding.").

Section 2, however, expressly restricted this integration. The opening clause specifically states that the TRD's integration and coordination with the CVP shall be "[s]ubject to the provisions of this Act[.]" Section 2 then included two provisos:

> *Provided*, That the Secretary is authorized and directed to adopt appropriate measures to insure the preservation and propagation of fish and wildlife [including, but not limited to, the maintenance of flows at certain specified minimum levels]; *Provided further*, That not less than 50,000 acre-feet shall be released annually from the Trinity Reservoir and made available to Humboldt County and downstream water users.

These provisos set forth two separate and distinct limitations on the integration of the TRD with the CVP.

Proviso 1 refers generally to the preservation of fish and wildlife, whereas Proviso 2 refers to releases of water made available for downstream entities. Proviso 1 thus requires releases for distinct purposes, whereas Proviso 2 has no restriction on uses for the released water, instead specifying the entities that will be using the water. Proviso 1 requires a release for instream purposes, while Proviso 2 appears to allow any beneficial use contemplated by "Humboldt County and downstream water users," including diversions for consumptive use, most likely the use envisioned at the time the language was developed.[37] Thus, a conclusion that water uses under Proviso 2 are always incorporated into and subsumed within the releases in Proviso 1 is at odds with the separate purpose and stand-alone nature of each proviso of the 1955 Act.

An interpretation that Proviso 2 is always subsumed within Proviso 1 strains the practical operation of Proviso 2 because Humboldt County and other downstream users would, under such an interpretation, have to rely on instream flows provided for the fishery, by design water released at specific times and specific volumes to *remain* instream and not be used for consumptive purposes. The instream fishery flows may not necessarily meet the needs or uses of those downstream users or be "available" to those users at the time it is needed as envisioned by Proviso 2.[38] In other words, a reading that establishes that the releases for use by Humboldt County are necessarily part of the fish releases would mean that the fishery would be shorted any time Humboldt County or other downstream water users diverted 50,000 acre-feet or used it in some other way that did not support the fishery. Such an outcome is inconsistent with the language and structure of the 1955 Act, and I conclude that the better reading is that the two provisos address separate releases of water. Indeed, the language in Proviso 2 states that 50,000 AFY "shall be released annually . . . and made available. . ." to Humboldt County and other downstream users. This wording on its face ensures that on an annual basis a certain amount of water be made available to local and downstream communities, particularly in those

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[37] In fact, the Humboldt County Board of Supervisors adopted Resolution No. 827 in April 1955, in which the Board agreed not to oppose the bill that became the 1955 Act if it guaranteed that the County could "divert up to 100,000 acre feet of water yearly for its use in irrigation, commercial, residential and industrial purposes" and also ensured minimum Trinity River flows. As later agreed and then enacted, Proviso 2 specifies instead "not less than 50,000 acre-feet" annually for the County and downstream users and does not articulate any particular use.

[38] As a corollary concern, if downstream users were to divert water released for preservation of fish and wildlife, then the intent of Proviso 1 may not be met.

circumstances when releases under Proviso 1 or other appropriate authorities are not a viable means for delivering such water.

Thus, Provisos 1 and 2 are stand-alone provisos that restrict the operative effect of the 1955 Act's principal purpose, *i.e.*, the integration of the TRD with the CVP. *See Cox v. Hart*, 260 U.S. 427, 435 (1922) (the purpose of a proviso "is to except something from the operative effect, or to qualify or restrain the generality, of the substantive enactment to which it is attached"); *Wayman v. Southard*, 23 U.S. 1, 30 (1825) (provisos are "generally intended to restrain the enacting clause, and to except something which would otherwise have been within it, or, in some measure, to modify the enacting clause"). The conclusion of these cases is consistent with *Sutherland's Statutory Construction*, which describes the purpose of statutory provisos as "restricting the operative effect of statutory language to less than what its scope of operation would be otherwise."[39] In other words, the 1974 memorandum reached its conclusion that *the* "purpose" of the TRD was "to provide as much water as possible to the Central Valley" without a careful examination of this settled principle regarding provisos, the 1955 Act, its legislative history, or contemporaneous events such as the state permit issuance and proceedings and Reclamation's contract with Humboldt County.

In 1979, Solicitor Krulitz, in construing whether general categories of priorities under CVP authorizations should be accorded equal priority in critically dry years, contrasted the general nature of the CVP with the specific provisions of the TRD's authorization. In doing so, Solicitor Krulitz noted that both provisos provide a limitation on the integration of the TRD with the CVP:

> On occasion the Congress has specifically limited the Secretary's discretion in meeting the general CVP priorities. For example, in authorizing the Trinity River Division of the CVP in 1955, Congress specifically provided that in-basin flows (in excess of a statutory prescribed minimum) determined by the Secretary to be necessary to meet in-basin needs take precedence over needs to be served by out of basin diversion. *See* Pub. L. No. 84-386, § 2. In that case, Congress' usual direction that the Trinity River Division be integrated in the overall CVP, set forth at the beginning of section 2, is expressly modified by and made subject to the *provisos* that follow giving direction to the Secretary regarding in-basin needs.[40]

Attachment 7. My position herein, that both provisos authorize separate and distinct limitations on the ability of Reclamation to import water into the Central Valley, is consistent with and builds on Solicitor Krulitz's opinion that the requirements of section 2 must be met before water may be exported from the Trinity River Basin.

Legislative History

Further support for my interpretation can be found in the legislative history of the 1955 Act. In addition to generally supportive statements in committee reports, statements regarding both

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[39] Sutherland § 47:08.

[40] Memorandum from the Solicitor to the Assistant Secretary – Land and Water Resources, *Proposed Contract with Grasslands Water District* at 3-4 (December 7, 1979) (emphasis (italics) was underlined in original) (1979 Grassland Memorandum).

Proviso 2 and the general intent of the legislation can be found in the Congressional Record and other contemporary sources.

As an initial matter, the bill that led to the 1955 Act, H.R. 4663, originally only included the fishery proviso in section 2. Inclusion of Proviso 2 occurred in order to secure congressional support for the legislation in the face of downstream opposition, including opposition from representatives of Humboldt County who were concerned that sufficient study had not been done regarding their water needs and that the TRD would not provide for the future needs of the basin.[41]

The bill, as reported by the House committee, emphasized:

> that there is available for importation from the Trinity River, water that is surplus to the present and future water requirements of the Trinity and Klamath River basins, and that surplus water, in the amount proposed in the Trinity division plan, can be diverted without detrimental effect to the fishery resources.[42]

The House subsequently took up H. Res. 263, the Rules Committee's terms for consideration of H.R. 4663.[43] The rules specifically allowed floor amendments to the bill. During an exchange regarding the resolution, Congressman Ellsworth specifically noted the intent to offer an amendment to address downstream concerns:

> [I]t is also my understanding informally that another amendment will be offered by the committee which will probably satisfy the opposition to the bill by another representative

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[41] *See* Hearing on H.R. 4663, *H. Subcomm. on Irrigation and Reclamation of the Comm. on Interior and Insular Affairs*, 84th Cong. 104-06 (Statements of Cong. Scudder), 169-70 (Statements of Richard Denbo, Humboldt County Chamber of Commerce) (April 13, 1955) [hereinafter *April 13, 1955 Hearing*]. After the hearing, the Humboldt County Board of Supervisors adopted Resolution No. 827, which the Board submitted to Congress and the Executive Branch and which promised no opposition to the TRD's authorization if (1) H.R. 4663 were amended to include specific quantities to Humboldt County for irrigation, commercial, and other purposes and (2) river flows were maintained below the TRD at certain specified levels. *See supra* note 37.

[42] H. Rept. No. 84-602, at 4 (1955).

The legislative history of the 1955 Act supports a more expansive view of Proviso 2. In addition to the language quoted above that emphasizes how only water "surplus to the present and future water requirements of the Trinity *and Klamath River basins*" would be available for export, other portions of the legislative history provide further support. For example, in advocating for the TRD, the Administration emphasized how TRD diversions from the "coastal basins" (the Trinity River itself does not touch the coast) to the Central Valley "would not affect future development of either the Trinity River Basin or the Klamath River Basin[.]" *April 13, 1955 Hearing* at 4, 10. Moreover, downstream opposition to the bill came specifically from representatives from the "Klamath River" or "Klamath Basin," including specific reference to Humboldt County as part of that group, and not just Trinity Basin interests. *See, e.g., id.* at 26 (exchange between Cong. Dawson and witness Murray); *id.* at 104-06 (referencing concerns of both Humboldt and Del Norte counties re effects to north coast communities); April 16, 1955 Redding Hearing at 71-72 (quoting concerns raised by Yurok Princess Brantner, from the lower Klamath River strip of the Reservation (which ran along the lower 20 miles of the Klamath River before it enters the Pacific Ocean), regarding fish spawning, logging, and other resource issues on the lower Klamath River affected by the bill); *see* Hearing on H.R. 4663, *S. Subcomm on Irrigation and Reclamation of the Comm. on Interior and Insular Affairs*, 84th Cong. at 18 [hereinafter *July 14, 1955 Senate Hearing*] (letter from Cong. Scudder noting objections of Humboldt and Del Norte county residents and how the Proviso 2 language will satisfy the concerns of downstream users).

[43] 101 Cong. Rec. 7,961 (1955).

> from California [Congressman Scudder]. As I understand it, this amendment will be offered to assure Humboldt County, Calif., an *additional* 50,000 acre-feet of water from the rivers concerned, which should properly take care of the neighboring area.[44]

Two weeks later, a colloquy between Congressmen Scudder and Engle, the bill's sponsor, secured the inclusion of the new Proviso 2 in order to ensure "water for people downstream[.]"[45] The Senate took up the amended bill and noted the inclusion of Proviso 2 as necessary to avoid downstream opposition.[46]

Thus, the legislative history, explaining the amendment that added Proviso 2, supports my interpretation that Proviso 2 should be interpreted as not being subsumed within Proviso 1. Rather, Proviso 2 was included to meet separate and distinct concerns from the in-basin communities and set aside an "additional" volume of water to address these concerns. This interpretation would also be consistent with the rule of statutory construction to give meaning to all legislative language within an enactment and to avoid "surplusage."[47]

State Water Board, TRD Permits, Reclamation's Contract with Humboldt County, and Federal and State Law Considerations

Between 1957 and 1959, the State Water Board held hearings on Reclamation's permit application for the TRD. Reclamation argued for one permit condition to capture both provisos found in section 2 of the 1955 Act.[48] Conversely, Humboldt County and California's Department of Fish and Game (CDFG) argued that the Board should adopt separate permit conditions to address each proviso because they contained distinct and potentially exclusive purposes for the water release and were included for distinct purposes.[49] The Board rejected Reclamation's interpretation and adopted a condition for each proviso, Condition 8[50] for Proviso

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[44] *Id.* at 7,962 (emphasis added).

[45] 101 Cong. Rec. 8,888 (1955).

[46] *July 14, 1955 Senate Hearing* at 11 (Statement of Sen. Kuchel), 18 (Letter from Cong. Scudder).

[47] *See, e.g., United States v. Menasche*, 348 U.S. 528, 538-39 (1955).

[48] *See, e.g., In the Matter of Applications 5627, 5628, 15374, 15375, 15376, 16767, 16768 and 17374, United States of America, Bureau of Reclamation, Applicant, California Department of Fish and Game (CDFG), Protestant, Trinity River, Trinity County, Before the Water Rights Board, State of California, Sacramento, California*, at 10-11 (written testimony that the 120,500 acre-feet released as specified in Proviso 1 would "satisfy the requirements for fish culture and the quantity set forth in Section 2 . . . that not less than 50,000 acre-feet be released annually . . . and made available to Humboldt County and downstream water users"), 23 (objecting to separate condition that would make second proviso "additive" to the water released under first proviso) (December 29, 1958).

[49] *Id.* at 18-19 (noting CDFG's concerns that use by downstream users not "cut into" water releases for fish), 28-30 (detailing County's position that Proviso 2 requires a separate release from TRD to be made available for downstream users and that the legislation clearly distinguishes this release from those for the fishery), 97-98 (reiterating County's position and requesting inclusion of separate condition in Reclamation's TRD permits).

[50] Condition 8 states:

> Permittee shall at all times bypass or release over, around or through Lewiston Dam the following quantities of water down the natural channel of Trinity River for the protection, preservation and enhancement of fish and wildlife from said dam to the mouth of said stream;
>
> | | |
> |---|---|
> | October 1 through October 31 | 200 cfs |
> | November 1 through November 30 | 250 cfs |

1 and Condition 9[51] for Proviso 2, in the permits issued to Reclamation.[52] Those 1959 permits are still in effect today. The Board's inclusion of two separate conditions reflects adoption of CDFG's interpretation at the time. Although not wholly dispositive of the issue, this contemporaneous construction of the State's position is consistent with the statutory and legislative history analysis above.

The language of the 1959 Contract with Humboldt County, which is still valid and in effect today, does not alter this analysis. The 1959 Contract cites the 1955 Act and essentially restates Proviso 2. The Contract states in Article 8:

> The United States agrees to release sufficient water from Trinity and/or Lewiston Reservoirs into the Trinity River so that not less than an annual quantity of 50,000 acre-feet will be available for the beneficial use of Humboldt County and other downstream users.

On the same day that this 1959 Contract was signed, Reclamation sent a letter to the Board stating:

> This contract has been executed on the basis of our firm position that the 50,000 acre-feet made available thereby *is not additive* to the 120,500 acre-feet annually to be released from Lewiston Dam as provided in an agreement between the United States and the State Department of Fish and Game dated March 27, 1959, copies of which have been furnished to you.[53]

Although the contemporaneous statement made in the cover letter reflects the Regional Director's interpretation at the time, a rationale for the statement was not included.

Lastly, while I believe that federal law sets forth the legal framework for the analysis of whether the two provisos are independent and separate conditions on the TRD's integration with the CVP, I also believe the interpretation set forth in this memorandum is consistent with state water law principles. The 1902 Reclamation Act, incorporated in both the 1955 Act and the 1959 Contract, directs the Secretary to defer to state law regarding the "control, appropriation, use, or distribution of water used in irrigation, or any vested right acquired thereunder" to the extent not inconsistent with federal law.[54] Here, Congress specifically limited the integration of the TRD with the rest of the CVP in the 1955 Act by recognizing that in-basin needs for Humboldt

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December 1 through December 31	200 cfs
January 1 through September 30	150 cfs

Any water released through said Lewiston Dam for use in the fish hatchery now under construction adjacent thereto shall be considered as partial fulfillment of the above schedule.

[51] Condition 9 states:

Permittee shall release sufficient water from Trinity and/or Lewiston Reservoirs into the Trinity River so that not less than an annual quantity of 50,000 acre-feet will be available for the beneficial use of Humboldt County and other downstream users.

[52] State Water Permits under Application Nos. 5627, 15374, 15376, 16767 and 16768 (September 16, 1959).

[53] June 19, 1959 Letter from Regional Director Bellport to California State Water Rights Board. (Emphasis added).

[54] Act of June 17, 1902, 32 Stat. 388; *see, e.g., California v. United States*, 438 U.S. 645 (1978).

County and downstream users, as well as the responsibilities to preserve fish and wildlife, take precedence over the needs to be served by out-of-basin diversions.[55] As discussed above, the State Water Board then included a separate permit condition, contrary to Reclamation's position at the time, which reflected the language of Proviso 2 and required releases for beneficial use by Humboldt County and other downstream users.[56] Interpreting the two provisos of the 1955 Act's section 2 as independent obligations is consistent with state water law principles and is consistent with the TRD permit conditions.

Implementation

Based upon this legal analysis, it is recommended that Reclamation conduct an appropriate level of analysis in response to a request for a release of water under Proviso 2 to determine the potential uses to which this water might be put, any other applicable legal requirements that must be addressed prior to releasing said water, whether existing operations or other authorities can fulfill the pending request, and then determine what additional actions may be appropriate under the circumstances. For example, Humboldt County may anticipate future consumptive uses that would be incompatible with instream fishery purposes; releases for such beneficial uses likely should not be made under Proviso 1 but as additional releases under Proviso 2. Conversely, the County or other downstream users could request releases that would be consistent with or duplicative of releases already being made pursuant to Proviso 1; under those circumstances, releases as requested under Proviso 2 may not be required. To the extent Proviso 1 water is not available, the Proviso 2 water, which may be put to any beneficial use, should be available to satisfy the articulated use. In addition, as stated at the outset of this opinion, a release made under Proviso 2 may also be part of the long-term management strategy regarding instream flows in the lower Klamath River.

Conclusion

Based on the analysis above, I conclude that the legislation authorizing the TRD contains separate and independent limitations on the TRD's integration with, and thus diversion of water to, the CVP. To the extent prior memoranda of the Solicitor's Office could be interpreted to reach contrary conclusions in this regard, those memoranda are hereby superseded.

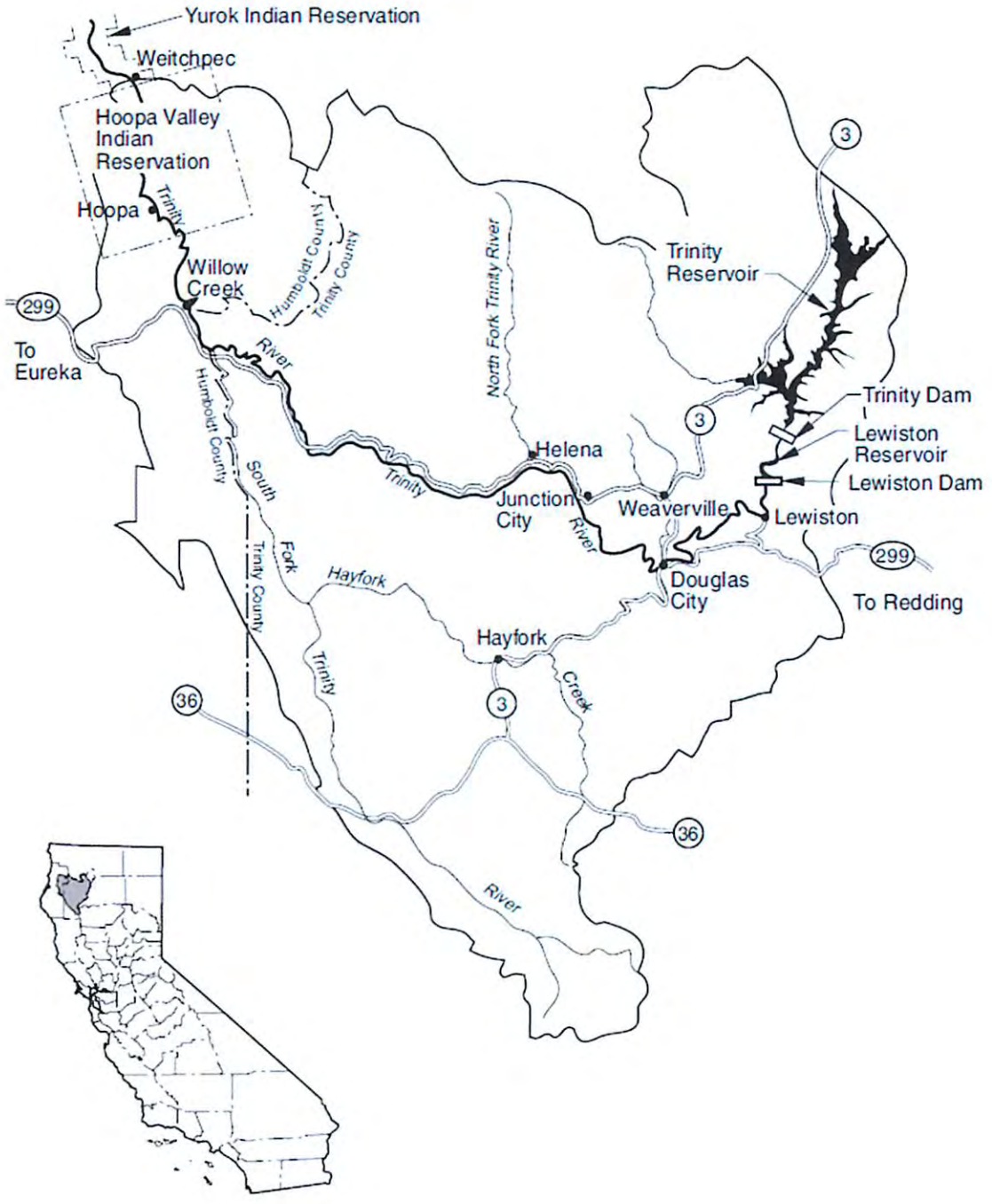
Attachments

Hilary C. Tompkins

[55] 1979 Grasslands Memorandum, *supra* at 3-4; 2000 ROD at 6, 25.

[56] The State Water Board also included a separate condition for Trinity County (Condition 10) in the TRD permits to allow for use in the County as provided in California Water Code Section 10505.

ATTACHMENT 1


Yurok Indian Reservation
Weitchpec
Hoopa Valley Indian Reservation
Hoopa
Trinity
Willow Creek
Humboldt County
Trinity County
299
To Eureka
River
North Fork Trinity River
Trinity Reservoir
3
Trinity Dam
Lewiston Reservoir
Lewiston Dam
Lewiston
Helena
Trinity
Junction City
Weaverville
River
Humboldt County
South Fork
Trinity County
Hayfork
Douglas City
299
To Redding
Hayfork
Creek
Trinity
3
36
36
River

ATTACHMENT 2

Public Law 386 CHAPTER 872

AN ACT

August 12, 1955
[H. R. 4663]

To authorize the Secretary of the Interior to construct, operate, and maintain the Trinity River division, Central Valley project, California, under Federal reclamation laws.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That, for the principal purpose of increasing the supply of water available for irrigation and other beneficial uses in the Central Valley of California, the Secretary of the Interior, acting pursuant to the Federal reclamation laws (Act of June 17, 1902, 32 Stat. 388, and Acts amendatory thereof or supplementary thereto), is authorized to construct, operate, and maintain, as an addition to and an integral part of the Central Valley project, California, the Trinity River division consisting of a major storage reservoir on the Trinity River with a capacity of two million five hundred thousand acre-feet, a conveyance system consisting of tunnels, dams, and appurtenant works to transport Trinity River water to the Sacramento River and provide, by means of storage as necessary, such control and conservation of Clear Creek flows as the Secretary determines proper to carry out the purposes of this Act, hydroelectric powerplants with a total generating capacity of approximately two hundred thirty-three thousand kilowatts, and such electric transmission facilities as may be required to deliver the output of said powerplants to other facilities of the Central Valley project and to furnish energy in Trinity County: *Provided*, That the Secretary is authorized and directed to continue to a conclusion the engineering studies and negotiations with any non-Federal agency with respect to proposals to purchase falling water and, not later than eighteen months from the date of enactment of this Act, report the results of such negotiations, including the terms of a proposed agreement, if any, that may be reached, together with his recommendations thereon, which agreement, if any, shall not become effective until approved by Congress. The works authorized to be constructed shall also include a conduit or canal extending from the most practicable point on the Sacramento River near Redding in an easterly direction to intersect with Cow Creek, with such pumping plants, regulatory reservoirs, and other appurtenant works as may be necessary to bring about maximum beneficial use of project water supplies in the area.

Central Valley project, Calif. Trinity River division.

43 USC 371 note.

SEC. 2. Subject to the provisions of this Act, 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 manner as will effectuate the fullest, most beneficial, and most economic utilization of the water resources hereby made available: *Provided*, That the Secretary is authorized and directed to adopt appropriate measures to insure the preservation and propagation of fish and wildlife, including, but not limited to, the maintenance of the flow of the Trinity River below the diversion point at not less than one hundred and fifty cubic feet per second for the months July through November and the flow of Clear Creek below the diversion point at not less than fifteen cubic feet per second unless the Secretary and the California Fish and Game Commission determine and agree that lesser flows would be adequate for maintenance of fish life and propagation thereof; the Secretary shall also allocate to the preservation and propagation of fish and wildlife, as provided in the Act of August 14, 1946 (60 Stat. 1080), an appropriate share of the

16 USC 661-666c.

costs of constructing the Trinity River development and of operating and maintaining the same, such costs to be non-reimbursable: *Provided further*, That not less than 50,000 acre-feet shall be released annually from the Trinity Reservoir and made available to Humboldt County and downstream water users.

SEC. 3. The Secretary is authorized to investigate, plan, construct, operate, and maintain minimum basic facilities for access to, and for the maintenance of public health and safety and the protection of public property on, lands withdrawn or acquired for the development of the Trinity River division, to conserve the scenery and the natural, historic, and archeologic objects, and to provide for public use and enjoyment of the same and of the water areas created by these developments by such means as are consistent with their primary purposes. The Secretary is authorized to withdraw from entry or other disposition under the public land laws such public lands as are necessary for the construction, operation, and maintenance of said minimum basic facilities and for the other purposes specified in this section and to dispose of such lands to Federal, State, and local governmental agencies by lease, transfer, exchange, or conveyance upon such terms and conditions as will best promote their development and operation in the public interest. The Secretary is further authorized to investigate the need for acquiring other lands for said purposes and to report thereon to the Committees on Interior and Insular Affairs of the Senate and House of Representatives, but no lands shall be acquired solely for any of these purposes other than access to project lands and the maintenance of public health and safety and the protection of public property thereon without further authorization by the Congress. All costs incurred pursuant to this section shall be nonreimbursable and nonreturnable.

Report to Congress.

SEC. 4. Contracts for the sale and delivery of the additional electric energy available from the Central Valley project power system as a result of the construction of the plants herein authorized and their integration with that system shall be made in accordance with preferences expressed in the Federal reclamation laws: *Provided*, That a first preference, to the extent of 25 per centum of such additional energy, shall be given, under reclamation law, to preference customers in Trinity County, California, for use in that county, who are ready, able and willing, within twelve months after notice of availability by the Secretary, to enter into contracts for the energy: *Provided further*, That Trinity County preference customers may exercise their option on the same date in each successive fifth year providing written notice of their intention to use the energy is given to the Secretary not less than eighteen months prior to said date.

Payments to Trinity County, Calif.

SEC. 5. The Secretary is authorized to make payments, from construction appropriations, to Trinity County, California, of such additional costs of repairing, maintaining, and constructing county roads as are incurred by it during the period of actual construction of the Trinity River division and as are found by the Secretary to be properly attributable to and occasioned by said construction. The Secretary is further authorized and directed to pay to Trinity County annually an in-lieu tax payment out of the appropriations during construction and from the gross revenues of the project during operation an amount equal to the annual tax rate of the county applied to the value of the real property and improvements taken for project purposes in Trinity County, said value being determined as of the date such property and improvements are taken off the tax rolls.

Payments to public-school districts.

Payments to the public-school districts in the project area affected by construction activities shall be made pursuant to existing law.

SEC. 6. There are hereby authorized to be appropriated for construction of the Trinity River division $225,000,000, plus or minus such amounts, if any, as may be justified by reason of ordinary fluctuations in construction costs as indicated by engineering cost indexes applicable to the type of construction involved herein, and, in addition thereto, such sums as may be required to carry out the provisions of section 5 of this Act and to operate and maintain the said development. Appropriation.

Approved August 12, 1955.

Public Law 387 — CHAPTER 873

AN ACT

To reemphasize trade development as the primary purpose of title I of the Agricultural Trade Development and Assistance Act of 1954.

August 12, 1955 [S. 2253]

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled. That section 103 (b) of the Agricultural Trade Development and Assistance Act of 1954 is amended by striking out "$700,000,000" and inserting in lieu thereof "$1,500,000,000. This limitation shall not be apportioned by year or by country, but shall be considered as an objective as well as a limitation, to be reached as rapidly as possible so long as the purposes of this Act can be achieved within the safeguards established." Agricultural trade development. 68 Stat. 456. 7 USC 1703 (b).

SEC. 2. Section 106 of such Act is amended by adding the following: "The Secretary of Agriculture is also authorized to determine the nations with whom agreements shall be negotiated, and to determine the commodities and quantities thereof which may be included in the negotiations with each country after advising with other agencies of Government affected and within broad policies laid down by the President for implementing this Act." 68 Stat. 457. 7 USC 1706.

Approved August 12, 1955.

Public Law 388 — CHAPTER 874

AN ACT

To amend the Federal Property and Administrative Services Act of 1949 to make temporary provision for making payments in lieu of taxes with respect to certain real property transferred by the Reconstruction Finance Corporation and its subsidiaries to other Government departments.

August 12, 1955 [H. R. 6182]

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the table of contents contained in the first section of the Federal Property and Administrative Services Act of 1949 is hereby amended by inserting immediately below "Sec. 605. Effective date." the following: Federal property transferred from RFC. 63 Stat. 377; 64 Stat. 583. 40 USC 471 note.

"TITLE VII—PROPERTY TRANSFERRED FROM THE RECONSTRUCTION FINANCE CORPORATION

"Sec. 701. Declaration of Policy.
"Sec. 702. Definitions.
"Sec. 703. Property transferred by the Reconstruction Finance Corporation.
"Sec. 704. Limitations.
"Sec. 705. Effective date."

ATTACHMENT 3

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

Central Valley Project, California

CONTRACT BETWEEN THE UNITED STATES AND HUMBOLDT COUNTY

1. THIS CONTRACT, made this 19th day of June 1959, in pursuance generally of the act of Congress approved June 17, 1902 (32 Stat. 388), and all acts of Congress amendatory thereof or supplementary thereto, including the act of Congress approved August 12, 1955 (69 Stat. 719), all of which are commonly known and referred to as the Federal reclamation laws, between THE UNITED STATES OF AMERICA, hereinafter referred to as the "United States," represented by the officer executing this contract, and HUMBOLDT COUNTY, a political subdivision of the State of California, duly organized and existing pursuant to the laws thereof, with its principal place of business in the town of Eureka, State of California, hereinafter referred to as the "County";

WITNESSETH, THAT:

EXPLANATORY RECITALS

2. WHEREAS, the Bureau of Reclamation, of the United States Department of the Interior, has been duly authorized to construct and operate the Trinity River Division of the Central

Valley Project, which Division will include Trinity and Lewiston Dams and appurtenant works, for the purpose of the conservation of water resources, which dams are to be located respectively in the County of Trinity, State of California, on the Trinity River, at or about N. 34° 42' E., 2,308 feet from the Southwest corner of Section 15, T. 33 N., R. 8 W., M.D.B.&M., and at or about N. 73° 56' E., 3,777 feet from the Southwest corner of Section 8, T. 33 N., R. 8 W., M.D.B.&M., and which dams will affect flows of the Trinity River; and

3. WHEREAS, the County has appeared as an interested party at the hearing on the 29th day of December 1958, before the State Water Rights Board of the State of California with reference to the issuance of permits on Applications No. 5627, 5628, 15374, 15375, 15376, 16767, 16768, and 17374 for the appropriation of unappropriated water of the Trinity River, which have been filed by the United States; and

4. WHEREAS, Section 8 of the said Reclamation Act of June 17, 1902, provides as follows:

> "That nothing in this act shall be construed as affecting or intended to affect or to in any way interfere with the laws of any State or Territory relating to the control, appropriation, use, or distribution of water used in irrigation, or any vested right acquired thereunder and the Secretary of the Interior, in carrying out the provisions of this act, shall proceed in conformity with such laws, and nothing herein shall in any way affect any right of any State or of the Federal Government or of

any landowner, appropriator, or user of water in, to, or from any interstate stream or the waters thereof: Provided, That the right to the use of water acquired under the provisions of this act shall be appurtenant to the land irrigated and beneficial use shall be the basis, the measure, and the limit of the right."

and

5. WHEREAS, the said act of August 12, 1955, provides in Section 2 thereof in part as follows:

". . . That not less than 50,000 acre-feet shall be released annually from the Trinity Reservoir and made available to Humboldt County and downstream water users."

and

6. WHEREAS, it is desired to establish by terms of this contract operating criteria the observance of which will not impair rights to the reasonable and beneficial use of water originating above Trinity Dam;

NOW, THEREFORE, in consideration of the provisions hereinabove set out and in compliance with the hereinabove quoted provisions of the said acts, it is hereby agreed by and between the parties hereto as follows:

7. The United States shall have the right to divert and store the waters of the Trinity River and its tributaries, and the right to use the water so stored for beneficial use for irrigation and other purposes and for the generation of electric energy in connection with the Central Valley Project.

8. The United States agrees to release sufficient water from Trinity and/or Lewiston Reservoirs into the Trinity River so that not less than an annual quantity of 50,000 acre-feet will be available for the beneficial use of Humboldt County and other downstream users.

9. Authorized representatives of the County shall have access at all reasonable times during office hours to records and computations pertaining to releases from said reservoirs and, upon reasonable request, shall be furnished copies of such records and computations.

EFFECT OF WAIVER OF BREACH

10. The waiver of a breach of any of the provisions of this contract shall not be deemed to be a waiver of any other provisions hereof or of a subsequent breach of such provisions.

RESPONSIBILITY FOR INTERRUPTION

11. In the event the performance, in whole or in part, of the obligations of the respective parties under this contract is hindered, interrupted, or prevented by war, strikes, lockouts, fires, acts of God, or by other similar or different acts of civil or military authorities, or by any cause beyond the control of the respective parties hereto, whether similar to the causes herein specified or not, such obligations of the respective parties under this contract shall be suspended to the extent and for the time that performance thereof is prevented or affected by such hindrance,

interruption, or prevention, but due diligence shall be observed by the respective parties hereto, so far as lies in their power, in performing their respective obligations under this contract.

OFFICIALS NOT TO BENEFIT

12. No Member of or Delegate to Congress or Resident Commissioner shall be admitted to any share or part of this contract or to any benefit that may arise herefrom, but this restriction shall not be construed to extend to this contract if made with a corporation or company for its general benefit.

SUCCESSORS AND ASSIGNS BOUND

13. This contract shall be binding upon and inure to the benefit of the successors and assigns of the respective parties hereto.

IN WITNESS WHEREOF, the parties hereto, by their respective officers thereunto duly authorized, have duly executed these presents on the day and year first hereinabove written.

THE UNITED STATE OF AMERICA

By _____
Regional Director, Region 2
Bureau of Reclamation

ATTEST:

_____
County Clerk of the County of Humboldt

HUMBOLDT COUNTY

By _____
Chairman of the Board of Supervisors

BOARD OF SUPERVISORS, COUNTY OF HUMBOLDT, STATE OF CALIFORNIA

Certified copy of portion of proceedings, Meetings of May 1, 1959

IN THE MATTER OF EXECUTING CONTRACT BETWEEN DEPARTMENT OF THE INTERIOR, BUREAU OF RECLATION, AND THE COUNTY OF HUMBOLDT:

Upon the motion of Supervisor Pettersen, seconded by Supervisor Robertson, Sam B. Merryman, Jr., Chairman of this Board of Supervisors, is hereby authorized and directed to sign a contract between the United States Department of the Interior, Bureau of Reclamat on, and the County of Humboldt regarding the Trinity River Division of the Central Valley Project.

AYES: Supervisors— Lindley, Robertson, Pettersen, Merryman
NOES: Supervisors— None
ABSENT: Supervisors— Bareilles

STATE OF CALIFORNIA, }
County of Humboldt } ss.

I, FRED J. MOORE, JR., County Clerk of the County of Humboldt, State of California, and ex-officio Clerk of the Board of Supervisors of the County of Humboldt, do hereby certify the foregoing to be full, true and correct copies of the original orders made in the above entitled matters by said Board of Supervisors, at a meeting held in Eureka, California, on: May 1, 1959 and as the same now appears of record in my office.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the Seal of said Board of Supervisors, this 4th day of May, 1959

County Clerk and ex-officio Clerk of the Board of Supervisors of the

ATTACHMENT 4

Permit No. 11973

1. The amount of water appropriated shall be limited to the amount which can be beneficially used and shall not exceed 1500 cubic feet per second by direct diversion from January 1 to December 31 of each year; all as more explicitly set forth under Paragraph 2 of the supplement to this approved application. The amount of water directly diverted under this permit and permits issued pursuant to Applications 5628, 15374 and 15375 shall not exceed a total of 3200 cubic feet per second.

2. The maximum amount herein stated may be reduced in the license if investigation so warrants.

3. Construction work shall be completed on or before December 1, 1964.

4. Complete application of the water to the proposed use shall be made on or before December 1, 1990.

5. Progress reports shall be filed promptly by permittee on forms which will be provided annually by the State Water Rights Board until license is issued.

6. All rights and privileges under this permit including method of diversion, method of use and quantity of water diverted are subject to the continuing authority of the State Water Rights Board in accordance with law and in the interest of the public welfare to prevent waste, unreasonable use, unreasonable method of use or unreasonable method of diversion of said water.

7. Permittee shall maintain a daily record of inflow into and outflow from Trinity Reservoir, volumes in storage and water surface elevations. Permittee shall maintain like records with respect to Lewiston Reservoir. Permittee shall provide and maintain such measuring facilities as may be necessary for the formulation of said records. Permittee shall make said records of inflow, outflow, volumes in storage and water surface elevations available to the State Water Rights Board and shall allow authorized representatives of said Board access to its project works and properties for the purpose of securing supplemental information.

8. Permittee shall at all times bypass or release over, around or through Lewiston Dam the following quantities of water down the natural channel of Trinity River for the protection, preservation and enhancement of fish and wildlife from said dam to the mouth of said stream:

L. K. Hill
L. K. Hill
Executive Officer

October 1 through October 31 - 200 cfs

November 1 through November 30 - 250 cfs

December 1 through December 31 - 200 cfs

January 1 through September 30 - 150 cfs

Any water released through said Lewiston Dam for use in the fish hatchery now under construction adjacent thereto shall be considered as partial fulfillment of the above schedule.

9. Permittee shall release sufficient water from Trinity and/or Lewiston Reservoirs into the Trinity River so that not less than an annual quantity of 50,000 acre-feet will be available for the beneficial use of Humboldt County and other downstream users.

10. This permit shall be subject to the prior rights of the county in which the water sought to be appropriated originates to use such water as may be necessary for the development of the county, as provided in Section 10505 of the Water Code of California.

11. The Board retains continuing jurisdiction for the purpose of coordinating terms and conditions with other applications of the United States in furtherance of the Central Valley Project including but not limited to Applications 5625, 5626, 9363, 9364, 9365, 9366, 9367, 9368 and 10588, when acted upon, and for a period of two years thereafter, which period may be extended upon hearing and further order of the Board.

12. Subject to the existence of long-term water delivery contracts between the United States and public agencies and subject to the compliance with the provisions of said contracts by said public agencies, this permit is further conditioned as follows:

(a) The right to the beneficial use of water for irrigation purposes, except where water is distributed to the general public by a private agency in charge of a public use, shall be appurtenant to the land on which said water shall be applied,

L. K. Hill
L. K. Hill
Executive Officer

subject to continued beneficial use and the right to change the point of diversion, place of use, and purpose of use as provided in Chapter 10 of Part 2 of Division 2 of the Water Code of the State of California and further subject to the right to dispose of a temporary surplus.

(b) The right to the beneficial use of water for irrigation purposes shall, consistent with other terms of this permit, continue in perpetuity.

L. K. Hill

L. K. Hill
Executive Officer

ATTACHMENT 5

United States Department of the Interior
OFFICE OF THE SOLICITOR
SACRAMENTO REGION
2800 COTTAGE WAY
ROOM E-2753
SACRAMENTO, CALIFORNIA 95825

Cat.

July 1, 1974

Memorandum

To: Regional Director, Bureau of Reclamation, Sacramento

From: Assistant Regional Solicitor

Subject: Request for opinion re authority of the Secretary of the Interior to alter present functions and accomplishments of Trinity River Division, Central Valley Project

I.

The question has been raised by your office as to whether operations of the Trinity River Division might legally be altered to provide flood control benefits downstream from Trinity and Lewiston Dams.

Any authority of the Secretary of the Interior to release water from Trinity or Lewiston Dams for the purpose of flood control downstream must be found in the statutory grant of power to the Secretary to operate the Trinity River Division. Federal Trade Comm. v. Raladam, 283 U.S. 643. It is my opinion that such authority cannot be found in the purpose of the Trinity River Division Act, nor in its integration into the Central Valley Project either directly through the operational provisions of Section 2 of the Trinity River Division Act, or indirectly through incorporation of the stated purposes of the Central Valley Project Act, and that no such releases of water can lawfully be made.

Section 1 of the Trinity River Division Act, 69 Stat. 719 (P.L. 386, 84th Cong., 1st Sess.), gives the purpose of the Division as ". . . increasing the supply of water available for irrigation and other beneficial uses in the Central Valley of California . . . ." (emphasis supplied). All other provisions of the Act are wholly consistent with this purpose. The Division is authorized "as an addition to and an integral part of the Central Valley Project." (Section 1, 69 Stat. 719) whose purpose is to provide benefits specifically to the Central Valley of California, and the integration is directed to be made in the "fullest, most beneficial, and most economic" (Section 2, 69 Stat. 719) manner possible. Utilizations

of water benefitting the Trinity Basin, on the other hand, are set forth as exceptions to full integration. The release of water into the Trinity River Basin does not further the stated purpose of use in the Central Valley and is, therefore, not authorized by the purpose clause of the Division Act.

Moreover, the specifically authorized downstream releases provided for in Section 2 of the Act do not give any authorization for other generally beneficial releases. The maxim of statutory construction is that express mention of one thing excludes all unmentioned things from the scope of the legislation. The enumeration of exclusions from the operation of a statute indicates that it should apply to all cases not specifically excluded. Herzberg v. Finch, 321 F.Supp. 1367 (S.D.N.Y., 1971).

The lack of Congressional intent to authorize general beneficial releases downstream, especially for flood control, is accurately reflected in the legislative history of the Trinity River Division Act. No significant flood control benefit had been foreseen at any time since the Project was originally conceived. State Water Plan of 1931, Bulletin No. 25 (Engle, Central Valley Project Documents, Vol. I, pp. 282-284, 295-297) (Trinity Dam Project excluded from flood control element of State Water Plan); Finding of Feasibility, House Document No. 53, 83d Cong., 1st Sess. (Engle, Central Valley Project Documents, Vol. I, p. 853) (no allocation of cost to flood control benefit due to the Project); Hearings before the Subcommittee of the Committee on Interior and Insular Affairs, House of Representatives, 84th Cong., 1st Sess., on H.R. 4663, pp. 51-52 (Testimony that any flood control benefits would be so minor that they could be ignored); Report of House Committee on Interior and Insular Affairs, House Report No. 602, 84th Cong., 1st Sess., p. 5 (no recognition of flood control benefits, though other nonreimbursable costs are cited); Report of Senate Committee on Interior and Insular Affairs, Senate Report No. 1154, 84th Cong., 1st Sess., p. 6 (no recognition of flood control benefits, though other nonreimbursable costs are cited). In the committee reports and in debate the only concern expressed for downstream interests was that they receive a minimum adequate supply of water for their needs, not that they be protected from any overabundance. Report of House Committee on Interior and Insular Affairs, House Report No. 602, 84th Cong., 1st Sess., pp. 5, 9; Report of Senate Committee on Interior and Insular Affairs, Senate Report No. 1154, 84th Cong., 1st Sess., p. 8; 101 Cong. Rec. 8880-8881, remarks of Representative Scudder (Humboldt-Del Norte); 101 Cong. Rec. 12315, remarks of Senator Kuchel (California). Therefore, any omission of mention of flood control releases or other releases beneficial to downstream interests from the downstream releases authorized by the Act would appear to be entirely conscious and intentional.

Section 2 of the Act provides for the manner in which the operation of the Trinity River Division is integrated into the Central Valley Project. It directs that "the operation of the Trinity River Division shall be integrated and coordinated . . . with the other features of the Central Valley Project . . . in such manner as will effectuate the fullest, most beneficial, and most economic utilization of the water resources hereby made available." Section 2, 69 Stat. 719 (P.L. 386, 84th Cong., 1st Sess.) The words "fullest, most beneficial, and most economic utilization" describe the manner of integration with the Central Valley Project, not the general utilization of the impounded water. The directive does not authorize any use or any manner of use of water which is not or cannot be integrated into the Central Valley Project, hence no authorization for flood control in the Trinity Valley.

Even if the purposes of the Central Valley Project as a whole are incorporated into the Trinity River Division authorization by the language of integration, the flood control purposes set forth in the Central Valley Project Act, 50 Stat. 844 (P.L. 392, 75th Cong., 1st Sess.) still would not authorize flood control in the Trinity River Basin. The legislative history of the Central Valley Project indicates clearly that the flood conditions meant to be corrected by the Project were those occurring in the Sacramento and San Joaquin River Basins, not flood conditions existing generally in the State. This intention is reflected in the total lack of discussion of flood problems in other basins, the detailed discussion of the causes and possible solutions to the problem of floods in the Central Valley, and the fact that the Trinity Dam Project was never seen to contribute any flood control benefit at all to the Project. State Water Plan of 1931, Bulletin No. 25 (Engle, Central Valley Project Documents, Vol. I, pp. 281-284, 294-297); Finding of Feasibility, House Doc. No. 53, 83d Cong., 1st Sess. (Engle, Central Valley Project Documents, Vol. I, p. 853).

Therefore, since no statutory source of power can be found for the Secretary to alter operation of the Division for flood control or other purposes generally beneficial to downstream interests, it is my conclusion that the Secretary has no authority to make such releases of water.

II.

Your office has also requested interpretation of the last proviso of Section 2 of the Act as it relates to releases authorized for

fish preservation. The proviso reads:

> ". . . That not less than 50,000 acre-feet shall be released annually from the Trinity Reservoir and made available to Humboldt County and downstream water users." Section 2, 69 Stat. (P.L. 386, 84th Cong., 1st Sess.)

The water released for fishery purposes is not consumed, but remains available later for use by other downstream users. In addition, the term "downstream water user" is not specific, but appears to refer to all downstream users generally, including the fishery.

Therefore, it is my opinion that since the purpose of the Division is to provide as much water as possible to the Central Valley, Section 1, 69 Stat. 719 (P.L. 386, 84th Cong., 1st Sess.) the 50,000 acre-feet referred to in the last proviso of Section 2 should be construed to include the water necessary to maintain minimum specified flows for fish preservation and propagation rather than being considered to be in addition to such flows.

Rita Singer

Rita Singer
Assistant Regional Solicitor
Sacramento Region

JGoldsmith:RSinger:br

ATTACHMENT 6

SACRAMENTO REGION
2800 COTTAGE WAY
ROOM E-2753
SACRAMENTO, CALIFORNIA 95825

WRLS INTERPRETATION OF PL 84-386 REF 50,000 AF SET ASIDE FOR DOWN STREAM USERS.

JAN 21 1977

Memorandum

To: Field Supervisor, Division of Ecological Services
USFWS, Sac.

From: Regional Solicitor

Subject: Trinity River Division, CVP - Reconsideration of July 1, 1974 Memorandum to Regional Director, Bureau of Reclamation, Concerning Section 2 of the Trinity River Division Act

Pursuant to your December 13, 1976 request, I have reconsidered this office's previous interpretation of Section 2 of the Trinity River Division Act (69 Stat. 719; P.L. 84-386) as set forth in the memorandum identified above (copy attached). That Act clearly states that the Trinity River Division was intended to serve multiple purposes including (1) enhancement of fish and wildlife resources by maintaining the flow of the Trinity River below the applicable point of diversion (i.e. Clear Creek Tunnel) at a minimum of 150 c.f.s. and by maintaining the flow of Clear Creek below the applicable point of diversion (i.e. Spring Creek Tunnel) at a minimum of 15 c.f.s.; and (2) providing a water supply to Trinity River users downstream from Trinity Reservoir by making a minimum annual release from that Reservoir of 50,000 acre-feet. As stated in our July 1, 1974 memorandum to the Regional Director, these are not necessarily conflicting purposes. Rather, releases from Trinity Reservoir for downstream use coincides with the requirement to maintain flows downstream from the diversion points set forth above. It is possible, however, that the flow of the Trinity River will drop below the 150 c.f.s. minimum at points downstream from diversions made by downstream users, thereby causing harm to fish resources. However, should that reduction in the flow of the Trinity River occur, the Act grants the Secretary of the Interior broad authority to increase the size of the releases

from the Trinity facilities should such additional releases be deemed necessary in order to serve fish and wildlife enhancement purposes. (See our December 6, 1973 memorandum to the Regional Director concerning this issue, a copy of which is attached.)

In summary, we cannot find specific terminology in the Act itself or any reference in the legislative history relating to the Trinity River Division Act which supports the premise stated in your memorandum of December 13, 1976 that the Act does or was intended to provide separate and distinct "blocks of water" for fish preservation and propagation purposes and we cannot, therefore, support your interpretation. We do, however, find the authority mentioned hereinabove whereby the Secretary may make such additional releases for this purpose as he deems necessary.

In order to clarify treatment of this issue in our July 1, 1974 memorandum to the Regional Director, it is hereby amended by addition of the following at the end of the last paragraph on page 4 of that memorandum:

> ; however, it should be noted that the proviso quoted above does not limit downstream use to 50,000 acre-feet annually. Rather, as pointed out in our memorandum of December 6, 1973, the Secretary has discretionary authority to release additional water for the purpose of preserving or propagating fish resources.

Charles R. Renda
Regional Solicitor
Sacramento Region

Enclosures - 2

cc: Regional Director, Bureau of Reclamation (w/o encl.)

JETurner/cb

ATTACHMENT 7

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF THE SOLICITOR
WASHINGTON, D.C. 20240

DEC 7 1979

Memorandum

To: Assistant Secretary, Land and Water Resources

From: Solicitor

Subject: Proposed Contract with Grasslands Water District

A question has been raised whether the Department may amend its contract with the Grasslands Water District in the Central Valley Project (CVP) to provide that, in critically dry years, the District be accorded equal priority with agricultural contractors. The District is usually delivered 50,000 acre-feet of water primarily for waterfowl management, under the terms of the Act of August 27, 1954, Pub. L. No. 83-674, 68 Stat. 879, 16 U.S.C. § 695d, et seq., which was recently amended by the Fish and Wildlife Improvement Act of 1978, Pub. L. No. 95-616, 92 Stat. 3115.

The question is whether equal priority is consistent with the applicable CVP authorizations which establish general categories of priorities for CVP operations, as follows: (1) river regulation, improvement of navigation, and flood control; (2) irrigation and "domestic uses;" (3) power; and (4) fish and wildlife and "other beneficial uses."1/

The 1954 Act provides that the "entire Central Valley Project" theretofore authorized and reauthorized, "is hereby reauthorized and declared to be for the purposes set forth in said acts, and also for the use of the waters thereof for fish and wildlife purposes, subject to such priorities as are applicable [under previous authorizations]." One of my predecessors held that the express reference to the use of waters for fish and wildlife in the 1954 Act is "simply a more definitive specification" of "other beneficial uses" which were an authorized project purpose (and lowest priority) ever since the 1937 reauthorization of the project. See 50 Stat. 844, 850; Opinion by Acting Solicitor Armstrong, "Allocations for fish and wildlife conservation on Central Valley Project," Nov. 15, 1954, p. 3. The Solicitor went on to point out: "The condition in [section 1 of] Public Law 674 that the use

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1/ See Pub. L. No. 75-392, 50 Stat. 844 (Aug. 26, 1937).

of such waters for wildlife conservation purposes shall be subject to such priorities as are applicable under prior authorizations also is simply a specific recognition by the Congress of the existence of the priorities originally specified."

I agree with and reaffirm this opinion. It does not, however, directly address the question here presented. For the same reason, the provisions of section 6 of the 1954 Act, which authorized contracts to supply CVP water to certain wildlife areas on an "if and when available" basis, begs the question presented here of how much water can be made "available" by the Secretary under general CVP priorities. As noted above, the 1954 Act was amended in 1978, but in a way not relevant here.

A narrow, technical reading of the CVP statutory priorities might suggest that in every situation throughout the CVP deficiencies shared equally by irrigation and fish and wildlife are unlawful; in other words, to require that a higher priority must be totally satisfied before a lower one can be met. I am unaware of any legislative history of CVP statutory authorities which supports such a theory.

The Secretary has never applied the priorities or operated the project that way. Rather, the allocation of relative shortages or benefits among priorities in any specific situation has been regarded as a discretionary matter within the Secretary's judgment.

For example, this kind of narrow interpretation — placing total emphasis on flood control (the highest priority) — would reduce water storage in reservoirs for irrigation. Maximizing flood protection would dictate that reservoirs be kept nearly empty certain times of the year in the event massive precipitation and runoff occurred. Operation that way would limit storage of water for irrigation and other uses later in the year. But reservoirs are not operated to wring every conceivable bit of flood storage capability out of the storage space; instead, they are operated according to Corps of Engineers criteria which strike a reasonable balance between the need for stored water and the remote possibility of huge storms.

To give a specific example, the Folsom Reservoir on the American River above Sacramento is not sufficient, in the judgment of the Corps of Engineers and the Bureau, to protect Sacramento from the worst conceivable flood (the so-called "standard project flood"). Additional flood control is one justification for the proposed Auburn dam, authorized to be built upstream from Folsom. Yet Folsom reservoir is not, in advance of completion of the Auburn dam, kept at its lowest possible storage level in the spring even though additional protection from

an unexpected, and highly improbable, standard project flood (estimated to occur once every thousand years) might be obtained if it were.2/

To take another example, many CVP contracts provide that municipal and industrial uses are cut in critically dry years after irrigation is cut, even though irrigation and "domestic uses" are of equal statutory priority. To take a third, more immediate example, in the 1976-77 drought Grasslands was delivered water on an equal priority with municipal and industrial users, and ahead of irrigators, because of very serious threat to migratory waterfowl.

Operating a huge, multi-purpose project like the CVP is a complicated undertaking, which precludes applying the order of priorities in any individual situation in an absolute, inflexible way. Rather, the Bureau has strived to coordinate disparate functions in a way which serves them all in the project as a whole, while maintaining a balance which fairly reflects the authorized priorities of purpose. The fact that Congress has typically provided, in adding new features to the project, that the new features shall be integrated into the overall project reinforces this view that it is the project as a whole which supplies the context for applying the statutory priorities.3/

On occasion the Congress has specifically limited the Secretary's discretion in meeting the general CVP priorities. For example, in authorizing the Trinity River Division of the CVP in 1955, Congress specifically provided that in-basin flows (in excess of a statutorily prescribed minimum) determined by the Secretary to be necessary to meet in-basin needs take precedence over needs to be served by out-of-basin diversion. See Pub. L. No. 84-386, §2. In that case, Congress'

2/ While Congress specifically provided that the Auburn Project be operated for flood control in accordance with Corps of Engineers criteria, 43 U.S.C. § 616bbb, Congress made no such direction in the Folsom authorization. See 58 Stat. 900.

3/ See, e.g., Pub. L. No. 84-386, 69 Stat. 719 (Aug. 12, 1955) (Trinity River Division authorization), § 2, 43 U.S.C. § 616bbb; Pub. L. No. 89-161, 79 Stat. 615 (Sept. 2, 1965) (Auburn-Folsom South Unit authorization), § 2. The Auburn-Folsom South provision is typical, providing in pertinent part that the unit be "integrated and coordinated, from both a financial and an operational standpoint, with the operation of other features of the Central Valley project . . . in such manner as will effectuate the fullest, most beneficial, and most economic utilization of the water resources hereby made available." 43 U.S.C. § 616bbb.

usual direction that the Trinity River Division be integrated into the overall CVP, set forth at the beginning of section 2, is expressly modified by and made subject to the provisos that follow giving specific direction to the Secretary regarding in-basin needs.

Applying the general statutory priorities in the context of the project as a whole accords both with past practice and Congress' intent. The priorities have meaning in the sense that it would be improper for the Secretary to devote most CVP-stored water primarily to power production or fish and wildlife protection while shorting other purposes of a higher priority. The record shows that the vast bulk of the CVP yield of nearly 8 million acre-feet is devoted to irrigation and other uses of a higher statutory plane than fish and wildlife protection. Thus the statutory priorities are fairly being met, even if they have not slavishly dictated every individual decision in the thousands of operating judgments that must be made in a project this large and complex.

In short, the congressional priorities must not be applied in the context of a single contract or a single small facet of an enormous project, but from the perspective of project operation as a whole. For this reason, it is plain that the Grasslands contract is consistent with the statutory priorities.

(sgd) Leo Krulitz

SOLICITOR

February 1, 2018

Attn: Revision to Coordinated Long-Term Operations of the CVP, SWP and Related Facilities Scoping Comments

To: Katrina Harrison
USBR Project Coordinator
(916) 414-2425

5. Opportunities for increased hatchery release volume and new hatchery locations throughout the watershed.
6. Invasive species removal and increased take limits in support of salmonid recover and out migration, especially concerning striped bass populations north of Colusa.
7. Increased efficiency of Delta outflows and pumping operations in the South Delta.
8. Opportunities associated with supplying water to the Salton Sea to avoid air quality impacts.
9. Opportunities to limit the transfer of CVP and or SWp water from agricultural and municipal uses for energy extraction like hydraulic fracturing. No water meant to be used for agriculture or the needs of cities should be used for hydraulic fracturing or other energy exploration. All water in the State of California must be used in a a reasonable and beneficial way.
10. Opportunities associated with bottom-up river ecology improvements and ecosystem based needs of our aquatic systems.
11. Opportunities associated with Delta habitat improvements and land purchases.
12. Opportunities to investigate and establish ecologically based minimum flow schedules for the Sacramento and San Joaquin Rivers in accordance with the needs of species, water quality and navigation requirements.
13. Opportunities to calculate and re-establish contracted water rights and the real supply available during wet and dry years to meet contracted demands.
14. Opportunities to prioritize water deliveries based on crop type, soil portfolio and groundwater conditions.
15. Opportunities to prioritize water deliveries based on results from the Sustainable Groundwater Management Act (SGMA) planning process.
16. Opportunities to assure that all management is in line with the projects and goals of the State of California.

We sincerely hope that you will include these areas of investigation in your scoping process and we look forward to working with you throughout this process.

Sincerely,

Lucas RossMerz
Executive Director

Stephan C. Volker
Alexis E. Krieg
Stephanie L. Clarke
Jamey M.B. Volker (Of Counsel)

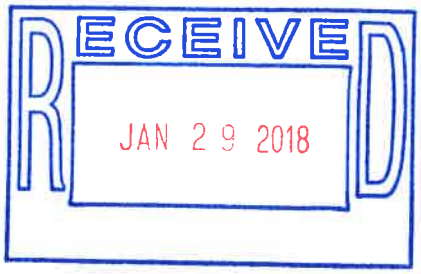
Law Offices of
Stephan C. Volker
1633 University Avenue
Berkeley, California 94703
Tel: (510) 496-0600 ❖ Fax: (510) 845-1255
svolker@volkerlaw.com

11.222.01

January 25, 2018

VIA EMAIL AND US MAIL

Katrina Harrison, Project Manager
Bureau of Reclamation, Bay Delta Office
801 I Street, Suite 140
Sacramento, CA 95814-2536
kharrison@usbr.gov



Re: Notice of Intent to Prepare a Draft Environmental Impact Statement for Revisions to the Coordinated Long-Term Operation of the Central Valley Project and State Water Project, and Related Facilities

Ms. Harrison:

I. INTRODUCTION

On behalf of the North Coast Rivers Alliance, Pacific Coast Federation of Fishermen's Associations, the Institute for Fisheries Resources, and the San Francisco Crab Boat Owners Association, we submit the following comments objecting to the Bureau of Reclamation's ("Reclamation's") Notice of Intent to Prepare a Draft Environmental Impact Statement for Revisions to the Coordinated Long-Term Operation of the Central Valley Project and State Water Project, and Related Facilities ("EIS").

II. RECLAMATION'S PROPOSAL TO SQUEEZE MORE WATER FROM THE DELTA'S COLLAPSING ECOSYSTEM IS IRRESPONSIBLE.

Reclamation's proposal to squeeze more water from the Delta's collapsing ecosystem is irresponsible. Reclamation knows better. Your August 2016 request for reconsultation with the National Marine Fisheries Service ("NMFS") confirmed what the scientific community has been telling us for 25 years: that to prevent extinction of the dwindling population of endangered Sacramento River winter-run Chinook salmon, Reclamation must undertake fundamental changes to the long term operations of the Central Valley Project ("CVP"), State Water Project ("SWP"), and related facilities. Likewise, Reclamation's August 2016 request for reconsultation with the Fish and Wildlife Service ("FWS") acknowledged recent data demonstrating that Delta smelt populations have plunged to new lows. These indisputable facts present compelling

grounds for altering system-wide operating criteria for the CVP and SWP to *reduce* exports, and thereby restore degraded habitat.

Were Reclamation addressing additional *safeguards* to prevent species from extinction, its proposal to alter the long-term operations of the CVP and SWP would be entirely appropriate. But Reclamation's intent is just the opposite. Reclamation states that "[t]he need for the action is to increase operational flexibility" and that "[t]he purpose of the action . . . is to continue the operation of the CVP in a coordinated manner with the SWP, for authorized purposes, in a manner that enables Reclamation and California Department of Water Resources to ***maximize water deliveries*** and optimize marketable power generation consistent with applicable laws, contractual obligations, and agreements; and to augment operational flexibility by addressing the ***status of listed species***." Notice of Intent, 82 Fed.Reg. 6179 (Dec. 29, 2017), emphasis added. Thus, instead of reducing deliveries to save imperiled species from extinction, Reclamation is proposing to drive the final nail in their coffin by ignoring or masking their endangered status. By cynically planning an end-around the listed status of these species Reclamation seeks to remove the final barrier to its increased delivery of water to water contractors whose insatiable thirst is diametrically at odds with the survival of these listed species.

Reclamation's continued mismanagement of the CVP, aided and abetted by repeated petitions to relax water quality standards, routine temperature exceedances and other water quality violations, has consistently prioritized water deliveries over survival of the listed species that need increased instream flows. This has resulted in further water quality degradations and sharp population declines in both the listed Delta smelt and the San Francisco Bay-Delta Distinct Population Segment ["DPS"] of longfin smelt[1], and anadromous species, including Sacramento River winter-run, Central Valley spring-run Chinook, California Central Valley steelhead, and the southern DPS green sturgeon. This mismanagement also risks the viability of the Central Valley fall and late fall-run Chinook – species of concern under the Endangered Species Act ("ESA").

III. RECLAMATION'S STATEMENT OF PURPOSE AND NEED VIOLATES NEPA.

Reclamation's statement of the purpose and need for its action violates NEPA because it defines its objectives in unreasonably narrow terms. *National Parks & Conservation Ass'n v. Bureau of Land Mgmt.*, 606 F.3d 1058, 1070-1072 (9th Cir. 2010). Its determination that the action's purpose is to enable long-term operation of the CVP and SWP to "maximize water

[1] FWS has determined that longfin smelt's listing is warranted but precluded by higher priority species.

deliveries and optimize marketable power generation" is too narrow. It is contrary both to the CVPIA's mandate that Reclamation "protect, restore, and enhance fish, wildlife, and associated habitats," and the clarion call of the Biological Opinions governing the CVP that Reclamation must restore water flows essential to recovery of listed species. Reclamation's statement of purpose and need improperly prioritizes water deliveries over species recovery and therefore violates NEPA, the CVPIA and the ESA.

IV. RECLAMATION MUST STUDY A REASONABLE RANGE OF ALTERNATIVES, INCLUDING AN ALTERNATIVE THAT REDUCES WATER DELIVERIES.

Reclamation's proposed narrow statement of purpose and need is contrary to law because it improperly excludes consideration of an alternative that reduces – instead of maximizes – water deliveries. A reduced delivery alternative is necessary to prevent the otherwise imminent extinction of many listed species. Under the ESA, Reclamation must comply with the mandates laid out by NMFS and FWS in their Biological Opinions to protect imperiled species as necessary to avoid jeopardy. Under NEPA, Reclamation must consider alternatives that exceed those protections to enable recovery of these species.

V. CONCLUSION

Reclamation's proposal to extract yet more water from a dying Delta is irresponsible resource management. Reclamation's attempt to limit its Draft EIS by considering only options that increase diversions and further degrade the Delta's water quality violates NEPA, the CVPIA and the ESA. At a time when the Delta's imperiled fisheries are hanging by a thread, any plan to maximize deliveries irresponsibly jeopardizes their survival.

Respectfully submitted,

Stephan C. Volker
Attorney for North Coast Rivers Alliance, Pacific Coast Federation of Fishermen's Associations, Institute for Fisheries Resources, and the San Francisco Crab Boat Owners Association

SCV:taf

Harrison, Katrina <kharrison@usbr.gov>

A NATIONAL TREASURE HELD HOSTAGE

Lawrence Easterling <leaster@wildblue.net> Sat, Jan 27, 2018 at 7:26 PM
To: kharrison@usbr.gov

I have farmed pistachios in California's San Joaquin Valley since 1968. I've nurtured over 300,000 pistachio trees since then and now I find their demise eminent UNLESS our new administration in Washington comes to our aid. Our problem is the taking of our rightful source of water from us.. Our dilemma is outlined in detail in the enclosure attachment to this email. Should you wish to contact me my telephone number is (831) 768-9972.

Thank you,
Larry Easterling

2 attachments

1-27-2018 CALIFORNIA WATER MANAGEMENT DILEMMA.docx
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CALIFORNIA WATER MANAGEMENT DILEMMA
By: Lawrence H. Easterling, Jr.

We are witnessing the dismantling of the California water conveyance system that supplies fresh water for 25 million California residents and four million acres of prime farmland in the San Joaquin Valley.

Our water resources are being "Withheld" from the very people of this state who have shown what "Free Enterprise" can do not only for the well-being of all in California, but the entire nation. Unfortunately, several major environmental groups and complacent politicians are killing the freedoms that have been the bulwark of success in California. Let me explain.

Water is our most valuable renewable resource and Mother Nature gives it to California in copious amounts during most years. What we do with that water is critical to the future of the golden state.

On average 200.0 million acre-feet of water a year blankets our state. One acre-foot is equal to 325,851 gallons of water. Of that precipitation 75% originates north of the Sacramento River. The other 25% falls in central and southern California.

The water that is not manageable by us is 120.0 million acre-feet. Some of it evaporates, but most of it settles into the ground, fills lakes, and what remains heads for the Pacific Ocean. The balance of the water is called "directable" surface water (80,000,000 acre-feet) and this is where we have the opportunity to put it to its best and proper use.

By 2005, according to the Department of Water Resources, 48% of that directable water went to the environment, 41% to agriculture and the remaining 11% to rural areas. This balance of such a precious resource seemed at the time to be equitable to all parties, thanks to the ingenuity of our forefathers in the 20th century. Their foresight gave us a water conveyance system second to none in the entire world.

California's water conveyance system had five major objectives:

1. To provide reliable water deliveries to 25 million people to avoid water shortages that would otherwise exist and continually plague two-thirds of the California population.

2. To support four million acres in central California of what the National Geographic Magazine proclaimed to be the most productive farmland in the world.

3. To reinforce our natural environment.

4. To recharge our ground water supplies.

5. Flood control.

Some distinctions should be made here as to how much directable water we are actually concerned about. At full capacity the two California water conveyance systems, the State Water Project (SWP) and the federal Central Valley Project (CVP), deliver water from northern California to southern and central California. Each system, the CVP and the SWP, has the capacity to each deliver 4.0 million acre-feet water each year. However, this water delivery capacity has never been tested. The record shows that in the years prior to 2005, the average total deliveries COMBINED for both projects was 5.4 million acre-feet per year. The ultimate users of this water went to agriculture (60%) and the rural population (40%).

The volume of water available, on average, from the Sacramento River, including the San Joaquin River, is 30.3 million acre-feet. It is from this volume of water that the 5.4 million acre-feet is sent south.

In 2007 several environmental organizations led by Natural Resources Defense Council took the Department of Water Resources to court to compel the court to enforce the Endangered Species Act (ESA). The court's ruling to enforce this law declared that the giant water export pumps that raise the water from the delta into the California Aqueduct were cut back because it was suspect that the pumps were killing too many delta smelt, an endangered species.

Even in flood years restricted pumping has reduced the water flow to a fraction of the contracted normal flow. Henceforth, since 2007 our water deliveries to urban and agricultural areas have been severely compromised.

The enforcement of these laws are now negating the five major functions of the giant California water conveyance system outlined with the possible exception of the natural environment. Now mind you, this water comes from northern California where 75% of the rain in California falls averaging over 50 inches a year. Central and southern California "average" less than 15 inches a year.

During the eight years from 2007 through 2017 average deliveries to farms have been reduced to one acre-foot per year. Most agricultural crops require 3 ½ acre-feet of water per year. Today, without recourse, these farms are left with barely enough water to keep their plants alive. As for the hardship visited upon 25 million consumers, the Metropolitan Water District (MWD) in southern California is a good example. The MWD services 19 million accounts and prior to 2007 was receiving 40% of its water from the SWP. That water source has now only been able to supply approximately 10% of their needs.

Consequently, due to seeking other sources for replacement of their water losses, rate increases to their customers over the years 2007 to 2015 doubled. On top of all these setbacks Mother Nature now has shown us her own drought versus our manufactured water crisis. All the way through this synthetic drought, the average rate of precipitation at the source of our water in northern California has been 45 inches each year.

In order to survive, those of us who must have an adequate supply of water to sustain us have been forced to pump more ground water and/or purchase water from farmers, who idle farmland and transfer their water to areas severely threatened with water shortages. For some of those lucky enough to find water for sale, the cost of water has become a severe financial burden. Where farms in the central valley were, prior to 2007, paying just under $100 per acre-foot, today if a willing seller can be found, the price can range anywhere from $1,000 to over $2,000 per acre-foot. In many such cases, water costs can exceed all other cultural costs combined. Likewise, the aquifer has dropped every year since 2007 due to frantic attempts by farmers to supplement the critical loss of surface water.

WHAT MUST BE DONE:

1. The effects of water deprivation over an eleven-year period by a man-made drought capped by one of nature's real droughts, is wreaking havoc with the nation's food supply. The state of California is now in the grips of the Law of Diminishing Returns and is incapable of averting a disaster due to environmental regulations. Consequently, this country's **NATIONAL SECURITY** is being compromised. **CONGRESS MUST ACT NOW** before further damage is done. These actions need to be taken:

   A. The Endangered Species Act (ESA) must be excluded from jurisdiction over the pumps, which move northern water to central and southern California. This measure should be permanent and under the management of the Department of Water Resources (DWR). The pumps are presently operating at about 15% of their capacity.

   B, The Endangered Species Act needs to be revised in order to "protect all species", **<u>including</u>** **<u>humans</u>**, from collateral damage due to methods employed to save one species that results in severe damage to other species. This would be implemented through a biological opinion that would INCLUDE a list of all species that would be adversely affected by the METHOD employed to protect one specific species. This measure would make right just one of the irregularities in this flawed law, which attracts litigation like bees to honey. The law does not need to be struck down, simply rewritten to safeguard "all" species, including human beings.

   C. California's magnificent water distribution and conveyance system has no peer in this world. It is a remarkable feat of engineering admired by those

who have come from far and near to marvel at its accomplishment. Yet, by environmental fiat it has been reduced to a token of its capabilities. "Directable" water in California originally ceded one-third of its 80,000,000 acre-feet to the environment. Today, according to the DWR the environment now takes, not one-third, but 50% of the directable water leaving the rest to urban and farming communities. This is not what the original framers envisioned, but under the DWR it's control has been gradually diluted by federal agencies such as the Environmental Protection Agency (EPA), and one of its extensions known as the STATE WATER RESOURCES CONTROL BOARD (SWRCB). THIS FIVE PERSON BOARD IS STAFFED WITH ENVIRONMENTALISTS, such as their chairwoman, Felicia Marcos, a Governor Brown appointee, whose professional background includes eight years with the EPA and five years with the radical National Resources Defense Council. The influence of these federal agencies, backed by political power broker's lobbyists, has tilted the water distribution of surface water away from its original intended users. In essence, the environmentalists now control California's surface water, and now with the passage of the recent 7.5 billion dollar water bill, they will control our ground water as well. If the water agencies do not perform with the desired results, the bottom-line is that final control will go to the SWRCB.

The ship of state now needs to be righted. It is drifting far off course. First of all, the EPA must be brought to heel. For a federal agency it exerts far too much power. And, in so doing has completely distorted California's surface water delivery system. Next, the SWRCB must either be eliminated with FULL CONTROL being restored to the Department of Water Resources, or completely reorganized as an ADVISORY BOARD to the DWR where ALL recipients of the surface water system be represented. A ten-board membership might be in order with a director and the nine remaining seats to be divided in three equal parts by experienced personnel in agriculture, city water management, and the environment, i.e. three persons from each classification and residents of northern, central and southern California.

2. Finally, one in every ten workers in California are either directly, or indirectly, dependent upon the health of our vast agricultural industry. It is time to step forward and reveal with facts and figures the house of cards that water management in this state has become. Likewise, those 25 million people in southern California, such as the MWD's 19 million users who once got 40% of their water from the giant conveyance system, deserve to get that water back.

   With years of a man-made drought compounded by a natural drought in now the eleventh year, there is ample information available through various farm county records to quantify in lost dollars the cumulative affect of, (1) lost

production due to forced fallowing of land, (2) water costs that are now ten times what they were prior to 2007, and (3) the heavy burden economically of converting hard working farm labor to the welfare roles where some Central Valley towns are now approaching 50% unemployment. Combined these costs will be in the billions of dollars, bloating further our California deficit.

The goal of society has always been to improve the human condition and for one generation to leave a better world for the next. The visionaries of the 20th century got it right. They delivered in spades to us, the beneficiaries, a modern miracle. It is a water conveyance system like none other to serve all the people of California. Where are those visionaries now? Rather than embrace the gifts of a reliable source of precious water, they proceed to dismantle the entire system. It is because of the system that California feeds the nation. This is not just a California crisis. It is one that will affect the entire nation. Look upon it as a national security threat and demand that our leaders do what is right for the vast majority of this country's people.

Essay by: Lawrence H. Easterling, Jr.
Administrator, Kettleman Pistachio Growers
Director, American Pistachio Growers (retired)

Done-Again Farms, Inc.

January 31, 2018

Katrina Harrison
Project Manager
Bureau of Reclamation
Bay-Delta Office
801 C Street, Suite 140
Sacramento, CA 95814-2536

Dear Ms. Harrison,

I am responding to the public notice of intent to prepare a draft environmental impact statement published in the Federal Register on December 29, 2017, page 61789. I submit the following additional comments on the proposed Programmatic Environmental Impact Statement to evaluate alternatives to restore, at least in part, the water supply for all authorized purposes of the Central Valley Project (CVP).

1. In several recent years many of us in agriculture have received zero allocations of water from the CVP but remain obliged to meet contractual obligations to pay operation, maintenance, and capital costs of the Central Valley Project. The EIS alternatives should address how CVP operations, maintenance, construction and financing costs will be shared by all users including agriculture, fisheries, urban and power generation.
2. Based on the quantification of water needs by all users, the alternatives should address how conflicting objectives and needs for water will be resolved among all the various agencies involved in managing the Project under the regulations, including the State Water Project (SWP), Bureau of Reclamation, and local water and irrigation districts.

Thank you for addressing these concerns in the Draft EIS. I would appreciate your letting me know that you have received this comment letter. I would also appreciate your advice about how I can track progress in preparing the referenced EIS.

Please notify me when the Draft EIS is available for public review and provide me with an electronic copy of the draft document. My email address is doneagainfarms@me.com.

Sincerely Yours,

John Monroe
CEO, Done-Again Farms, Arbuckle, California

Nelson, Benjamin <bcnelson@usbr .gov>

Comments to Notice of Intent to Prepare a Draft EIS Federal Register Page 61789

John Monroe <doneagainfarms@me.com> Tue, Jan 30, 2018 at 12:00 PM
To: kharrison@usbr.gov
Cc: bcnelson@usbr.gov

Dear Ms. Harrison,

Attached are comments to the notice of intent to prepare a Draft Environmental Impact Statement, Revisions to the Coordinated Long-Term Operation of the Rental Valley Project and State Water Project, and Related Facilities, noticed in the Federal Register Page 61789.

I would appreciate your acknowledgement that you have received these comments by the February 1, 2018 deadline. Furthermore, I would very much appreciate being notified of the progress of the draft EIS as it develops.

Finally, I am available by email and/or cell phone to answer any questions you may have about the comments in the attached document.

Sincerely Yours,

John Monroe
650-387-5730
doneagainfarms@me.com

2 attachments

180130 CVP EIS Comments FINAL.pdf
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Done-Again Farms, Inc.

January 30, 2018

Katrina Harrison
Project Manager
Bureau of Reclamation
Bay-Delta Office
801 C Street, Suite 140
Sacramento, CA 95814-2536

Dear Ms. Harrison,

I am responding to the public notice of intent to prepare a draft environmental impact statement, published in the Federal Register on December 29, 2017, page 61789. I submit the following comments on the proposed Programmatic Environmental Impact Statement to evaluate alternatives to restore, at least in part, the water supply for all authorized purposes of the Central Valley Project (CVP).

The Notice identifies four alternatives to be evaluated: Operations in coordination with new or proposed facilities to increase water supply deliveries and marketable power generation; Modified Operations of the CVP and SWP with and without new or proposed facilities including possible requests to modify environmental and regulatory requirements; Habitat restoration and ecosystem improvement projects intended to increase fish populations factored into the regulatory process; and Modification to existing state and federal facilities to reduce impacts to listed species. It is unclear whether agriculture and its water needs are addressed specifically in any of these alternatives. There should either be a fifth alternative that looks specifically at the current and optimal future water needs of agriculture, or specific requirements to address agricultural needs as an element of each listed alternative. Based on a scenario that provides adequate water to agriculture, the impacts on each water use (agriculture, urban users, fishery, and power) should be identified and quantified so the impacts to the agriculture industry are clear. The Cumulative analysis should quantify the impact of dry and wet years as well as additional facilities necessary to achieve a balanced water supply for all users in the future.

The Programmatic EIS description in the public notice does not specifically address the water needs of agriculture. The following issues should be evaluated in the Draft EIS in order to determine the impact of the Program changes on agriculture.

a. The current and projected water demand for each use (agriculture, urban users, fishery, and power) should be quantified.
b. The analysis should address provision of an adequate supply of water to agricultural users in the Sacramento and San Joaquin Valleys in order to continue current production and allow for reasonable expansion of cultivated land and crops.

i. The total need for water (current and projected for the future) for agricultural users should be documented. Then the appropriate balance of allocation of water between the agricultural users in the two valleys should be addressed. The assumptions used to define 'balance' should be clear.
ii. The use of groundwater pumping as a source of water should be addressed.
iii. The use of water for groundwater recharge should be addressed.

c. In recent drought years, surface water allocations to the West Side of the San Joaquin Valley were greatly reduced or eliminated, resulting in increased groundwater pumping from the West Side that pulled groundwater away from the East Side, throwing the ground water supply out of balance and causing significant subsidence to occur throughout the valley.
    i. The Program should evaluate the impact of each alternative's water allocation criteria on demand for ground water from agriculture and other users.
    ii. The analysis for each alternative should address the impact of Coordinated Long Term Operations criteria on groundwater pumping and related subsidence in the Central Valley.
d. In the cumulative analysis of water demand in the project area, the impact of water availability and variability of supply over time should be evaluated. The impact of the regulation of water on loss of prime agricultural land (Class A and B) should be quantified. Further, the impact of the availability of water in the quantities identified on the expansion of agricultural land use in the Sacramento and San Joaquin Valleys should be determined. The impact of the regulation of surface water supply on groundwater pumping should be addressed.
e. The proposed Program's impact on farm labor should be determined, as well as the impact on population growth in the two valleys and in the project area. The increase in demand for water in valley urban areas should be quantified. The proposed Program's impact on Central Valley urban areas for the duration of the regulation should be evaluated.
f. The environmental analysis should address the impacts on the Coordinated Long-Term Operations Program water distribution and water use decisions from earthquake and other natural disasters such as fire and flood within the project area.
g. The geology and soil conditions of the project area are unique. The analysis for each alternative should address the impact of variation in soil quality and characteristics on water distribution and use.
h. Hazards/Toxic. The impact of regulations which affect the availability of water to farmers (annually or seasonally) on cultivation practices including use of common chemicals, mowing (including for fire

protection), dust (air quality), harvest operations, irrigation, and type of crop grown should be addressed.

i. The impact of alternative sources of energy, current and future, on the assumptions about power production, particularly timing, that in turn could affect releases from reservoirs, should be addressed. The impact of alternative sources of energy on marketability of power from the CVP and SWP, should be addressed.
j. The impact of each alternative on the water quality available to agriculture from all sources including groundwater should be addressed. Will the water quality be changed to the extent that it may affect either existing crops' survival or future crop choice?
k. Water temperature as a program impact should be addressed in terms of the needs of different users, fisheries, agriculture, and recreation. How will the needs for a given water temperature affect water availability for all users?
l. The project description appears focused on fisheries and power. The impact of the program on existing water-oriented recreation areas and facilities should be addressed. Will it impede the creation of new water-oriented recreation areas? How will the use of water for recreation affect the availability of water to support agriculture?
m. Quantify the water needs of the fisheries and how these needs will be balanced with the needs of urban and agricultural users.
n. Of particular concern to my fellow Colusa County farmers is the Program's impact (regulations) on the proposed Sites Reservoir. How will the program affect water allocations that could be made available to new storage/power projects such as Sites and others?
o. The impact of the proposed program changes on CVP and SWP facilities, operation, and maintenance should be clearly addressed.

Thank you for addressing these concerns in the Draft EIS. I would appreciate your letting me know that you have received this comment letter. I would also appreciate your advice about how I can track progress in preparing the referenced EIS.

Please notify me when the Draft EIS is available for public review and provide me with an electronic copy of the draft document. My email address is doneagainfarms@me.com.

Sincerely Yours,

John Monroe
CEO, Done-Again Farms, Arbuckle, California

February 1, 2017

Katrina Harrison
Project Manager
Bureau of Reclamation, Bay-Delta Office
801 I St., Ste. 140
Sacramento, CA 95814-2536

Comments of Western Growers regarding Notice of Intent to Prepare a Draft Environmental Impact Statement, Revisions to the Coordinated Long-Term Operation of the federal Central Valley Project (CVP) and State Water Project (SWP), and related facilities.

Agency/Docket Number RR02800000, 18XR0680A1, RX.17868949.0000000

Western Growers is an agricultural trade association headquartered in Irvine, California. Western Growers members are small, medium and large-sized businesses that grow, pack and ship fresh fruits, vegetables and tree nuts from our home states of California, Arizona, Colorado and New Mexico. Beyond our home states, Western Growers members produce in more than 30 states as well as about 25 foreign countries. In total, Western Growers members account for roughly half of the fresh produce grown in the United States, both conventional and organic.

Many of our members produce in regions served by the CVP and SWP and have borne the brunt of allocation reductions imposed as a result of statutory, regulatory and court-imposed actions that have cumulatively removed more than three million acre feet per year from the San Joaquin Valley's agricultural water supply. Prior to enactment of the Central Valley Project Improvement Act in 1992, CVP contractors received 92 percent of their contracted allocation on average. By 2016, the average had fallen to 35 percent. Certainly, California's historically severe 2012-2017 drought must be taken into account, however it is clear that the effects of the drought were exacerbated by the regulatory demands of the Biological Opinions for Delta Smelt (2008) and Salmonids (2009), which resulted in allocations to south of Delta CVP contractors of zero percent in 2014 and 2015, and five percent in 2016. A system of updated water infrastructure and sensible regulatory policy would anticipate droughts, which are common in California, and more effectively mitigate their impact on all water users.

We believe there is a compelling and urgent need for the Bureau, in consultation with other agencies, to undertake revisions to the operation of the CVP and SWP as suggested in the Notice of Intent. These comments are intended to briefly share our views as to the suggested scope of revision; these comments are not intended to present a comprehensive scientific or economic analysis of any of the suggested revisions.

Our overarching view is that the stated rationales, and the corresponding alternatives to be considered, are well-founded. We have long advocated for the first three such suggested objectives:

- *"Maximize water supply delivery, consistent with applicable law, contracts and agreements, considering new and/or modified storage and export facilities."* California's water infrastructure has not been updated to reflect population growth, increasing allocations of water to environmental purposes, or changing climate and precipitation patterns that will cause a

reduction in the Sierra Nevada snowpack while also shifting more precipitation from snow to warmer and more intense rain storms. The state's storage and conveyance facilities were designed for a population half the size and a climate and precipitation pattern that is no longer relevant. We believe increased surface storage capacity is critically important to allow water managers to capture more runoff from flashier and more intense rain events, for later conveyance to beneficial uses south of the Delta (which would include enhanced groundwater recharge deliveries). We support several storage projects that would meet these objectives, including the proposed Sites and Temperance Flat Reservoirs, which are currently under consideration for Proposition 1 (2014) state bond funding for the public benefits that would be realized by the new yields of these facilities. We also support raising existing dams, specifically Shasta and San Luis. Additionally, we believe there is a need for new conveyance infrastructure, or modifications to existing conveyance infrastructure, to accommodate greater conveyance of flood runoff to farms and other lands suitable for groundwater recharge, especially in over drafted basins. Some of our members are engaged with conservation groups to test deliberate flooding of planted fields when flood runoff is available, to increase groundwater basin recharge for the benefit of all who depend on that basin. The pilot projects are encouraging and if they can be expanded, infrastructure investments and operations policy changes will be needed to realize the benefits of this strategy on a large scale. As the historically wet 2017 water year demonstrated, California lacks sufficient storage capacity and regional/local conveyance infrastructure to take full advantage of winter/spring excess precipitation for these and other purposes.

- *Review and consider modifications to regulatory requirements, including existing Reasonable and Prudent Alternative actions identified in the Biological Opinions issued by the USFWS and NMFS in 2008 and 2009, respectively.* We have seen some welcome rebalancing of CVP export operations recently, due in part to the enactment and implementation of the WIIN Act (S. 612, 2016). The guiding logic of the WIIN Act, as it pertains to CVP/SWP coordinated operations, rests on granting water managers on the ground the flexibility to increase exports, within prescribed limits, for short durations of time in order to export more water to storage south of the Delta when the Delta is in a very high water condition. While this rebalancing is very appropriate, the regulatory apparatus controlling CVP and SWP Delta operations remains fixed to the Biological Opinions and state water quality regulatory mandates. They are due for reexamination, for reasons outlined below.

- *Evaluate stressors on fish other than CVP and SWP operations, beneficial and non-flow measures to decrease stressors, and habitat restoration and other beneficial measures for improving targeted fish populations.* From a regulatory standpoint, reduction of exports by the CVP and SWP has been the "go-to" response to address declining populations of protected fish species in the Delta. Those populations, however, do not appear to be recovering in spite of these actions. Many researchers have identified multiple stressors impacting protected fish species in the Delta. We won't recount them all here, suffice to say that little to no actual action has been committed to addressing these stressors, in spite of the mounting evidence of their combined impacts on the protected fish species.

One example: researchers have demonstrated that about 90 percent of juvenile salmon fall prey to non-native predator fish – particularly the striped bass – before reaching the Delta on their journey to the sea. Despite calls to reduce this predator population by increasing or removing state bag limits, no action has been taken. Another example: Asian clams have been found in increasing number in the Delta. This non-native species is known to greatly reduce plankton abundance, causing a food web disruption that harms Delta smelt and other protected species. On a positive note, we suggest greater attention to certain habitat projects, some of which have shown great promise in supporting protected fish species in the Delta. One example: Sacramento Valley water districts in 2016, working in partnership with federal and state regulators, reached agreement to re-route flows through the Yolo Bypass to facilitate plankton production, the primary food source for Delta smelt. There are many other such projects that show promise in restoring food supplies for protected fish species which, if successful in recovery efforts, could lessen the regulatory agencies' impulses to restrict exports.

We also note the inclusion among the alternatives to be considered, "Actions to generate additional water or that improve and optimize the utilization of water such as desalination, water conservation, or water reuse." We support inclusion of these actions in the scope as well and note that many municipal water providers in California have invested in some or all of these strategies, and investment is increasing rapidly as urban agencies seek to reduce their reliance on the Delta in light of the regulatory policies that have reduced supply reliability. There are likely additional opportunities to expand investment in agricultural sector adoption of some or all of these strategies, as well. We note, however, that while there is always more to be done to increase water use efficiency in farming operations, the constriction of CVP and SWP supplies over the last 20-plus years has promoted massive private sector investments in agricultural water use efficiency in California. Continued reductions in CVP and SWP allocations to south of Delta agriculture cannot be accommodated through efficiency offsets. Rather, as has been the trend in recent years, some of the nation's most productive food-producing lands will be left fallow and exposed to erosion, with associated economic and social harm to many thousands of Californians who live and work in these regions.

Western Growers is greatly encouraged by the initiation of this process and looks forward to remaining engaged as it progresses.

Dave Puglia
Executive Vice President
dpuglia@wga.com

1 February 2018

Katrina Harrison, Project Manager,
Bureau of Reclamation, Bay-Delta
Office, 801 I Street, Suite 140,
Sacramento, CA 95814–2536

Dear Ms. Harrison:

This transmits comments regarding the scoping for development of the draft EIS for the Central Valley Project, State Water Project, and related facilities (hereafter projects) on behalf of the California Indian Water Commission (CIWC), a tribal self-determination organization pursuant to PL-93-638.

General Comments

The very existence of the projects is counterintuitive to the laws of nature and our traditional laws, and will continue to adversely affect trust resources, for which the involved agencies have trust responsibilities to tribes, traditional cultural practitioners, and tribal organizations (hereafter beneficiaries) pursuant to federal and state laws including PL 93-638 and executive order B-10-11. While these projects were developed prior to existence of laws requiring consultation, the Trust responsibilities to tribes has existed, yet there has been no real effort to address direct, indirect, and cumulative impacts to Tribal Trust Resources. For instance, prior legal precedence identifies beneficiaries' preeminent rights to surface and ground water (see *Winters v. United States* and *Agua Caliente v. Coachella Valley Water District & Desert Water Agency*). However, the projects (inclusive of biological opinions and other regulatory decisions) past and present have failed to acknowledge the fact that Bureau of Reclamation and other agencies have failed to uphold their trust responsibilities for these impacts and obligations to beneficiaries. Furthermore, past development of the projects have failed to adequately avoid, minimize, or mitigate for impacts to trust resources and sacred sites (e.g., Los Vaqueros, Shasta), nor has consultation been properly conducted. In order to assess these impacts, it is important this tribal perspective to be analyzed through participatory approaches to engagement. Beneficiaries with historic ties to the traditional cultural region of California, regardless of federal recognition status (such status does not negate the trust responsibility relationship to beneficiaries), should be engaged in identifying impacts of the projects on their homelands. We suggest consulting with beneficiaries to better determine project effects, alternatives, and mitigation. To understand the environmental setting requires an assessment which begins at the top of the contributing watersheds and extends through the ocean. Furthermore, there are some aspects of the environment such as spiritual or metaphysical parameters, which need to be assessed in order to fully understand the environmental impact analysis in a meaningful way to beneficiaries. We recommend analysis of such impacts through the use of the Mauri-o-meter http://mauriometer.com). The Mauri-o-meter assesses impacts to the environment, cultural wellbeing (inclusive of metaphysical aspects), social wellbeing, and economic wellbeing using a series of questions that are filtered through a heuristic model. It is not expected that the agencies or their consultants would be able to address these issues independently, so we advise providing a mechanism for beneficiaries to complete their own analysis using this tool, then providing that to the agencies for summation.

Agencies Involved

To fully understand trust responsibilities and Indian Trust Assets and impacts thereto, we recommend engaging with Gerald Jones, Bureau of Indian Affairs. Furthermore, the outreach to beneficiaries should be inclusive of all beneficiaries, because the direct, indirect, and cumulative effects are interrelated and interdependent to all California Indians.

Project Area/Area of Analysis

As indicated above, the interrelated and interdependent nature of the projects reaches from the summit to the sea, and thus impacts a broad suite of trust resources and beneficiaries across vast regions.

Alternatives To Be Considered

Several alternatives should be developed which focus on restoration and enhancement of natural storage and conveyance from the summit to the sea as a means to uphold trust responsibilities. The relationship between flows and fisheries survival and recruitment are fairly well established, and any plan should seek to optimize natural flows and seasonal variability to facilitate natural function. This includes the necessary fluctuation of salinity into the Delta as part of the seasonal and long-term cycle. Similarly, analysis of system wide (sea to summit) ecocultural impacts (e.g., ecosystem, traditional economy, and nutrient) associated with nutrient loss habitat connectivity and spawning of fish (particularly anadromous fish). Trust responsibilities extend to all transitory resources (e.g., fish, wildlife, water), and other cultural properties including sacred sites, gathering sites, etc. We encourage the agencies to further their trust responsibilities to not only to trust resources in general, but also the recovery of species (e.g., Delta smelt, green sturgeon, Chinook salmon) pursuant to the endangered species act. Such actions would include restoration of the natural basins and sinks throughout the Central Valley (e.g., Natomas Basin, Tulare Lake) as a means to provide surface storage and groundwater recharge amongst other functions and services the natural system provides. This could be achieved through land retirement. Another alternative should include incentives for recipients of projects waters to meet appropriate standards/quotas for use of the water they receive. An appropriate standard might be growing crops suitable to the natural supply of that particular landscape, and naturally sustained by expected water availability. The reliance on the Delta for conveyance is clearly a poor plan for the projects. Thus, an alternative might look to restore natural flow regimes in the Delta while also providing water within basins for local use (e.g., Tulare Basin can utilize water as appropriate as originates in that basin). In all cases mitigation scenarios should place emphasis on deeding lands back to beneficiaries.

We look forward to further discussion of these points in consultation with the Bureau of Reclamation to develop ecocultural solutions.

Sincerely,

Don Hankins

Don Hankins, Ph.D.
President

Katrina Harrison
ROC on LTO Project Manager
Bay-Delta Office
Reclamation Mid-Pacific Region
801 I Street, Suite 140
Sacramento, CA 95814-2536

WATER FORUM
Sacramento City-County Office of Metropolitan Water Planning

February 15, 2018

Re: Reinitiation of Consultation for Long-Term Operation of the Central Valley Project – American River Division Action Brainstorming and Water Forum Engagement

Dear Ms. Harrison:

This letter is on behalf of the Sacramento Water Forum, a diverse group of business leaders, water managers, local government leaders and environmental groups from the greater Sacramento Region. The Water Forum was established in 1993 with the co-equal goals of protecting the fishery and recreational resources of the lower American River and meeting the water needs of the Sacramento area. Water Forum staff and consultants have been working cooperatively with State and Federal fish trustee agencies and the U.S. Bureau of Reclamation to monitor conditions in the river and develop long term management strategies for responding to the declining fishery on the lower American River.

Critically, the Water Forum helps to coordinate activities to protect endangered salmonid species in the lower American River in significant part to ensure that Folsom and Nimbus Dam projects may operate without jeopardizing these species, while water agencies are able to provide reliable water to their customers. After almost two decades of successful collaboration, the Water Forum possesses an unmatched breadth of knowledge and history regarding the lower American River. We are thankful for the opportunity to contribute to the Reinitiation of Consultation (ROC) process and have a seat at the table. Please add the Water Forum to your list of stakeholder participants and all appropriate distribution lists.

The Water Forum has compiled the attached list of projects and operations that will help meet these two co-equal goals. This list has been compiled by reviewing past planning projects to determine the nexus with the Central Valley Project on the lower American River.

Thank you for your consideration.

Sincerely,

Tom Gohring
Executive Director
Enclosures

Cc: Water Forum Members
David Murillo – Mid-Pacific Region Director, Reclamation
David Mooney, P.E. – Bay/Delta Office Manager, Reclamation

Category	Action	Rationale
Address Water Temperature	As described in the NMFS 2009 BiOp, implement the following actions: • Power bypass monetary fund or functional equivalent (details can be found in "Structural Improvement Alternative Comparison for Temperature Management – Lower American River, Value Planning Study, Reclamation July, 2014) • Improve Folsom TCD • Reduce warming across Lake Natoma • Improve water temperature management decision tools	Temperature is a well-known stressor on Salmonids in the LAR. This is a short list of vetted projects that would help address this problem.
Flow Management	Include end-of-December and end-of-May storage requirements and spring pulse flows to provide protection for resident salmonids by implementing the Modified Flow Management Standard	Details can be found in the Terms and Conditions sheet at http://www.waterforum.org/cawaterfix/
Improve Habitat	Continue salmonid habitat enhancement in partnership with USFWS, CDFW, and the Water Forum, including: • Gravel augmentation • Side channel creation and restoration • Floodplain augmentation • Restore wetland and slough habitat • Improve revetments for fish	Habitat, especially spawning and rearing habitat needs replenishment to meet doubling goals.

	• Reduce Stranding	
Studies	Conduct studies to reduce uncertainty in restoration actions, including: • Continue otolith and genetic research • Steelhead population estimates and trends • Fall-run population model • Map aquatic diversity • Sediment transport model • Avoid hatchery competition or genetic introgression with wild salmonids	Effective projects require pointed adaptive management. This outlines basic objectives and studies that will refine future restoration projects.

Harrison, Katrina <kharrison@usbr.gov>

Agency/Docket Number: RR02800000, 18XR0680A1, RX.17868949.0000000; Document Number: 2017-28215

Pat Walker <plwalker@pacbell.net> Mon, Jan 1, 2018 at 12:55 PM
To: kharrison@usbr.gov

My comments on the draft EIS, proposed modifications to the Central Valley Project:

The EIS should consider the fact that the drought in California has not ended. The long-range forecast for the future of California is one of increased temperatures, limited or no snowpack, and reduced water supplies. The winter snow and rain of the 2016-2017 rainy season resulted in filling the surface-water reservoirs, but it did not restore the groundwater aquifer in the Central Valley.

Growers, water districts and other entities have overdrawn the aquifer in the Central Valley for decades, and one good rainy season did not correct the situation. Accordingly, the EIS should take into account that proposed big water construction projects do not address the fundamental problem of diminished water supplies in California.

The EIS should consider what steps growers and water districts must take in order to produce crops without destroying the natural environment of the Central Valley, i.e., the fish and wildlife that need the water to survive. These steps might include retiring less productive farm land, growing only drought-tolerant crops, better irrigation practices, or modifying current ownership regimes so that farms become smaller, more sustainable, and able to produce crops in harmony with the fish, wildlife and vegetation that make life livable and that all Californians need.

Pat Walker

300 Arlington Way

Menlo Park, CA 94025

Virus-free. www.avg.com

Harrison, Katrina <kharrison@usbr.gov>

Replace 1.5 mile Clifton Court Forebay levee with Fish Screen - Add MAF to exports for under $500 million

Joseph_Rizzi <Joseph_Rizzi@sbcglobal.net> Tue, Jan 2, 2018 at 10:44 AM
To: kharrison@usbr.gov

Add 4 to 17 MAF of water for export south, while saving fish in the Delta. The fish screens replacing the 1.5 mile levee can utilize ZeeWeed or a similar type of membrane to extract the water from the Delta with ***ZERO*** ability to kill fish. I still firmly believe that 1.5 million square feet of floating horizontal screen utilizing "up-screen" technology will do the trick in the most cost effective way. Under $500 million for construction.

Can you help highlight a real options that can add millions of acre feet for southern CA while helping the fish, Delta and the Environment?

- **Delta and Environment** – Replacing Clifton Court Forebay's 1.5 mile levee with fish screen to end killing of all aquatic life (including endangered species).
- **Delta Flows** – Fill CCF only at night when most fish are sleeping, which makes daytime all natural flows. Pumps can operate 24/7 with CCF holding 1 – 3 day supply. CCF capacity can be increased if dredged.
- **Salt** – keep a section free of obstruction, but add shipping lock and tidally controlled louvers to reduce salt water intrusion into Sacramento Delta.

These 3 are addressed in the attached PDF, which will:

- Make the Delta a more fresh water region that will support more life.
- 2/3 of each day will have normal flows in the Delta area.
- With Salinity (lock and tidal louvers) studies at Benicia we will know how much (50% to 85%) of the salinity can be controlled without harming environment.
- No blockage of Delta or straits allowed! Environment and Fish need to have access to freely come and go from Delta.
- Zero fish killed in exporting water from Delta. That should be a goal or requirement. 1.5 mile fish screen will keep fish safely in Delta.
- Reduce costs of operation of Fish capture and relocation, because these would not be when export water is obtained from screened CCF.
- Export more water – with 0 fish deaths

Please keep in mind:

- Current CCF intake area is 5 gates 20 feet long and 30 feet deep which equals 3,000 square feet.
- New CCF at West Canal area (conventional Screens) is 7,800 Feet long by 30 feet deep which equals 234,000 Square Feet.
- New CCF at West Canal area (new ***UP Screens***) is 7,800 Feet long by 200 feet wide, which equals 1,560,000 Square Feet of up screen, no moving parts, no clogging with floating debris, taking water from the middle of the river,

using a 4 foot wide sill wall sunk 60' deep, screen size 1/3 of FW standards, CCF flow controlled by water filling in and out of lay flat hoses. Approx. $50 Million project.

Thanks,

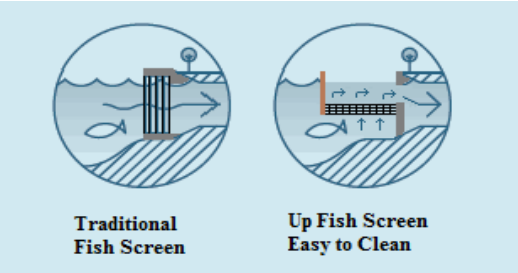
Joseph Rizzi -- Cel: 707-208-4508 -- Email: Joseph_Rizzi@sbcglobal.net

---

Fish Death Trap 3.pdf
329K

Fish Death Trap
Clifton Court Forebay

- **Fish screen replacing levee to keep Fish in Delta (West Canal) and out of the Clifton Court Forebay (CCF).**
- **Re-route Central Valley Project intake to receive all intake water from Clifton Court Forebay.**
- **Retire both fish capture and relocation facilities (no longer needed) permanently to save $$$.**



Handy Conversions			
CFS	**AF / Day**	**AF / Year**	**MAF**
3,000	5,948	2,171,121	2.2
9,000	17,845	6,513,362	6.5
12,000	23,793	8,684,483	8.7

CCF holds 29,000 Acre Feet (AF)

1.5 Mile long new fish Screen for CCF

1.5 Million Square Feet of Screen area.

Flows slowed to 0.02 CFS at 12,000 CFS with screen size 0.0375 x 0.0464

Req. = flow > .2 CFS with screen 0.156 x 0.0938

Operationally:

- Clifton Court Forebay – Originally was an island but converted to water storage for SWP to allow pumping at night (when fish are sleeping and power is cheaper) and holds 29,000 Acre Feet (AF).
- **UP Fish Screen** at CCF intake – As pictured above the fish can swim under the screen and the screen is between the surface and bed of the water with a boom like floating stopping any floating debris from clogging screens.
- ***FLOWS*** – Pump all day while filling CCF only at night allows the natural flow of (Delta) all day long to flush out any fish that were drawn to the Clifton Court Forebay intake screen area.
- CVP pumps would change it's intake to getting water from CCF instead of river.
- Closing the (no longer needed) Tracy (CVP) and Skinner (SWP) Fish Screen Facilities will eliminate the death of fish and save the cost of operating and trucking the fish to other parts of the Delta.
- Automated water sprayers would periodically clean the new filters as needed.
- With ZERO fish deaths, restriction on pumping will be harder. The improved Delta flows will also help ease restrictions. Win for fish, Delta, environment and export water!!!

Joseph Rizzi – 707-208-4508 – Joseph_Rizzi@sbcglobal.net

Salinity Control - 3D Delta Modeling needed to convince DWR

Related 3-dimensional hydrodynamic water quality models need funding:

- **Keep ½ of the strait un-blocked** with ½ blocked with a shipping lock and tidally controlled louvers
- **Keep ¼ of the strait un-blocked** with ¾ blocked with a shipping lock and tidally controlled louvers
  - Other variations ¾ **un-blocked** with ¼ blocked and **1/12 un-blocked** with **11/12** blocked.

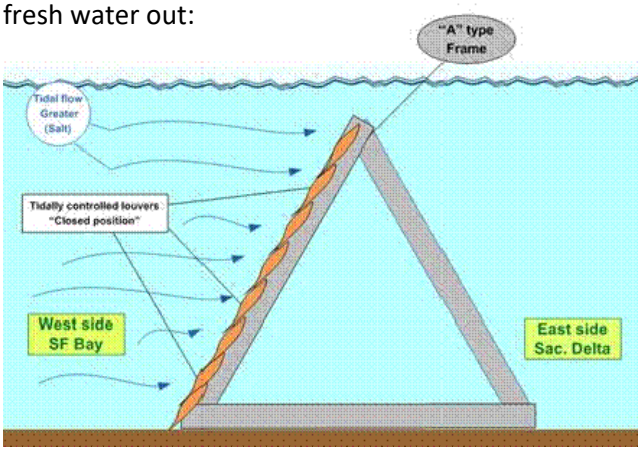
NOT a ~~**DAM**~~, ~~**Barrier**~~ or Sill as previously studied!!

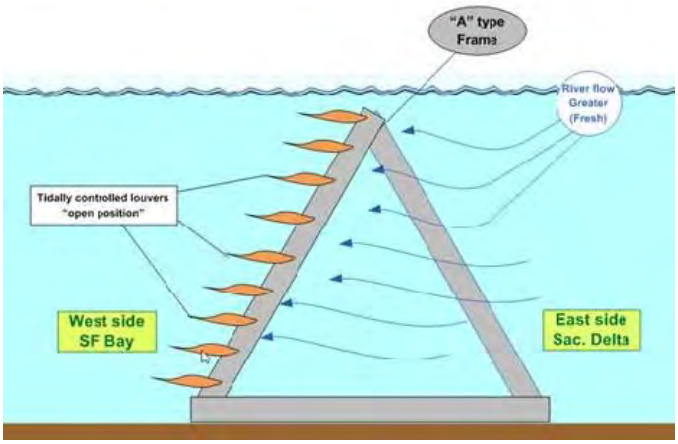
One section (min. 1/12) always left open (un-obstructed in any way) for fish and small water craft.
1 mile across the strait means that at least 1/12 of a mile would be kept always open to all.

With ½ of strait blocked (south side with shipping channel and tidally controlled louvers):

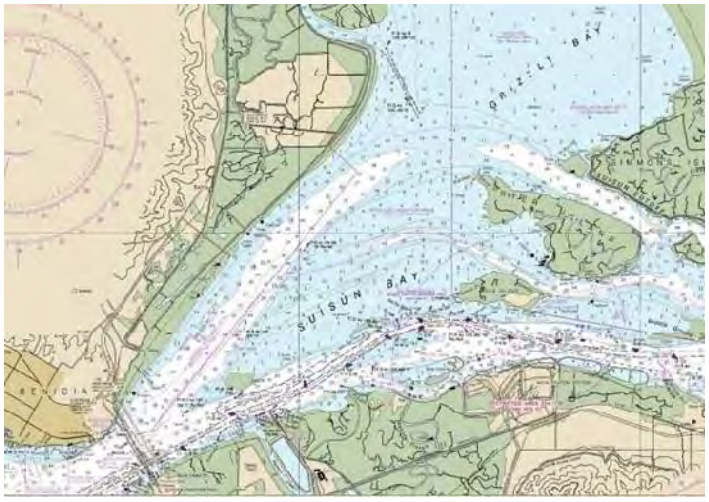
- 50% to 85% reduction of the salt water intrusion into Sac. Delta area?
- Redirect salt water push into Grizzle Bay? Not into Sac. Delta?
- Reduced salt water flow into Delta due to reduced opening across the straits
- Maintains fresh water flow out to the SF bay.
- Lock would make the ship passage by the 3 Benicia bridges safer. (ie.. Cosco Busan hit Bay Bridge)
- PPIC reported that 71% of water released from reservoirs to the North is for salinity control for water exports, 18% for fish. (50% reduction of 71% = 35% •Dry year 12 MAF x 35% = ***4.2 MAF*** • WET 48 MAF x 35% = ***17 MAF***)
- **More Fresh water to export while keeping more water in our Northern reservoirs.**
- **More of a fresh water Delta will add wildlife and help the environment grow and thrive.**

The following is what the tidally controlled louvers would look like, stopping the salt water intrusion while allowing the fresh water out:





NOAA Chart of the Benicia area is great to see how reducing and redirecting the tidal flow to Grizzly Bay by blocking the shipping channel and adding tidally controlled louvers which will have a dramatic effect on salinity control when you keep in mind that salt water is heavier than fresh water.
http://www.charts.noaa.gov/OnLineViewer/18656.shtml



Joseph Rizzi – 707-208-4508 - Joseph_Rizzi@sbcglobal.net

Harrison, Katrina <kharrison@usbr.gov>

Fwd: Meetings scheduled for public input on efforts to maximize Central Valley Project deliveries

Barbara Vlamis <barbarav@aqualliance.net> Thu, Jan 4, 2018 at 9:27 AM
To: kharrison@usbr.gov
Cc: Jim Brobeck <jimb@aqualliance.net>, Michael Jackson <mjatty@sbcglobal.net>, Don Hankins <don_hankins@sbcglobal.net>, Bill Jennings <deltakeep@me.com>, Caleen Sisk <caleenwintu@gmail.com>, Tom Stokely <tstokely@att.net>

Hello Katrina, We request that there be a third meeting in the largest urban area north of Sacramento: Chico. It behooves USBR to make a good faith effort to reach people in the source area for the majority of the water that is planned for export.

Barbara

--
Barbara Vlamis
Executive Director
AquAlliance
P.O. Box 4024
Chico, CA 95927
(530) 895-9420
www.aqualliance.net

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-------- Original Message --------
Subject: Meetings scheduled for public input on efforts to maximize Central Valley Project deliveries
Date: Wed, 03 Jan 2018 18:33:08 -0500
From: Erin Curtis <eccurtis@usbr.gov>
To:barbarav@aqualliance.net

News Release RECLAMATION *Managing Water in the West*

Mid-Pacific Region
Sacramento, Calif.

Media Contact: Erin Curtis, 916-978-5100, eccurtis@usbr.gov

For Immediate Release: Jan. 3, 2018

Meetings scheduled for public input on efforts to maximize Central Valley Project deliveries

SACRAMENTO, Calif. – The Bureau of Reclamation published a notice of intent Friday to prepare an environmental impact statement, "Revisions to the Coordinated Long-term Operation of the Central Valley Project and State Water

Project, and Related Facilities" in the Federal Register https://www.federalregister.gov/documents/current#reclamation-bureau.

Reclamation is seeking comments by Feb. 1, 2018 that will be used to develop alternatives to the proposed action. Two public meetings have been scheduled to receive oral or written comments:

- Tuesday, Jan. 16, from 6-8 p.m. at the San Luis & Delta-Mendota Water Authority, 842 Sixth St. in Los Banos
- Tuesday, Jan. 23, from 2-4 p.m. at the Stanford Room, 650 Capitol Mall in Sacramento

The CVP is a major water source for agricultural, municipal and industrial, and fish and wildlife demands in California. State and federal regulatory actions and other agreements have significantly reduced the water available for delivery south of the Sacramento-San Joaquin River Delta. This project will evaluate alternatives to restore water supply in consideration of all authorized purposes of the CVP.

Written comments are due by close of business, Feb. 1, 2018, by U.S. mail or hand-delivery to Katrina Harrison, project manager, Bureau of Reclamation, Bay-Delta Office, 801 I Street, Suite 140, Sacramento, CA 95814-2536; fax 916-414-2439; or email kharrison@usbr.gov. For additional information, please contact Harrison at 916-414-2425 (TTY 800-877-8339).

###

Reclamation is the largest wholesale water supplier in the United States, and the nation's second largest producer of hydroelectric power. Its facilities also provide substantial flood control, recreation, and fish and wildlife benefits. Visit our website at http://www.usbr.gov. Follow us on Twitter @USBR and @ReclamationCVP.

If you would rather not receive future communications from Bureau of Reclamation, let us know by clicking here.
Bureau of Reclamation, Denver Federal Center, Alameda & Kipling Street PO Box 25007, Denver, CO 80225 United States

Harrison, Katrina <kharrison@usbr.gov>

Public meetings on maximizing CVP deliveries

jimb@aqualliance.net <jimb@aqualliance.net> Fri, Jan 5, 2018 at 2:59 PM
To: eccurtis@usbr.gov, kharrison@usbr.gov

The water that this project seeks to deliver comes from north of the Delta. The two public meetings the USBR has scheduled to receive oral or written comments seem to ignore the region that is the source of the proposed Maximized CVP water deliveries. The Bureau should, indeed must schedule meetings in the Northern Sacramento Valley, preferably in Chico, to address widespread public concerns that this effort will drain more water from the Sacramento River watershed and the Trinity River watershed.

--
Jim Brobeck, water policy analyst, AquAlliance

Harrison, Katrina <kharrison@usbr.gov>

Ideas on Central Valley Water

Ted Lingley <teamnc@earthlink.net> Fri, Jan 5, 2018 at 11:13 AM
To: kharrison@usbr.gov

Dear Ms. Harrison,

It seems to me that the only real logical path to providing additional water to the Central Valley customers below the Sacto/San Joaquin Delta in an expedient and efficient manner is to eliminate the unnecessary regulations that have crippled our agricultural output for years.

We have the water, we have the infrastructure to provide that water and there really is no excuse for what has occurred via environmental legislation in this State over the last 20+ years.

I am not a farmer and have no personal financial interest in California agriculture. I am a 50 year old Native Californian that has seen a real decline in this State since the late 80's-early 90's. Would love to see our State flourish and prosper like it once did.

Good luck in your efforts!

W. T. Lingley
209-321-0981
Tracy, CA

Harrison, Katrina <kharrison@usbr.gov>

Re: Scoping for EA of potential modifications to CVP to maximize water deliveries and optimize marketable power generation

Harrison, Katrina <kharrison@usbr.gov> Mon, Jan 8, 2018 at 9:12 AM
To: karen wilson <karenwilson19@hotmail.com>

Hello Karen -

Link to the Notice of Intent as published in the Federal Register:
https://www.usbr.gov/mp/BayDeltaOffice/docs/12-29-17-noi-cvp-lto-82-fr-61789.pdf

This press release has the information about the 2 public meetings we have scheduled:
https://www.usbr.gov/newsroom/newsrelease/detail.cfm?RecordID=61302

We will have a presentation at the public meetings that will provide details about the project. We will also post the presentations online after the public meetings in case you cannot attend.

Thank you,

Katrina Harrison

On Sat, Jan 6, 2018 at 9:16 PM, karen wilson <karenwilson19@hotmail.com> wrote:

> Katrina Harrison
> Project Mgr
> Bureau of Reclamation
> Bay-Delta Office
> 801 I St, Ste 140
> Sacto, CA 95814
>
> Please let me know the details of the proposed Environmental Analysis and of any public scoping meetings on the subject in title of this email.
> Please send the link to the notice published in the Federal Register.
> Thank you,
>
> Karen Wilson

--
Katrina Harrison
Bay-Delta Office
Bureau of Reclamation
Office: (916) 414-2425
Cell: (916) 606-8793

Harrison, Katrina <kharrison@usbr.gov>

Public hearing/Meeting in Chico

Anna Meehan <annameehan5@gmail.com> Sun, Jan 7, 2018 at 6:10 PM
To: kharrison@usbr.gov

I am requesting a public hearing here in Chico, CA.

I am opposed to Bureau efforts to Maximize Central Valley Project water deliveries.

Thank you,
Anna Meehan

Love to all beings.
Compassion to all beings.
Joy to all beings.
Serenity to all beings.

(a Buddhist formula)

Harrison, Katrina <kharrison@usbr.gov>

Public Meeting-Central Valley Project

Celine O'Malley <celine.omalley@gmail.com> Sun, Jan 7, 2018 at 10:34 PM
To: kharrison@usbr.gov

Dear Ms. Harrison,

I am writing to ask that a public meeting be held in Chico, CA regarding the Department of Interior's Notice of Intent to draft a plan to "Maximize water supply delivery" of CVP and SWP water to desert corporate agriculture in the San Joaquin Valley. Possibilities within this plan include raising the Shasta Reservoir dam and eliminating fishery flow requirements. These issues affect us all and there are many of us in the Chico area that feel very strongly about this issue. For this reason, I request that a public meeting be held in Chico to allow us to share our comments and concerns in person.

Thank you for your time.

Sincerely,

Celine O'Malley
Concerned Citizen
Chico, CA

Harrison, Katrina <kharrison@usbr.gov>

Reqesting a Chico Public Meeting

charlie yarbrough <charliey1001@gmail.com> Sun, Jan 7, 2018 at 2:49 PM
To: kharrison@usbr.gov

Dear Ms. Harrison

I'm writing to request that you hold a public meeting in Chico CA. on Trump's 12/29 Notice of Intent to draft a plan to "maximize water supply delivery".

I wish it were a plan to maximize SUSTAINABLE delivery to sustainable agricultural usage WITHOUT DAMAGE to the source!

Managing water from the northern California raises many and diverse concerns from environmentalists, farmers, native americans, fishermen, recreation enthusiasts. Also it very much concerns just plain residents like myself who are aware of and apprehensive about the many failures of large scale hydraulic systems in human history.

Sincerely

charlie yarbrough
charliey1001@gmail.com
273 e 3rd ave, chico, ca 95926
530-961-2041(mobile+immediate messages)
707-539-4085 (other messages)

Dilbert says: The road to success is always under construction!

Harrison, Katrina <kharrison@usbr.gov>

request meeting in Northern Sacramento Valley

Cheryl Shinn <c.shinn@me.com> Sun, Jan 7, 2018 at 1:29 PM
To: kharrison@usbr.gov

Ms. Harrison, Project Manager

I am writing to let you know that I am opposed to the Bureau of Reclamations efforts to Maximize Central Valley Project water deliveries. I request that you hold a public meeting in Chico.

Cheryl Shinn
9620 Cohasset Road, Cohasset, CA 95973

Harrison, Katrina <kharrison@usbr.gov>

meeting in Chico

Diane Garner <diangarner@gmail.com> Sun, Jan 7, 2018 at 3:03 PM
To: kharrison@usbr.gov

Dear Ms. Harrison,

I am requesting a meeting to be held in Chico Ca. to allow our concerns to be expressed about the transfer of water to the San Juaquin Valley.

It is my understanding that the San Juaquin Valley was never meant to be a large agricultural area due to the fact of inconsistent rain and low levels of water flow naturally into the area.

Land in the area was meant to utilize crops that could lay fallow during drought years, and high water needs crops such as almonds and other types of orchard trees were never suppose to be planted in the area.

The transfer and especially the sell of water into the area is WRONG, and is exploiting the Northern California resources meant to replenish our aquifers, and allow salmon to prosper.
The transfer of water benefits an elite few large agricultural corporations at our expense.

Please allow for our public comment in this area by holding a meeting here in Chico.
Thank you,
Diane Garner

Harrison, Katrina <kharrison@usbr.gov>

Water Meeting in Chico

higgy@chico.net <higgy@chico.net> Sun, Jan 7, 2018 at 6:17 PM
To: kharrison@usbr.gov

Dear MsKatrina Harrison,
I am writing to request that your department hold a public meeting in Chico, Ca, prior to, and in order to take public comment on, water deliveries to the San Jaoquin Valley that would undoubtedly affect North State water supplies, as well as fisheries.
I have attended such meetings before and look forward to being able to give input on these most important issues.
Sincerely,
James Lerner
530 343 8932
Chico, Ca

Harrison, Katrina <kharrison@usbr.gov>

Water

janicekalman@yahoo.com <janicekalman@yahoo.com> Sun, Jan 7, 2018 at 2:18 PM
To: kharrison@usbr.gov

I am a small hobby farmer in Butte county and a health care provider writing to Voice my concerns about the export of water from Northern California to the central valley.

A lot has been done to restore our local creeks and rivers to preserve the salmon run here and preserve the salmon species itself. I am extremely opposed to dropping those creek and river levels low enough so Salmon cannot migrate north.

Crops are rotting on the ground in California because of inconsistent immigration policies and procedures between federal and state agencies which has caused many farm workers to return to Mexico and Central America. It seems insane to me to divert water which will result in the end of the Salmon fishery to grow crops which will not make it to market.

Sincerely,

Janice Kalman FNP, MSN

Harrison, Katrina <kharrison@usbr.gov>

Requesting USBR Meeting in Chico CA

Richard Roth <richardhroth1@gmail.com> Sun, Jan 7, 2018 at 12:35 PM
To: kharrison@usbr.gov

Katrina Harrison

In regard to Notice of Intent to draft a plan to “Maximize water supply delivery” of CVP and SWP water to desert corporate agriculture in the San Joaquin Valley. And as

- raising the Shasta Reservoir dam and
- eliminating fishery flow requirements

are certainly on the list of solutions they are considering.

And as:

- The USBR plans to hold two public meetings this month to take public comments:
  - one meeting in Los Banos at the San Luis & Delta-Mendota Water Authority office and
  - another meeting in the capitol, Sacramento.

I call for and insist that the Bureau hold a public meeting in the Northern Sacramento Valley, here in Chico, to take into account our deep concerns that Northstate Salmon Water is being marketed by millionaires to millionaires to make more $millions.

--
Richard Roth
Chico, CA 95928

Harrison, Katrina <kharrison@usbr.gov>

Reqest Chico Public Meeting

robin keehn <robink48@hotmail.com> Sun, Jan 7, 2018 at 2:26 PM
To: "kharrison@usbr.gov" <kharrison@usbr.gov>

Dear Ms. Harrison
Please hold a public meeting in Chico CA. on Trump's 12/29 Notice of Internt to draft a plan to "maximize water supply delivery".

As you may know Chico is an epicenter of North State water concerns. Concerns held by environmentalists, farmers, native americans, fishermen as well as, recreation enthusiasts.

I am personally opposd to the Bureau's efforts to "maximize" water delivery Central Valley desert corporate agriculture that has increased drmatically overthe last decade. I would like you to hear others concerns and alternative proposals.

Sincerely,
Robin Keehn
273 E 3rd Ave
Chico CA 95926
530/899-7911

Harrison, Katrina <kharrison@usbr.gov>

Northern CA Water Exploitation

Vicki Davis <dolphinheart100@gmail.com> Sun, Jan 7, 2018 at 10:42 PM
To: kharrison@usbr.gov

Dear Ms Harrison,

I live in Chico, CA and I recently attended a viewing of a documentary that addressed some of the water issues Californians deal with. It was very educational and sparked alot of concern in me. It looks as though the Maximize Central Valley Project involves the transfer of alot of water from our parts up north here and it concerns me what kind of ecological impact it could have in the long term.

Since Chico is close to the heart of this matter, I am requesting that a public meeting be held here in Chico to express and address our concerns. Thank you very much, Vicki

Harrison, Katrina <kharrison@usbr.gov>

Northern California Watershed Wants a Voice

Chris Nelson <chris4pax@gmail.com> Mon, Jan 8, 2018 at 8:40 AM
To: kharrison@usbr.gov

I am absolutely opposed to Bureau efforts to Maximize Central Valley Project water deliveries and would like to express my concerns in person at a public meeting in Chico rather than having to drive to Sacramento. This is our water and we want a Voice!

Please reply about where and when that meeting will be.

Sincerely,
Chris Nelson
2300 B Estes Rd.
Chico 95928

Harrison, Katrina <kharrison@usbr.gov>

Meeting in Chico, please

David Grau <david@valleyoaktool.com> Mon, Jan 8, 2018 at 7:12 AM
To: kharrison@usbr.gov

Ms. Harrison,

As a citizen affected by water projects in California, I insist that the Bureau of Reclamation hold a meeting in the local area directly impacted by proposed changes in the storage and distribution of publicly owned water that originates in northern California. It is unacceptable to avoid the comments northern California citizens are ready and willing to present. Avoiding citizen input is probably grounds for successful court challenges in the future. There will be comments and suggestions from a wide variety of citizens. Please schedule a meeting in Chico as soon as possible, and announce it widely.

Thank you,

David Grau
a citizen of Butte County

--
David Grau
Valley Oak Tool Company
530-342-6188
www.valleyoaktool.com

Harrison, Katrina <kharrison@usbr.gov>

maximize water supply delivery

Diana Dejesus <willowcoyote9@gmail.com> Mon, Jan 8, 2018 at 8:46 AM
To: kharrison@usbr.gov, Willow Coyote <willowcoyote9@gmail.com>

Dear Miss Katrina Harris, Please have the USBR Bureau hold a public meeting in the Northern Sacramento Valley, right here in Chico, to take into account our concerns that Northstate Water is being marketed by desert corporate agriculture millionaires todeviate water from us and our water needs including agriculture and salmon and peronal use.

Thank you,

Diana Dejesus

Harrison, Katrina <kharrison@usbr.gov>

Request for Public meeting in Chico, Calif.

Diane Suzuki-Brobeck <dreamforpeace@hotmail.com> Sun, Jan 7, 2018 at 12:44 PM
To: "kharrison@usbr.gov" <kharrison@usbr.gov>

Katrina Harrison,

In regard to Notice of Intent to draft a plan to “Maximize water supply delivery” of CVP and SWP water to desert corporate agriculture in the San Joaquin Valley and of raising the Shasta Reservoir dam and eliminating fishery flow requirements.
And concerning:

- The USBR plans to hold two public meetings this month to take public comments:
  - one meeting in Los Banos at the San Luis & Delta-Mendota Water Authority office and
  - another meeting in the capitol, Sacramento.

Because it is difficult to travel to these two locations,
I call for and insist that the Bureau hold a public meeting in the Northern Sacramento Valley, here in Chico, to take into account our deep concerns that Northstate Salmon Water is being marketed by corporate agriculture interests which only profits those with alot of money.
thank you for listening,
Diane Suzuki

Chico, CA 95926

Harrison, Katrina <kharrison@usbr.gov>

Concerning the "Maximizing Water Supply Delivery" directive

Eric Chisler <jollyradical@gmail.com> Mon, Jan 8, 2018 at 4:33 PM
To: kharrison@usbr.gov

Ms. Harrison,

I'd like to join the voice of those requesting a public meeting concerning changes in water policy projected by the Department of Interior's call to "maximize water delivery" in the Central valley. Between the increasing loss of salmon habitat, the impending terror of a megadrought, the spectre if water tunnels and Site's resovoir, and of course the massive diversion of wild waterways to southern deserts there is a deep need for each watershed to have input on changing dynamics in this vast, interconnected system.

I oppose the expansion of water delivery to southern California, and that opinion is quite common in the places the water is being taken from. We have a right and responsibility to give input to proposals that threaten our aquifers, riparian habitats, and agricultural wells.

Thank you for your service and your time,

Eric Chisler
(530) 717-3764

Curator, 'the emergence network'
www.emergencenetwork.org
Scholar, Orphan Wisdom School
www.orphanwisdom.com

Harrison, Katrina <kharrison@usbr.gov>

input into ways of providing more water to its Central Valley Project customers south of the Sacramento-San Joaquin Delta

Gary Brightenstine <garybrig@gmail.com> Mon, Jan 8, 2018 at 11:57 AM
To: kharrison@usbr.gov

Here's a novel idea...how about WE STOP SENDING ALL OUR WATER TO LOS ANGELES!!!

Harrison, Katrina <kharrison@usbr.gov>

Water Delivery Maximization

Jeanette Conery <missvdesignschico@gmail.com> Mon, Jan 8, 2018 at 6:44 AM
To: kharrison@usbr.gov

Ms Harrison,

I am opposed to Bureau efforts to Maximize Central Valley Project water deliveries and would like to express my concerns in person at a public meeting in Chico. After all, it is the North State that will be at risk of losing water security in future generations. We should have an opportunity to be heard.

Jeanette Conery
Registered Voter

Harrison, Katrina <kharrison@usbr.gov>

Requesting Public Comment in Chico

Jim Best <best.jim@gmail.com> Mon, Jan 8, 2018 at 10:31 PM
To: kharrison@usbr.gov

Ms. Harrison --

Harrison, Katrina <kharrison@usbr.gov>

Opposition to Maximize Water Supply Delivery: Request for Meeting in Chico

Katrina Djberof <katrina@grubchico.org> Mon, Jan 8, 2018 at 11:26 AM
To: kharrison@usbr.gov

January 8, 2017

Dear Bureau of Reclamation Project Manager, Katrina Harrison,

I appreciate the amount of responsibility you hold for managing one of our most precious and life-affirming elements on this planet, water. World wide we see how the sacredness of water being life has emerged from the people and the imperative we have to be in good relationship with water for our health and wellbeing. California holds the leadership in modeling environmental and social stewardship. Thank you for being an actor of many and guardian to the political ecology of water in a land I call home.

As a northern California resident, teacher, and registered voter, I am deeply and profoundly opposed to Bureau efforts to Maximize Central Valley Project water deliveries for a multitude of reasons. I am requesting a meeting for us people of the North Sacramento Valley watershed to express our concerns at a public meeting in Chico.

For the past 28 years I have been involved in alternative development and social change in context to agro-ecology, developing local food systems and community building in Washington, California, New Mexico, Ecuador, and Peru. I graduated from the University of Washington with a B.A. in Anthropology focused in Environmental Anthropology, with a minor in International Studies in Latin America, with certificates in Conservation Ecology, and Interculturality from La Fundación Cimas del Ecuador.

Shipping water from the Northern Sacramento Valley to the San Joaquin Valley, tapping ground water that is already depleted, and raising Shasta Reservoir dam and eliminating fishery flow requirements to "Maximize water supply delivery" of CVP and SWP water to desert corporate agriculture and other actors is a nightmare waiting to happen. This issue goes beyond marketing and profiting millions of dollars between millionaires and institutions. We are witnessing human-constructed and natural systems collapsing as a result of these failed human-designed systems.

One only needs to look at what happened and what is happening in the Mono Lake Basin to understand the grave environmental impacts to exporting water to southern California. The resulting devastation and tragedy to the water and aquatic life, to the people living in and native to that landscape, in addition to the creation of a toxic landscape that is now "managed" is something Californians have the responsibility never allow to happen again. We know better because we learn from our mistakes and our decisions must serve the Greater Whole, not just the pockets of a few milionaires and agencies.

In appreciation for your time and consideration for our Commons,

Katrina Djberof
Graduate Student at CSU, Chico

980 Normal Ave
Chico, CA 95928
katrina@grubchico.org

530-826-6896

Harrison, Katrina <kharrison@usbr.gov>

Request for public meeting in Chico

Laurel Paulson-Pierce <veraloe@gotsky.com> Mon, Jan 8, 2018 at 12:02 AM
To: kharrison@usbr.gov

Katrina Harrison, project manager, Bureau of Reclamation,

If there are decisions being made about the Central Valley Project, involving water from Northern California, there should be an opportunity to discuss this in Chico in Northern California. Please make plans to schedule a public meeting in Chico.

Thank you, Laurel Paulson-Pierce

Harrison, Katrina <kharrison@usbr.gov>

Meet in Chico re OUR water

Mary Kay <minserra@hotmail.com> Mon, Jan 8, 2018 at 10:25 AM
To: "kharrison@usbr.gov" <kharrison@usbr.gov>

Hello Ms. Harrison,
It has been brought to my attention that you are the project manager for the USBR's plan to take Northern California's water and send it to the south.
Please, listen to those of us that this would affect negatively, for the gain of wealthy people elsewhere. There needs to be a meeting here in Chico so that we can have our questions and concerns addressed.

Thank you,
Mary Kay Inserra

Harrison, Katrina <kharrison@usbr.gov>

Water Transfers

Nora Burnham <nburnham@ymail.com> Mon, Jan 8, 2018 at 4:37 PM
To: kharrison@usbr.gov

Hello Ms Harrison,

I am opposed to Bureau efforts to Maximize Central Valley Project water deliveries and would like to express my concerns in person at a public meeting in Chico. It is too difficult to travel to the other places.

Sincerely,
Nora Burnham
3385 Clark Rd.
Butte Valley, CA. 95965

Sent from my iPad

Harrison, Katrina <kharrison@usbr.gov>

Water

Steven Cook <sandhillstevie@gmail.com> Mon, Jan 8, 2018 at 11:14 AM
To: kharrison@usbr.gov

I insist that we have a public meeting in Northern California to discuss the issue of how our water is used. Right here in Chico!

Harrison, Katrina <kharrison@usbr.gov>

CVP and SWP water

Patricia Puterbaugh <pmputerbaugh@yahoo.com> Mon, Jan 8, 2018 at 11:40 AM
To: "kharrison@usbr.gov" <kharrison@usbr.gov>

Hello Ms. Harrison - I read with horror and amazement the notice in our local paper - the Chico Enterprise Record about the Department of Interior's NOI to "maximize water supply delivery" to Southern California and agriculture in the San Joaquin Valley.
We ask you to come personally to hold a public meeting in the area where these water transfers will be taking place. In NORTHERN CALIFORNIA, specifically Chico, CA or somewhere near. This water belongs to all peoples and we are dependent on this water for recreation, for our embattled fisheries and for our wildlife and clean drinking water. We will NOT take this lying down.
Sincerely, Trish Puterbaugh, Cohasset, CA. 95973

Harrison, Katrina <kharrison@usbr.gov>

Opposing Water Grab

Alicia Maria Siu <aliciamariasiu@gmail.com> Tue, Jan 9, 2018 at 6:21 PM
To: kharrison@usbr.gov

To Ms.Harrison,
I am opposed to the proposed water grab of Northern California and Delta water by the Trump administration and San Joaquin Valley growers.

This water grab would come in a time when the Delta smelt are near extinction and winter-run and spring-run Chinook salmon, Central Valley steelhead, longfin smelt, green sturgeon and other fish species are struggling to survive after decades of massive water deliveries.

As Native American, Nisenan, I oppose the destruction of native species in our waterways.

respectfully,

Alicia Siu

Harrison, Katrina <kharrison@usbr.gov>

maximizing water supply deliveries

Don G Miller <DGMiller@csuchico.edu> Tue, Jan 9, 2018 at 11:56 AM
To: "kharrison@usbr.gov" <kharrison@usbr.gov>

Katrina Harrison
Project Manager
US Bureau of Reclamation
Bay-Delta office
Sacramento

Dear Ms Harrison,

I am writing to express my opposition to efforts by the US Bureau of Reclamation to Maximize Central Valley Project water deliveries, and would like to express my concerns in person at a public meeting in Chico.

Thank you for considering these concerns.

Donald G. Miller, PhD
Department of Biological Sciences
California State University, Chico

Harrison, Katrina <kharrison@usbr.gov>

I am unutterably opposed to the proposal to pump yet more water out from the delta

Ellen Koivisto & Gene Thompson <offstage@earthlink.net> Tue, Jan 9, 2018 at 9:27 PM
To: kharrison@usbr.gov

This is how you kill an estuary, the vital heart of the biosphere of all of northern California. And for what? Money. Money isn't life. Money isn't water. Money is most often theft.

Why is the Bureau of Reclamation pushing this extinction-producing action? Greed isn't good. It is one of the deadly sins for a reason — it kills. The Delta Smelt, the long fin smelt, the Central Valley salmon, the Central Valley steelhead, the Trinity and Klamath rivers salmon and steelhead populations — who will their extinctions benefit? Corporations that grow totally inappropriate crops in inappropriate (and poisonous, all too often) ways to sell overseas.

Qui bono? Not the biosphere. Not the people of CA. Not life on earth, or genetic diversity, or ecosystem resilience.

Just say NO!

Ellen Koivisto
San Francisco

Harrison, Katrina <kharrison@usbr.gov>

Please Hold a Meeting for Public Comment from the Northern Sacramento Valley, in Chico, CA

Mercedes Macías <mercedesamacias@gmail.com> Tue, Jan 9, 2018 at 3:52 PM
To: kharrison@usbr.gov

Katrina Harris,

I am writing to respectfully submit a request that you exercise your authority to encourage a Meeting for Public Comment from the residents of the Northern Sacramento Valley - to be hosted in Chico, CA. This Meeting is in regards to Bureu efforts to maximize Central Valley Project water deliveries to corporate agriculture in the San Joaquin Valley.

Thank you for your time and energy serving your communities as an elected public official.

-- Mercedes

Harrison, Katrina <kharrison@usbr.gov>

Oppose Central Valley Water Proposal

serra wells <serrawells@gmail.com> Tue, Jan 9, 2018 at 10:53 AM
To: "kharrison@usbr.gov" <kharrison@usbr.gov>

Hello Ms. Harrison,

I am writing to let you know that i am opposed to the Bureau efforts to Maximize Central Valley Project water deliveries and urge you to hold a public meeting in Chico, CA where concerns can be heard.

Thank You!

Sarah Wells
Chico, CA

Harrison, Katrina <kharrison@usbr.gov>

Need Public Meeting in Chico

Dale Rudesill <dale@ic.org> Thu, Jan 11, 2018 at 11:23 AM
To: kharrison@usbr.gov

I am opposed to Bureau efforts to Maximize Central Valley Project water deliveries and would like to express your concerns in person at a public meeting in Chico.

RECEIVED
JAN 11 2018

Jerrolyn Hall
996 E. 8th St.
Chico, CA 95928

January 8, 2018

Katrina Harrison, Project Mgr.
Bureau of Reclamation
Bay-Delta Office
801 I Street, Suite 140
Sacramento, CA 95814-2536

Subject: Request for meeting in the Northern Sacramento Valley – Chico, CA

Dear Ms. Harrison:

I am opposed to the Bureau's efforts to maximize Central Valley Project water deliveries and would like to see a public meeting in Chico, CA to discussion the issue.

Thank you,

Jerrolyn Hall
Registered Voter

Harrison, Katrina <kharrison@usbr.gov>

delta tunnels

Joan Kresich <joankresich@gmail.com> Thu, Jan 11, 2018 at 4:39 AM
To: kharrison@usbr.gov

I am firmly opposed to the delta tunnels. This project essentially steals N. CA water to prop up agribusiness in the central valley. Yet we know that agribusiness is a big contributor to global warming and is not sustainable.

These tunnels will cause the extinction of multiple species of fish.

The delta tunnels project needs to be abandoned!

Sincerely,
Joan Kresich

Harrison, Katrina <kharrison@usbr.gov>

North State Water

Sarah Salisbury <66tiachacha@gmail.com> Thu, Jan 11, 2018 at 3:35 PM
To: kharrison@usbr.gov

Ms Harrison~
Regarding the emerging plan to "maximize water supply delivery":
Apparently there are plans afoot to hold public meetings regarding same. However, the farthest north a meeting is to be held is Sacramento. I urge you to hold a meeting in the NORTH state. This, after all, is where the water in question originates. May I suggest Chico as an excellent site for a north state meeting. It is in between the Oroville reservoir and the Shasta reservoir, is easy to get to and has comfortable accommodations for out-of-town participants. Not to mention that there is an actively informed citizenry here with a deep interest in what will become of our area's water.

Please understand that here in the north state, we have real agriculture. This includes timber production, of course, along with rice and almonds and walnuts, cattle ranching and small farms growing a diversity of products. The farming that takes place in the west side of the San Joaquin Valley is unsustainable. This is a place with 6" of rain annually. This is NOT the place to grow nuts and fruits. No. Grow row crops when it's a good year for rain and fallow those fields when it is not. That is what sensible farmers, real farmers, do. As I understand it, these tree crops do not "feed America", but are sent overseas to feed the pocketbooks of those already wealthy enough to buy the vast amounts of water required for their crops. And to buy influence.

Should you be considering supporting transferring even more water to southern California from the north, please know that you will thereby be supporting the impoverishment of many people, of many communities. We live on our ag, our logging, our recreation tourism. This you would steal away. For what? 30% of the water that is transferred is lost to evaporation. The remaining 70% should stay where it belongs, where it will support the people and the resources of half of the great state of California. We all need to live within our means. Our means here in the north depend on our water.

This transferring of north state water to the south is bad business. And bad policy.
Please hold a meeting here. Have a look around. See what will be lost if you persist in supporting the folly of water sales.

Sincerely~
Sarah Salisbury

Harrison, Katrina <kharrison@usbr.gov>

A Farmer view of the past decisions and what I like to see in the future

Steve P Burcham <sburcham@sbcglobal.net> Thu, Jan 11, 2018 at 1:37 PM
To: Kharrison@usbr.gov

Dear: Ms. Harrison
I am writing in response to the Bureau's request for public comment about the operation of the Central Valley Project. The issue is not people over fish or visa-versa. Sound science is absolutely important, and sound science will not come from bureaucrats, agenda-driven environmental groups, lawyers, fellows, or distinguished professors. Real science with accurate data and truthful information should be regarded with utmost importance from the most qualified personnel in America. Any fraudulent activity with data collection or information should be prosecuted to the full extent of the law. In the same regard, predation, introduced species causing sterility, waste-water dumping, and possible excessive releases of water from dams must be considered in declining fish population numbers. This information should be used, confronted, and considered in the future operation of the CVP and SWP.

Environmental groups based in the Bay Area are neglectful, inconsistent, and contradictory in their relentless and successful attempt to send more water to the ocean. This decades-long practice has wasted millions upon millions of acre-feet of water, but it is not water from the Bay Area being sacrificed. Water delivered to the Bay Area from Hetch-Hetchy has been secure, and is never at risk in the same manner as the rest of the population in California.

On an annual average, 25 million acre-feet of water inflows to the Delta. Seventy-six percent of this water goes to the ocean. This percentage greatly increases during wet years when California should be storing for drier periods. Beneficial use of water should be viewed with a common-sense approach. Water is a necessity for all living things. Living things should be defined as a current population, current economies, and current ecosystems. The criminal act of sending millions of acre-feet of water to the ocean on an annual basis in order to restore an ecosystem that is no longer present, must stop. The Sacramento-San Joaquin Bay Delta plays a vital role for millions of people and millions of acres of farmland. Secured delivery of surface supplies of water to South of Delta Agriculture Contractors is not only important to the economy and future of California, but to the entire nation. Hundreds of crops grow in the Central Valley which feed this country, and a secure supply of surface water as contracted, is in fact a matter of national security.

The State government of California and its bureaucratic machine have only one answer under the current leadership. That answer is to manipulate, mismanage, and misinterpret, both law and intended purposes of the infrastructure in California. It is painfully obvious decisions are made with total disregard to the economy and the future of many lives within the Central Valley, most notably anyone south of the Delta. South of Delta storage should be a priority in order to secure a home-grown food source for the United States. While the State of California uses its Prop.1 money for water recycling and bottled water, the federal government should be concerned with real infrastructure to secure this nation. Projects such as the raising of Shasta Dam, expansion of the San Luis Reservoir, expansion of the Los Vaqueros Reservoir, Temperance Flat Dam, and Sites Reservoir must be the focus to protect our nation's breadbasket.

The Endangered Species Act, and all listings threatened or otherwise within the Delta and rivers it drains, should be reviewed. Updates and amendments with factual information should consider harm or hardships which burden people, industry, and economies, and place them as a priority. Policy and law should leave no room for assumptions, and any action taken which may effect delivery of water should be supported by hard, factual data. Infrastructure should be operated as such and pumping numbers prior to 1992 should be used as a guide.

The ability to block deliveries from Shasta because of water temperature in the Sacramento River, negates the original purpose of Shasta's construction. The USBR should not allow any action by the California SWRCB to impede deliveries from Shasta to the CVP. Biological Opinions which affect the delivery of water should be carefully reviewed, updated, or reformed to address our current ecosystem and its inhabitants. Bi Ops and other laws and policies such as the CVPIA are changing our ability to feed our nation. SGMA will contribute to this emergency with intrusive attacks on property rights. The San Joaquin River Settlement is likely to result in the retirement of over 90,000 acres within Friant Division alone while hundreds of thousands of acres are at risk and or currently being retired throughout the west-side of the valley.

Ecosystems change, and our laws and policies should change concurrently to thwart the dangerous practice of wasting resources. CVP Contractors should be protected by the federal government. Contracts are for the delivery of surface water, and the USBR and all related federal agencies should restore contractual agreements to its customers while disallowing the State of California to effect those deliveries. Further, water used in the production of food, fiber, or dairy, should be a top priority second only to health and safety. This should be the case for both CVP and SWP surface

deliveries to agriculture, and should absolutely be viewed and regarded as a national security issue by any federal administration. Environmental use of water should be regarded as a user of water in the same fashion as Agriculture, and Municipal and Industrial users. Environmental water should be metered and responsible agencies held accountable.

One fact we all know is that more environmental law obtained through politics or lawsuits, has resulted in continued decline of certain fish species. Following these procedures would return well over 2.5 million acre-feet of water to its rightful and beneficial users. The theft of this water has ruined local economies, damaged underground aquifers, damaged species and habitat, greatly increased unemployment, and put Americans at risk.
We waste millions of acre-feet of water in hopes of restoring species. In so doing, we are destroying industries, economies, towns, and the lives of people. It is time to restore the future of our country.

Sincerely,
Stephen P Burcham

P.S. I did not write this but it is the what I see and feel
Sent from my iPhone

Harrison, Katrina <kharrison@usbr.gov>

CVP Project - Public Comments

Tom Lindemann <lindemann.tom@gmail.com> Thu, Jan 11, 2018 at 1:57 AM
To: Kharrison@usbr.gov

Dear Ms. Harrison:

After many years of micro managing the Delta and related water systems, the favorite fish of the tree huggers, the Delta smelt, is on the verge of extinction.
This fish has plunged entire cities and their residents into poverty to the point of food lines on a weekly basis. Cities such as Mendota and Firebaugh have taken the brunt of foolish decisions to withhold water from the rich farm lands on the east and west sides of the San Joaquin Valley.

All the while they are starving these farmers from their contracted water, they continue the daily dumping millions of gallons of sewer water from Sacramento and many surrounding cities into the Delta. This dirty little secret gets little play in the press so most people are not even aware that this nitrogen rich waste water is largely responsible for the depletion of species in the Delta.

They spend our tax dollars trucking fish around to and from various locations in the name of conservation and survival of these species. Isn't it odd that these species had thrived for decades before the biologists took over their daily management.

The pumps that provide the life blood water south of the Delta stand silent while many millions of acre feet of pristine mountain water is flushed under the Golden Gate Bridge. There is a balance that can be achieved with a little common sense that would provide the south of Delta folks with adequate water and still offer serious protections for the Delta and its residents - the humans and the fish that reside there.

All the while the attorneys and politicians line their pockets as they continue to exacerbate these problems into never ending lawsuits and foolish public policies.
And they continue to dump millions of acre feet of precious water into the Pacific Ocean resulting in laying waste to cities, industries and human beings.

Please do the right thing to help restore the future of these forgotten entities and people by achieving a fair balance between people and fish. I would hope that these policies lean a little in favor of the humans whose lives are impacted by these policies on a daily basis.

Sincerely,
Tom Lindemann

Tom Lindemann
Lindemann Properties, Inc.
3734 W. Spruce Avenue
Fresno, CA 93711

Harrison, Katrina <kharrison@usbr.gov>

Public Meeting in Chico, CA.

Carolina Flores <elena.c.flores94@gmail.com> Fri, Jan 12, 2018 at 1:24 PM
To: kharrison@usbr.gov
Cc: Dan Bacher <danielbacher@fishsniffer.com>, Lola Acosta <lolaalwv@gmail.com>, Love Jesus <angie.avila@yahoo.com>, Alejandro Cabrera <Acabrera@cityofsacramento.org>, George Acero <gacerolaw@outlook.com>, Taty Aguilera <neptalyaguilera@gmail.com>, Caroline Cabias <carolinecabias@gmail.com>, Olga Cid <olga2top@yahoo.com>, Clara Cid <Claramadre4@gmail.com>, EFREN GUTTIERREZ <Chicano11@comcast.net>, sbobbitt@sacramentofoodbank.org, Mayor Steinberg <MayorSteinberg@cityofsacramento.org>, "Dr. Senon M. Valadez" <senon@saclink.csus.edu>, Phil Serna <sernap@saccounty.net>, Marianna Rivera <Marizapa94@gmail.com>, Rachel Rios <rachelr@lafcc.org>, George Raya <georgeraya@yahoo.com>, theresa riviera <theresariviera2014@gmail.com>, Ramona Landeros <Ramonalanderos@yahoo.com>, ray lee <RLSLCLKS@gmail.com>, ruth ibarra <ibarra_ruth@hotmail.com>, Josephine Talamantez <jstalamantez@gmail.com>, gabby@sacact.org, Eric Guerra <guerra.eric@gmail.com>, Mario Galvan <mario@zsc.org>, Christina Cervantes <christinaacervantes@yahoo.com>

I am requesting that you hold a public meeting in Chico, to give us all an opportunity to give you our concerns regarding your efforts to expand Water deliveries to the Central Valley Agri business.

I am opposed to Bureau efforts to maximize Central Valley Project water deliveries and would like to express my concerns in person at a public meeting in Chico.

In the environment on the health of our water for residents such as I, we view the smelt as the actual symbol of the canaries sent into a mine to alert us of the poisonous gasses. If the smelt are gone, it tells us that there has been a terrible destruction of our water and the food chain that many of us rely on. You must stop any plan or practices to expand water out of Northern CA. and into Central Valley cash crop. This is one sided and does not take into account our future as California residents. We would be facing future droughts with no water back up, and our water would be drained by Central Valley and the rest of the state. This cannot happen and I ask that you stop this practice and leave our water alone to sustain our Sacramento and Northern California population.

Harrison, Katrina <kharrison@usbr.gov>

Delta Water - Why Should we....?

John Rubins <steeliejohn@sbcglobal.net> Fri, Jan 12, 2018 at 11:29 PM
To: kharrison@usbr.gov

Ms. Harrison,

It is counter intuitive to allow the bleeding of Sacramento Delta water going to the south with the evident erosion of local habitat namely the Delta Smelt.

While I have never seen a Delta Smelt I have fished these waters for years. It makes no logical sense to me to continue to send the volume of water we do from the northern parts of California to our southern neighbors. If the water was intended for the citizens daily use I might be able to understand. The problem I have is the distribution of the water to large Agri-Business between the Delta and Southern California. Why do we grow nuts in areas that are virtual deserts without the water? Why do we allow Kern Water District to collect water for sale at a profit when the north sacrifices our water?

It makes no logical sense to me to line the pockets of large agri-business when we export water to the Sothern part of our state. If God had intended crops in areas He would have provided a water source. Guess what, the southern agribusiness has no water source except to deplete our Delta. Our Delta is critical to the loverhood of many people in the SF Bay and north coast in agriculture and fishing.

This whole effort is stupid! It's about power and money. Why should we as people and responsible people at that, allow this diversion to occur? Yes, I do oppose the Tunnels as well. Governor Brown lost the Peripheral Channel, now he is trying the Tunnels without a vote of our citizens. Does this make any logical sense?

No, it does not!

John Rubins

131 Viewmont Ave

Vallejo, CA 94590

707-656-1812

Virus-free. www.avast.com

Harrison, Katrina <kharrison@usbr.gov>

Public Comment on EIR for California Central Valley Water Project

Jean Dakota <jdakota002@comcast.net> Mon, Jan 15, 2018 at 4:43 PM
To: kharrison@usbr.gov

Dear Ms. Harrison, Please see my letter attached.

I strongly oppose the proposed Delta Tunnels and taking more water out of the Delta. The fish are dying and the Delta is on the verge of collapse. What is needed is to decrease the amount of water being diverted to the south. Taking more water out of the Delta is a direct violation of the Delta Reform Act of 2009 which mandates that all future water solutions MUST reduce reliance on the Delta.
Please add my comments to the list for the EIR.
Thank you,
Jean Dakota

Letter on Delta Tunnels to Bureau of Reclamation 01 15 2018.docx
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RECEIVED
JAN 16 2018

Ms Katrina Harrison
Project Manager
Bureau of Relamation, Bay – Delta office
801 I st
Sarcamento CA
95814-2536

1/10/18

This is a response to the EIS being produced by your office on water flows from the Sacramento river delta.

There are ways to enhance to water contributions of the delta without increasing the outflow. Water from the delta flows through exposed channels in a hot area where evaporation is an obvious consequence. The canals should be covered, using solar panels is an obvious way to also increase the useful and cost effectiveness of this approach. Requiring effective water use such as drip irrigation is another way. Analyzing the usefulness of the land is another. Many farms contribute large amounts of undesirable runoff from ground minerals. These lands should not be used for agriculture and should not receive water discounts. Water storage, especially below ground, is also an approach.

The destructiveness of pumping more water from the delta is becoming life threatening. The delta smelt are on the verge of extinction. The last fish count found only 2! With them an entire ecology is at risk. Fisheries up and down the coast rely on the health of the delta as a spawning area. Myriad birds rely on the delta for habitat and food. And many farmers rely on the water, as do the residents of delta towns such as Stockton.

Taking more water out of the Delta is also direct violation of the Delta Reform Act of 2009 which mandates that all future water solutions MUST reduce reliance on the Delta. This is truly a crisis and I hope you will respond appropriately

Thank you for your attention,

Janice Hutchinson
1726 Parker st
Berkeley
Ca 94703

Harrison, Katrina <kharrison@usbr.gov>

(no subject)

Mitzi Frank <mitzif59@yahoo.com> Tue, Jan 16, 2018 at 3:45 PM
Reply-To: Mitzi Frank <mitzif59@yahoo.com>
To: "kharrison@usbr.gov" <kharrison@usbr.gov>

‣ The people of California want state and federal government entities to invest time and money into researching how to improve management of the Delta cross channel and how to create non-physical barriers that direct fish back to Suisun Marsh, instead of the continued pursuit of the costly Delta Tunnels. The tunnels will NOT save the Delta smelt, and if no other solutions are pursued, we will lose this tenacious fish forever.

‣ Taking more water out of the Delta is a direct violation of the Delta Reform Act of 2009 which mandates that all future water solutions MUST reduce reliance on the Delta.

‣ We refuse to be complacent in the extinction of Delta smelt which could be the beginning of a collapsing food chain for the Delta, the San Francisco Bay-Delta estuary, and coastal fisheries at large. Protecting the Delta smelt does not mean sacrificing the needs of humans—it is a necessary act to maintain the ecosystems that shape our livelihoods.

‣ If the Delta smelt are gone, it will be that much easier for tunnels proponents to build CA WaterFix—a system that when operated will usher in the extinction of Delta smelt if they are not completely wiped out during the project's construction.

Harrison, Katrina <kharrison@usbr.gov>

No tunnels

Jon Hamilton <yamahauler300@gmail.com> Wed, Jan 17, 2018 at 8:30 PM
To: kharrison@usbr.gov

My house which was built in 1870 and 800 acre farm would be flooded if the tunnels are built. You are already pumping out too much water. It's sad what the politicians are doing to the this great state. Taxed to death, over budget for the stupid train, wasting money for illegal aliens. When will the spending stop.
Thank you, Jon Hamilton

Harrison, Katrina <kharrison@usbr.gov>

My comments regarding the Notice to prepare a Draft EIS , Revisions to the Coordinated long-term operation of the CVP and SWP

Felix <febesmith@sbcglobal.net> Thu, Jan 18, 2018 at 11:59 AM
Reply-To: Felix <febesmith@sbcglobal.net>
To: "kharrison@usbr.gov" <kharrison@usbr.gov>
Cc: Felix Smith <febesmith@sbcglobal.net>

The covering letter follows. An attachment to the covering letter is attached, as well as the covering letter.

Please let me know when you receive this material.

January 18, 2018

Katrina Harrison - Project Manager
Bureau of Reclamation -
Bay Delta Office
801 I Street, Suite 140
Sacramento, CA 95814-2536

Dear Ms. Harrison:

This responds to a public notice (Federal Reg Vol,83, No. 249) of the intent of the Bureau of Reclamation to prepare an environmental impact statement, “Revisions to the Coordinated Long-term Operation of the Central Valley Project and the State Water Project, and Related Facilities.”

I as a member of the public have an ownership interest in the State’s waters, fish and wildlife resources, associated habitats and environmental amenities. Please include these comments into the written record of this project.

The first listed action is “Maximize water supply delivery, consistent with applicable law, contracts, and agreements, considering new and / or modified storage and export facilities.” My Webster’s dictionary defines “maximize” as “increase to the highest possible degree.”

The long standing policy repeated by Secretary of the Interior Julius Krug, Oct 12, 1948: “Let me state, clearly and finally, the Interior Department is fully and completely committed to the policy that no water which is needed in the Sacramento Valley will be sent out of it.” He then added, “There is no intent on the part of the Bureau of Reclamation to ever divert from the Sacramento Valley a single acre-foot of water that might be used in the Valley now or later.” There is a long history of other Department of the Interior and Bureau of Reclamation officials making this and other similar statements.

In light of the facts that:
The State of California entered the Union on September 9,1850 on an equal footing with the original 13 states. One of those laws, the Public Trust Doctrine provides that certain resources belong to the people and are to be administered by the state for the benefit of the people.

The Public Trust Doctrine is a background principle of property law that predates today’s environmental laws and applies to every water right that impacts trust resources and may, in fact, define or limit the very nature of the right to put water to beneficial use. In California the public trust doctrine can limit private water rights to protect inherent public trust values

The California court has stated "It is laid down by our law writers that the right of property in water is usufructuary and consists not so much of the fluid itself as the advantage of its use." Put in the context of a water right – a user of water must respect the rights and interests of others, including the peoples' fish property, and is not to alter the integrity of that water as a water supply or an ecosystem. Private rights in water are usufruct, a use right.

Also given that:

There is a perched water table involving about 379,000 acres on the west side of the San Joaquin Valley;

Salt has impacted 780,000 acres on the west side of the San Joaquin Valley;
California's rivers and streams are grossly over appropriated and the Bureau of Reclamation holds the largest share of those water rights;

The Delta smelt are nearing extinction, the winter and spring runs of Chinook salmon and Central Valley steelhead trout, green sturgeon, and the Longfin smelt are listed under Federal or State lists of Endangered or Threatened Species, are all struggling to survive in the face of habitat uncertainty and heavy exports;
.
The Bureau of the Budget in 1953, commenting on legislation to reauthorize the CVP (Act of August 27, 1954) stated, "that the costs for correcting damages to fish and wildlife resources caused by the building of projects should be treated as part of the construction costs and allocated to the various purposes in the same manner as other damages, including relocations". The meaning of this quote is that the people's water, fish and wildlife resources (the public trust) impacted by such projects must be protected and damages that are incurred are to be corrected as a project cost and that such costs are to be borne by the project users and beneficiaries;

The Central Valley Project Improvement Act (CVPIA) of 1992 amended previous CVP authorizations to include fish and wildlife protection, restoration, and mitigation as project purposes having equal priority with irrigation and domestic water supply, and fish and wildlife enhancement having an equal priority with power generation. Mitigation for fish and wildlife losses incurred by construction, operation and maintenance shall be based on the replacement of ecologically equivalent habitat.

Given that much has to be accomplished to fulfill the purposes of the CVPIA of 1992.

And given that Department of the Interior and to Bureau of Reclamation representatives have stated that it is their intent to live by the limitation of California Water Code Sections 11460 -11463. In this effort, the Bureau has attempted to estimate the present and future water needs for each watershed and have said they intend to divert no water from any watershed which will or may be needed for beneficial uses in the future within that watershed.

I request the Bureau of Reclamation, as a part of the preparation of an environmental impact statement regarding the, "Revisions to the Coordinated Long-term Operation of the Central Valley

Project and the State Water Project, and Related Facilities", under take the following actions relative to this environmental impact statement project.

Action: The Bureau of Reclamation should identify the water needs in the broadest context for each of the watersheds or sub-basins of the Sacramento Valley and Delta Region. This includes not only the municipal and industrial water needs, but the instream flows (including water quality) needed to protect anadromous fishes, other public trust resources, uses and values of each watershed or sub-basin.

Action: The Bureau of Reclamation should identify the rivers and streams and associated watersheds it believes have "excess" or "surplus" water above their identified needs.

Action: What is the Bureau of Reclamation definition of "excess" or "surplus water" in light of the broadened definition of Public Trust purposes, uses and interests protected in light of the Marks court definition and potential irrigation, municipal water demands in the Sacramento Valley and Delta watersheds.

Action: The Bureau of Reclamation should lay out a detail plan with disposal mechanisms, locations and cost estimates of how it and its contractors are going to handle the drainage from the lands irrigated that is surely contain selenium, boron and other salts that will flow / drain from these lands.

Action: The Bureau of Reclamation should lay out a detailed plan of how it proposes to protect the fish and wildlife resources and their habitats affected by the operation of reservoirs it operates or controls to maximize the sale or use of such "excess" or "surplus" water.

The Documentation and Background Supporting material attached to this letter is an integral part of this cover letter and should be treated accordingly.
Thank you for the opportunity to present these comments.
Sincerely.

Felix E. Smith
4720 Talus Way
Carmichael, CA 95608

cc:interested parties

Attachment.
Documentation and Background Material is an integral part of this letter of January 18, 2018, to Katrina Harrison, Project Manager – Bureau of Reclamation, for preparing the environmental impact statement, “Revisions to the Coordinated Long-term Operation of the Central Valley Project and the State Water Project, and Related Facilities.” This material is an integral part of my cover letter and should be treated accordingly.

**Katrina HarrisonProManUSBR418Final

Katrina HarrisonProManUSBR118Final.doc
165K

Harrison, Katrina <kharrison@usbr.gov>

Saving the Delta

JOHN KIRK <elmogrot@astound.net> Thu, Jan 18, 2018 at 8:51 AM
To: kharrison@usbr.gov

I would like to take this opportunity to loudly protest the plans to put the delta at risk by "maximizing the export of water from the delta. It is not only the delta smelt that are at risk, it is the delt itself. The tunnels project with one or two tunnels is nothing more than a corrupt way to send more cheap water to the wealthy agribusinesses in the southern part of the state. I am sure that a properly done environmental analysis of the project would expose its many flaws.

John Kirk
272 Nevada St.
Redwood City, CA 94062
650-366-9783
elmogrot@astound.net

Harrison, Katrina <kharrison@usbr.gov>

Delta must be saved

Michael Wauschek techno shaman pyro minion <michaelwauschek@gmail.com> Thu, Jan 18, 2018 at 2:24 AM
To: kharrison@usbr.gov

The delta is one of few remaining area bodies of oven water that we still have in California. We must protect it without how would get that clean water system. The delta will not just benefit us as the people but it will also benefits are wildlife, all of the arigcator land, it will even help are mother earth she is the one of all that need the most caring but as well help. You not see the benefits at but in time all life will be great in the delta. Water is life standing rock is everywhere

RECEIVED
JAN 18 2018

To: Katrina Harrison
Project Manager
Bureau of Reclamation

January 18 2018

From: Roger Thibault
1408 Lakewood Dr.
West Sacramento, Ca. 95691

Dear Ms. Harrison;

I am writing you in regards to the Federal plan to ship more water from the Delta to points south. I cannot object more strenuously to any plan that further takes water from its "natural" healthy purpose of flushing out the Delta and Bay for the sake of making more profits for corporate agriculture. As I am sure you are aware this natural cycle has been established by nature over hundreds of thousands of years and altering it will cause even more destruction then it already has.

I grew up in the Delta in the late fifties early sixties and the fish population was 17 million. Its now 4 million. So in my lifetime I have seen two thirds of our natural fisheries disappear. The largest culprit is the lack of sufficient water to maintain the natural cycle which provides the food chain for our fisheries. To destroy the Delta, which more pumping will surely do, is a crime against California and nature. We are not putting an end to hunger by growing nut trees in a desert and selling them at $7.oo a bag! This is about putting profits before our States natural health.

Kevin McCarthy is ingratiating himself with Trump in order to get more water to his San Joaquin valley corporate agriculture backers. He wants to get re-elected. He could care less about the environmental health of the Delta and San Francisco bay. This is the kind of political short sighted mentality that has cost us two thirds of our fisheries already.

The people of California voted down the peripheral canal. The twin tunnels are nothing but the peripheral canal with dirt on top. The Governor has by his deeds shown he thinks he knows more then the people and could care less about our democratic system, so he and his big buck backers are now shoving down the throat of the people what they rejected. So if elected officials are more concerned with getting re-elected or as in Brown's case seeing his fathers flawed plan put into practice, who stands up for right and the people's voice?

Ms. Harrison I think the answer is you. You know pumping more water will mean the extinction of the Delta Smelt and the further degradation of the Delta and Bay. Allowing more water to be pumped now is setting the table for the environmental disaster that is sure to follow. Big Agriculture would love to see the Delta Smelt go extinct so they can then say there is nothing to harm from their over pumping. As I have said we have already lost two thirds of our historic population of fish in the Delta. Please do all in your power to prevent this tragic wholesale destruction of the largest river delta on the west coast of the America's.

Sincerely

Roger Thibault

Harrison, Katrina <kharrison@usbr.gov>

Opposed to maximizing CVP Deliveries

Bill Michel <bmichel@alum.pomona.edu> Fri, Jan 19, 2018 at 8:28 PM
To: kharrison@usbr.gov

Taxpayer subsidies promote poor water use decisions, and damage the Delta. I am opposed to attempts to maximize deliveries through the CVP.

Yours truly,

Bill Michel
337 Lowell St.
Redwood City, CA

Harrison, Katrina <kharrison@usbr.gov>

STOP THE WATER GRAB

Clare M. Spensley <claresells@yahoo.com> Wed, Jan 17, 2018 at 6:38 AM
Reply-To: "Clare M. Spensley" <claresells@yahoo.com>
To: "kharrison@usbr.gov" <kharrison@usbr.gov>

Katrina: Please do not let the Federal Government drain the Sacramento Delta Ecosystem buy allowing more pumping of water to large land barons and vast desserts meant to be dry. I am a third generation Delta boater and land owner. Make the rest of CALIFORNIA recycle, reduce and use water wisely---in other parts of the world and the USA they only use regeneration methods to create water, such as desalinization and grey water for plants . Please register this email as in opposition to the increased pumping of water from the Delta!!!

The Trump Administration's recent announcement to increase Delta exports to Central Valley farmers poses an imminent threat to the emblematic California fish species under the watch of Governor Brown. With only two Delta smelt identified in the last fish survey, state and federal agencies need to focus time, money, and energy on restoring smelt populations instead of turning up the pumps.

If the Delta smelt are gone, it will be that much easier for tunnels proponents to build **CA WaterFix**—a system that when operated will usher in the extinction of Delta smelt if they are not completely wiped out during the project's construction. The Delta smelt is our small but mighty canary in the coal mine; it is an indicator of the health of the Delta ecosystem. If it goes, the future impacts to the health of humans and to other Delta fish and wildlife would be devastating.

Clare M. Spensley--

Virus-free. www.avg.com

Harrison, Katrina <kharrison@usbr.gov>

Any Revisions to the Coordinated Long-term operation of the Central Valley Project and State Water Project, and Related Facilities MUST be science-based!

Ellen Koivisto & Gene Thompson <offstage@earthlink.net> Thu, Jan 18, 2018 at 9:28 PM
To: kharrison@usbr.gov

Any Revisions to the Coordinated Long-term operation of the Central Valley Project and State Water Project, and Related Facilities MUST be science-based!

1. Global climate chaos means more drought and hotter weather in CA.
2. Ecosystem destruction in the north of CA due to water diversions will increase fire sizes and fire risk, native species destruction, and desertification.
3. This will all result in substantially LESS water period.
4. Which means less water for the Central Valley and it will also become desert (before flooding due to ocean level rise as all our planet's ice melts.)

And, yes, this is all science-based.

So don't destroy CA for temporary political gain. This is the definition of a Pyrrhic victory.

Ellen Koivisto

Harrison, Katrina <kharrison@usbr.gov>

History question regarding cvp and swp water rights

Carol & James Verboon <vboonfrms@sti.net> Fri, Jan 12, 2018 at 8:53 AM
To: Kharrison@usbr.gov
Cc: vboonfrms@sti.net

Dear Katrina,

Congratulations on your appointment. I have one question for you, why with California's "first in time,first in right" water law has the cvp never set a baseline to protect its water deliveries from reallocation? Around 1980 the Bay Delta health was good and the export pumps were pumping much more water than today. A quick investigation will show the pumps are not where the water went.

Thank you and again congratulations.
Jim Verboon (559)923-4459

Harrison, Katrina <kharrison@usbr.gov>

Re: Delta water

John Anagnos <jwanagnos@gmail.com> Fri, Jan 19, 2018 at 12:48 PM
To: kharrison@usbr.gov

On Jan 19, 2018 12:43 PM, "John Anagnos" <jwanagnos@gmail.com> wrote:

> As a 73 year citizen of the SF Bay Area, I truly am disgusted with our elected officials taking water from the Delta and and transporting it, supposedly south to the L.A. basin for there needs. The water districts distributation to the farmers of the central valley, and charging fees, has been nothing but a failure.
>
> My opinion of this whole boondoggle, is it is a royal farce, and since the taxpayers paid for "Desalination" plants in the L.A. area once before, and were the plants were never utilized, it's time the L.A. water district did something that was positive, and stop raiding the Bay Area for their own use and profit!
>
> I am of the opinion that if they turn the Bay, into a cesspool, as it once was, it's time they look for other options to solve their problems, without causing impacts, and ecological damage on the northern portions of the state.
>
> Unfortunately the presesnt leadership, doesn't have the best interest of the citizenry of California.
>
> John W. Anagnos
> Resident of Contra Costa County

Harrison, Katrina <kharrison@usbr.gov>

Add Folsom water to Lower San Joaquin River Delta for export, environment and power too!

Joseph_Rizzi@sbcglobal.net <Joseph_Rizzi@sbcglobal.net> Thu, Jan 18, 2018 at 5:12 PM
To: kharrison@usbr.gov

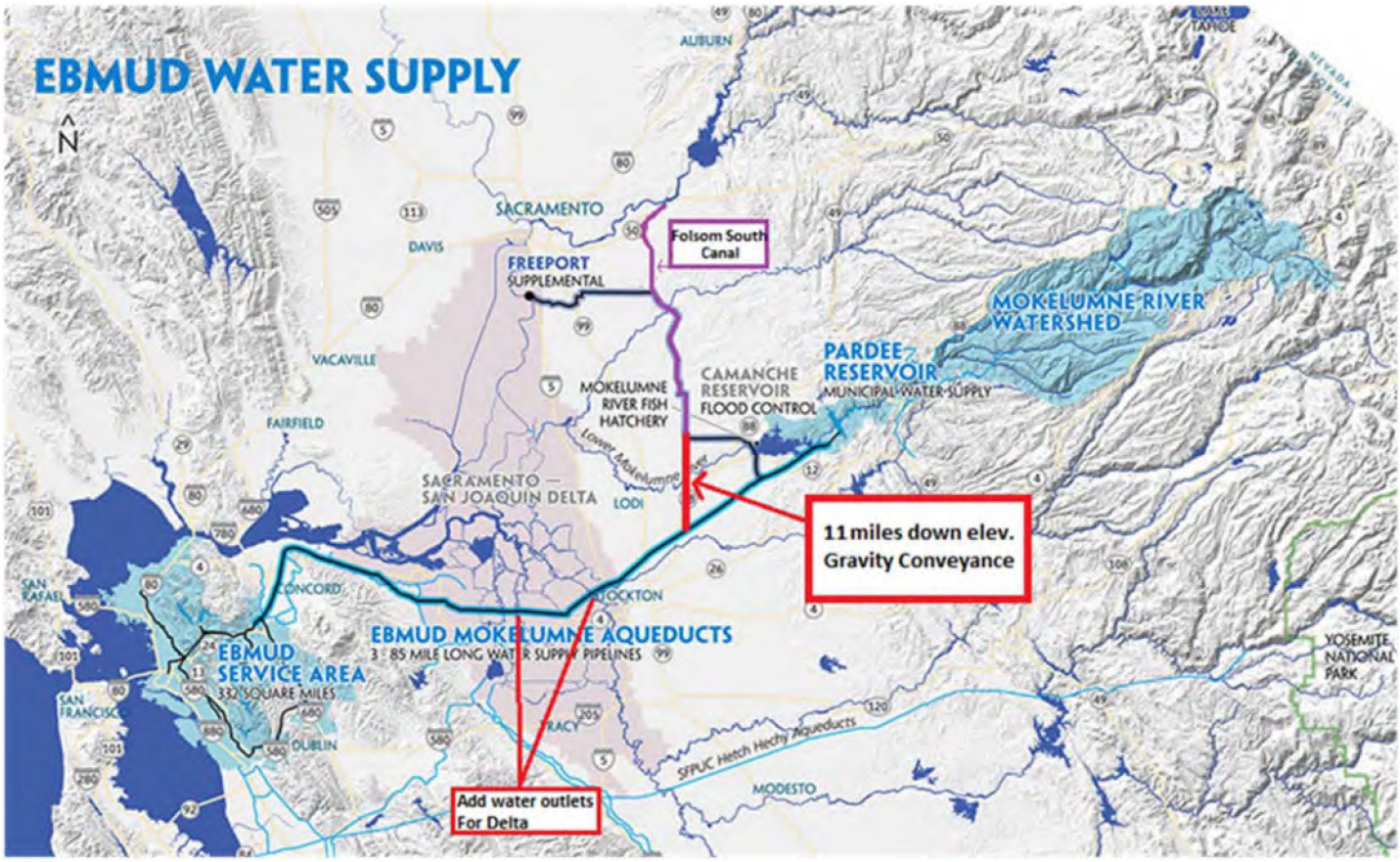
The American River does not have the storage on it to hold back the water, so the Folsom Dam spills over month after month.

Why not connect to the Folsom South Canal via Freeport pipeline extension ***10.7 miles*** south to connect to the EBMUD aqueducts directly with only gravity conveyance?

Folsom South Canal has a capacity of 3,500 Cubic feet per second which can deliver 1,517,340 gallons per minute or 6,704 Acre feet a day, while Folsom dam is letting out water.

Mokelumne Aqueduct only has 700 CFS capacity but it can produce electricity as the water is let out into the Delta either at Stockton or near Holt in the Delta.

This can be a great win for the fish, environment, fresher water in the south Delta and added hydro electric (Lucid Pipe) power too!!!



http://www.ebmud.com/water-and-drought/about-your-water/water-supply/ebmud-and-delta/

Clean up the water by mixing in more fresh water where it is needed.

More details available upon request.

Thanks for considering this option to add water for export, help salinity issues in the south Delta and San Joaquin while adding power too!

LucidPipe http://www.lucidenergy.com/ ← Web site

LucidPipe simply replaces a stretch of existing gravity-fed conventional pipeline, that's used for transporting potable water. As the water flows through, it spins four 42-inch (107-cm) turbines, each one of which is hooked up to a generator on the outside of the pipe. The presence of the turbines reportedly doesn't slow the water's flow rate significantly, so there's virtually no impact on pipeline efficiency.

The 200-kW Portland system was privately financed by Harbourton Alternative Energy.

**** LucidPipe systems can be deployed 3-4 turbine diameters apart, so up to four LucidPipe units can be installed in a standard 40-foot section of pipe. One mile of 42" diameter pipeline could produce as much as 3 megawatts or more of electricity. Sizes of pipes (24" , 42" , 60") Roughly 50 psi***

Joseph Rizzi -- Cel: 707-208-4508 -- Email: Joseph_Rizzi@sbcglobal.net

Harrison, Katrina <kharrison@usbr.gov>

Tunnel...s

play@kiteisland.com <play@kiteisland.com> Sun, Jan 21, 2018 at 3:08 PM

No tunnel or 2.
The delta & Pacific coast fishery is more important than a water grab by massive corporations.
Scott Nelson
Bethel Island, CA

Harrison, Katrina <kharrison@usbr.gov>

Re: "Maximize CV Project deliveries

Bill Ryan <acorn_3@comcast.net> Mon, Jan 22, 2018 at 4:22 PM
To: kharrison@usbr.gov

Hi Katrina: We speak out strongly against any tunnel system (single or twin) under the California Delta to send additional water south to Wall Street farmers – and at a discount to the real price of water.

*There are no valid arguments for taking our water – Northern California's water – and sending it south.

*That would do irreparable harm to hundreds, if not thousands, of farmers, fishermen and their infrastructure partners. They have built a living and made a living in the Delta over hundreds of years. To just take the key item to that history away – and just say "Sorry" is unimaginable – and wrong.

*A "tunnels" proposal failed years ago – because the voters smelled a sell-out.

*This present proposal smells even worse, illegal governmental collusion, lies about the cost, lies about who was willing to pay – and who would pay, missed dates for reports and deadlines before any approvals could be considered shows the project to be poorly managed – if at all.

*Don't believe the price tag being floated around. Final costs will be at least double – as proven by other recent fiascos – like the Bay Bridge.

*Don't believe that the operators can build this project on time – and operate effectively. Just look at the sorry tale of the Oroville Dam for proof.

*

Do not send MORE of our water south without insisting that farmers there take PRIOR, specified, proven steps to conserve specific quantities of water – measured for 5 years.

*Please resist "Politics" as a reason to approve this terrible idea. I realize we seem to ask for a lot – but these are prudent steps that might lead to a project that can be fair and useful.

Thanks, Bill Ryan

Harrison, Katrina <kharrison@usbr.gov>

Delta Tunnels

Bill Sloss <sloco9@att.net> Mon, Jan 22, 2018 at 1:06 PM
To: kharrison@usbr.gov

Please cease on the Delta Tunnels project. It way over budget, will kill the fishery, and ruin the wetlands.

This is a Gov Brown legacy project that will hurt California.

Bill Sloss
sloco9@att.net

Harrison, Katrina <kharrison@usbr.gov>

opposition to Delta Tunnels

daniel witte <boatboy@pacbell.net> Mon, Jan 22, 2018 at 1:45 PM
To: kharrison@usbr.gov

Dear Katrina,
My name is Daniel Witte and I strongly oppose the Delta Tunnels plan for many reasons.
The Delta Tunnels do not generate additional water for California. All they do is take existing water and move it to another location while harming the environment in the process. There are many better solutions to solving California's water problems such as desalination which would actually generate more water for the state. Another solution is water conservation.
Building the Delta Tunnels will severely decrease the quality of Northern California's water. As of now, Northern California receives its water from both the Sacramento and Tan Joaquin Rivers simultaneously. If the tunnels are in place, the Sacramento River will be allocated for the tunnels, leaving Northern California with just the San Joaquin River which is much smaller and more polluted. As part of the California Water Act, the law requires people to receive high quality water. If Northern California is receiving water from the San Joaquin River alone, then the water will be low quality.

The Delta Tunnels will devastate the commercial salmon industry which generates $250000000000 per year. The largest salmon run on the West coast passes through the California delta to reach their spawning grounds. If the tunnels are built, there will be inadequate fresh water in the Delta for the salmon. If the salmon are not able to reach their spawning grounds and reproduce, there will be no fish for the commercial fishermen to catch. If there are no fish, then the commercial fishermen will not get any money.

The tunnels will cost at least $17000000000 to build. All the money used for the tunnels will come out of our taxes. It would be much cheaper to repair and maintain the Delta levees to prevent dangerous flooding in Delta communities as the result of an earthquake. In fact, repairing and maintaining the Delta levies would only cost $4000000 per year compared to the $17000000000 cost of the tunnels.
Lastly, the Delta Tunnels will negatively impact Delta farmers. If the Delta Tunnels are built, salt water from the Bay will intrude farther up into the Delta because there will be less fresh water flowing down to keep it out. The farmers in the Delta cannot irrigate with salt water because it would kill their crops. If the farmers cannot grow their crops, they cannot make any money. In fact, the majority of California's vegetable come from Delta farms.

Over all, please take my comments and concerns into consideration and stop any or permitting for the Delta Tunnels.
Sincerely,
Daniel
6727 Sunnyslop Avenue Castro Valley California 94552

Harrison, Katrina <kharrison@usbr.gov>

Comments on Reclamation Bureau Notice of Intent Re Preparation of NEPA DEIR on Revisions to Coordinated Long-Term CVP-SWP Operations

Paul Kibel <pkibel@ggu.edu> Mon, Jan 22, 2018 at 1:43 PM
To: "kharrison@usbr.gov" <kharrison@usbr.gov>

To: Katrina Harrison, Project Manager, Bureau of Reclamation-Bay Delta Office

Dear Ms. Harrison:

In response to the above-reference Notice, I have attached a forthcoming law review article as comments on the proposed preparation of a NEPA DEIR to evaluate modifications to the operation of the federal Central Valley Project (CVP) and the State of California's State Water Project (SWP). The article, which will be published in Spring 2018 in the William and Mary Environmental Law & Policy Review, is titled***: California Rushes In – Keeping Water Instream for Fisheries Without Federal Law***. Among other things, the article discusses how California's commercial salmon fishery sector is dependent on there being sufficient instream flow to support salmon, and how there are sources of California state water law to maintain such instream flows for fisheries that are independent of federal water law.

As set forth in the Notice, it appears the modifications proposed in the Notice are intended to reduce the amount of water left instream and to increase the amount of water diverted out-of-stream. As such, the matters discussed in the attached article may be pertinent to an evaluation of the proposed modifications to CVP-SWP operation set forth in the Notice.

Thank you.

Paul Stanton Kibel, Professor
Golden Gate University School of Law
536 Mission Street
San Francisco, California 94105-2968
phone: 415.442.6685
email: pkibel@ggu.edu

http://works.bepress.com/paul_kibel/

Center on Urban Environmental Law (CUEL) www.ggucuel.org

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Keeping Water Instream Without Federal law.pdf

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RECEIVED
JAN 23 2018

18 Jan 18

I see by the local newspaper that the CVP thinks they are going to squeeze more water out of Trinity County. The facts are that Trinity County is already being sucked dry by the Marijuana growers & poisoning what little might trickle out. There is no more steelhead trout or any thing else, there isn't enough water for us NON-growers to even water a fruit tree or anything else. The decision has been made: marijuana & Nothing else. Forget about getting any water from here.

C. Munn Box 1331 Hayfork, CA 96041

Harrison, Katrina <kharrison@usbr.gov>

PUBLIC COMMENT--Trump Admin Plans to Maximize Delta Exports

Fred Weidmann <fredweidmann@aol.com> Mon, Jan 22, 2018 at 5:38 PM
To: kharrison@usbr.gov

Katrina Harrison, Project manager
Bureau of Reclamation,
Bay-Delta Office
801 I Street, Suite 140
Sacramento CA 95814-2536

Dear Ms. Harrison,

Thanks to you and all at the Bureau of Reclamation for your efforts on behalf of effective stewardship of our beautiful, wonderful, unique, and life-giving Delta resource. No matter all the (sometimes) conflicting needs of Californians, I hope we can all agree that losing our Delta would be devastating to our lifestyle AND more crucially to life itself. It is an ecosystem and a life-giving and life-sustaining system we cannot lose. We play with its health a high cost to our health. We must protect it.

The Trump Administration's recent announcement to increase Delta exports to Central Valley farmers poses an real and imminent threat to the Delta system in general and to the emblematic California fish species under the watch of Governor Brown. With only two Delta smelt identified in the last fish survey, state and federal agencies need to focus time, money, and energy on restoring smelt populations instead of turning up the pumps.

If the Delta smelt are gone, it will be that much easier for tunnels proponents to build CA WaterFix, which when operated would usher in the extinction of Delta smelt if they are not completely wiped out during the project's construction. Make no mistake--the Delta smelt is our small but mighty canary in the coal mine; it is an indicator of the health of the Delta ecosystem. If it goes, the future impacts to the health of humans and to other Delta fish and wildlife would be devastating.

I appreciate all the care and attention that you and your colleagues give to this matter and for your efforts to provide for the ongoing, sustainable Delta systems that support us all.

Thank you.

Sincerely,

Rev. Dr. Frederick W. Weidmann

fredweidmann@aol.com

Harrison, Katrina <kharrison@usbr.gov>

request additional information regarding USBR plan to maximize diversions from the Sacramento River Watershed

sunshine@snugharbor.net <sunshine@snugharbor.net> Tue, Jan 23, 2018 at 9:11 AM
To: kharrison@usbr.gov

To Katrina Harrison, USBR, DOI and President Trump,

I am writing to ask for USBR to provide more clear notice and many more meetings to discuss increasing diversions from the Sacramento River Watershed to other areas of the state. The notice talked about Delta exports, which have not been truthfully disclosed since 2005, and I do not believe anyone can make informed good decisions without knowing the actual flow and diversion numbers. The Federal Register notice talks about maximizing diversions but I could not find any link to provide information on how much is being diverted by USBR right now.
https://www.federalregister.gov/documents/2017/12/29/2017-28215/notice-of-intent-to-prepare-a-draft-environmental-impact-statement-revisions-to-the-coordinated
How is a concerned citizen supposed to provide meaningful comment if USBR does not provide sufficient information even in the notice?

I happen to own a business on one of the natural waterways of the North Delta, and I can provide details of how the Delta in this area is being damaged by excessive exports since 2007 and later. Low flows cause increase in non-native water weeds which result in clogging once-navigable waterways. The water weeds cause the fresh water to get warmer than would be natural, which degrades the aquatic environment for the migrating salmon. On Steamboat Slough, sometimes referred to as "Mainstem" by USACE, water temperatures have consistently gone above 72 degrees F in summer and fall months, which causes migrating salmon coming to the Sacramento River to spawn, to die prior to spanning. This is one of several reasons the native salmon species of the Sacramento River are going extinct.

More importantly, the impacts to humans in the area can be measured by looking at the decline in water quality in the local drinking water wells. The Delta drinking water aquifer is hydro-geologically vulnerable in the areas of Sacramento River, Sutter Slough, Miner's Slough and Steamboat Slough and around Ryer and Grand Islands. Diverting more Sacramento River water away from the North Delta has already resulted in degradation of our drinking water aquifer and surface water in summer and fall months.

You are proposing to take the fresh drinking water from NorCal and Delta farmers, families and businesses in order to send the water to Pelosi's farming family in lower Central Valley? Or to Governor Brown's oil-industry friends in Kern County? Or to Feinstein's husband for more golf and housing in SoCal? Is President Trump is supportive of this?

Please do not cause further destruction than what we have seen already here in the Delta. If you are going to do any studies, talk to the DELTA people who will tell you what is really going on. DWR has spent years and millions of dollars publishing glossy-paged false Delta history, intricate computer modeling based upon false baseline data, and has been silent in reporting ongoing impacts. Please protect the Delta from DWR and the other California Water Contractors who only see gold bricks "wasting" out to the SF Bay, which was an expression one of the Water Contractors said to me.

Please base decisions on facts. Please also consider FIRST fixing the aging infrastructure like the tunnels that broke and drained the reservoirs above Santa Barbara. DOI/USBR built some of the water tunnels during the time of the "new deal" and it is time to update and replace to avoid further risk to lives.

Another suggestion for water security: The California aqueducts are open channels that are at risk. Not just from subsidence caused by withdrawal of oil, natural gas and water below those aqueducts, but also from open air evaporation and risk of contamination or worse. I suggest that the aqueducts be enclosed in tunnels or at least covered with solar panels to generate the energy to move the water south. Put a tunnel through the mountains of the grapevine, so the water does not have to be lifted so high, so that the electricity can be saved and used for other purposes, or those dams made for hydroelectric power can be removed to allow free flows for salmon migration. The other benefit of covering or tunneling of the California aqueduct system is that there would not be loss of 25-50% of the water to evaptranspiration or bootleg diversions.

There is no doubt that California needs to do something very different when it comes to water management. Perhaps splitting the state into two primary water districts, like CalTrans is split in two, and management of the primary water

districts is done by different people so that NorCal can have a say in how the liquid gold of NorCal is used. It really is unfair to drain the Sacramento River watershed to give benefit to lower Central Valley farmers, who package it all up and ship to China, according to news sources.

I am a Delta business and land owner and I can understand that water needs to be sent to the cities in SoCal. That is fair. But to take action that destroys our lands and businesses and values to give the benefit to the cronies of Feinstein, Boxer, Pelosi and Brown is just plain wrong. If USBR planners want to understand the truth about what has been happening in the Delta, and are willing to take the time to go for a boat ride to see it from the water, I would be happy to provide that boat ride and truth tour.

Nicole S. Suard, Esq. Managing Member, Snug Harbor Resorts, LLC

Harrison, Katrina <kharrison@usbr.gov>

Scoping Comments on "Revisions to the Coordinated Long-term Operation of the Central Valley Project and State Water Project, and Related Facilities"

John Livingston <Livingstonjohn@att.net> Wed, Jan 24, 2018 at 12:15 PM
To: "kharrison@usbr.gov" <kharrison@usbr.gov>

The proposed EIS has a pre-established goal of increasing water deliveries to the San Joaquin agricultural lands. When will the AG community realize that the health of the Delta and sharing of the water with deliveries to San Francisco Bay are at least equal to any AG water deliveries. By exporting large percentages of crops grown in California to foreign countries we are truly exporting our water as well. This is done solely to maximize profits for the AG industry and not to Feed America. This EIS should not be developed because California is in the midst of a tremendous water war with the Delta tunnels and south bound increases already contemplated. We do not need any further interference from Washington with respect to our water. Kill the project.

John Livingston

2378 Waldon Street

Redding, CA 96001

Sent from Mail for Windows 10

Harrison, Katrina <kharrison@usbr.gov>

Comments on the NOI to Prepare an EIS

Karen Mann <Karen@mannappraisal.com> Wed, Jan 24, 2018 at 8:55 PM
To: "kharrison@usbr.gov" <kharrison@usbr.gov>

Please let our President Trump know that many of us in the Delta Region are avid supporters of Donald J. Trump!!!! But before he makes a decision to help Southern California…..he really needs to check in with us who live in Northern California…he can call me personally…Thankyou

Karen J. Mann, ASA, SRA – Certified General Appraiser

Mann & Associates – Real Property & Expert Witness Valuation

14850 Highway 4 #A326, Discovery Bay CA 94505

925.513.3231

510.790.2345 East Bay

925.513.8465 Fax

www.mannappraisal.com

Harrison, Katrina <kharrison@usbr.gov>

Oppose increasing Delta drawdown

Katherine Knecht <katt.knecht@gmail.com> Wed, Jan 24, 2018 at 10:59 AM
To: kharrison@usbr.gov

Hi,

I read that the BLM is taking public comments for an increase in freshwater draw down from the Sacramento River delta to be exported to the Central Valley. I oppose any increase in removal of fresh water from the Delta due to impacts on the ecology of the Delta and downstream SF Bay. As a resident of the Bay Area and a Fisheries ecologist, I know that exporting fresh water from the Sacramento River has increased salinity in our Bay Estuary and caused the collapse of multiple fisheries in addition to saltwater encroachment in our farm lands.

Thanks,
Katt

(415) 497 7125

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JAN 24 2018

January 21, 2018

Ms. Katrina Harrison, Project Manager
Bureau of Reclamation, Bay-Delta Office
801 I Street, Suite 140
Sacramento, CA 95814-2536

Re: **Opposition to Increased Water Exports**

Dear Ms. Harrison:

I am opposed to increasing water exports through the Central Valley Project. There are many reasons for my opposition.

The Sacramento-San Joaquin Delta and the decline of its ecosystem have been studied for decades. The health of the Delta is in jeopardy for many reasons and would be exacerbated if more water is exported before it can flow through the Delta to San Francisco Bay and ultimately the Pacific Ocean.

Pumping water out of the Delta is removing habitat, nutrients and fish to desert farms that grow nuts for export to other countries. Essentially they are converting that habitat into nuts and selling the converted habitat overseas making billions of dollars at the expense of the Delta.

Increased exports will allow salinity to creep higher into the Delta jeopardizing over 500,000 acres of federally designated prime agricultural land as well as the Delta economy.

Increased exports will result in increased selenium tainted agricultural run off being pumped back into the Delta via the San Joaquin River.

The commercial fisheries will be negatively impacted. The Delta's salmon support coastal communities from Monterey up into Oregon.

The Delta's recreational fisheries and tourism will suffer if the Delta becomes more polluted.

The Delta's fisheries have declined to their lowest levels ever. Some of these fish are on the Endangered Species List and others listed as Threatened. The decline of the fishery is in direct relation to increased habitat exportation over the past four decades.

The Delta is a major wintering stopover area in the Pacific Flyway. Migratory birds need clean water if they are to survive and get sufficient reserves to migrate north to their breeding grounds.

The Delta Independent Science Board has reported that 70% of unimpaired flows are needed to keep the Delta healthy. Increasing exports will not help in meeting that goal.

Increased exports will degrade the water quality for all Delta residents. It is inconceivable that 1% of Californians should benefit and 4 million Delta residents have to suffer degraded water quality.

The amount of water in the Delta is limited by precipitation and snow pack. This valuable resource must be shared equitably and conform to the 2009 Delta Plan which mandates co-equal goals of restoring the Delta ecosystem while achieving a reliable water supply. It also mandates that there be less reliability on the Delta to achieve those goals.

It is time to protect the largest tidal estuary on the west coast of the Americas, not further degrade it.

Very Truly Yours,

Roger S. Mammon
4720 Oak Forest Avenue
Oakley, CA 94561
925-625-0590

Harrison, Katrina <kharrison@usbr.gov>

(no subject)

sara k <skramlibrary@hotmail.com> Wed, Jan 24, 2018 at 11:31 AM
To: "kharrison@usbr.gov" <kharrison@usbr.gov>

Hi,

I read that the BLM is taking public comments for an increase in freshwater draw down from the Sacramento River delta to be exported to the Central Valley. I oppose any increase in removal of fresh water from the Delta due to impacts on the ecology of the Delta and downstream SF Bay. As a resident of the Bay Area and a friend of at least one fisheries ecologist, I know that exporting fresh water from the Sacramento River has increased salinity in our Bay Estuary and caused the collapse of multiple fisheries in addition to saltwater encroachment in our farm lands.

Thanks,

Sara Kram

Harrison, Katrina <kharrison@usbr.gov>

Comments on the NOI to Prepare an EIS

Scott Pellaton <spellaton@sbcglobal.net> Wed, Jan 24, 2018 at 5:56 PM
To: "kharrison@usbr.gov" <kharrison@usbr.gov>

Dear Katrina, I would like to have you consider other methods of getting water to SO Cal or the Central Valley. The Delta and its waterways have been drawn down to a dangerous flow of water already. Taking more water from this wonderful waterway is going to destroy it forever. There are so many ways of supplying water to these regions that don't rely on this fragile waterway. Desalination of the millions of gallons of water used each day by Central Valley farmer and purged away to pollute land that they're required to set aside is wasteful and not necessary, is just one example! Please find an alternative solution to this water problem that doesn't require more flow from the Delta. I've lived and enjoyed this region for over 50 years and the changes are dramatic. I beg you to work on an alternative.

Scott Pellaton

Discovery bay California

Sent from Mail for Windows 10

This email has been checked for viruses by AVG antivirus software.
www.avg.com

Harrison, Katrina <kharrison@usbr.gov>

Comments on the NOI to Prepare an EIS

Steve Orgain <steve@chefstouch.com> Wed, Jan 24, 2018 at 6:58 PM
Reply-To: steve@chefstouch.com
To: kharrison@usbr.gov
Cc: Jan McCleery <janmccleery@yahoo.com>

Re: Water for Southern California farmers

The answer to more water for Southern California is to build more water storage in southern California (reservoirs, etc)

It makes no common sense to devastate Northern California communities, to enhance those (Corporate farmers in southern Ca.)

It is not Rocket science to understand that diverting fresh water from Sacramento and the delta will not have devastating effects to wildlife, recreation, and business communities that have been there(Northern Ca.) for decades.

Southern California should not expand building or farming unless it has a viable water plan that does not include diverting water from Northern Ca. Period !

Steve Orgain

Harrison, Katrina <kharrison@usbr.gov>

Water

SUSAN VINYARD <vinyardrstt@sbcglobal.net> Wed, Jan 24, 2018 at 9:30 PM
Reply-To: SUSAN VINYARD <vinyardrstt@sbcglobal.net>
To: "kharrison@usbr.gov" <kharrison@usbr.gov>

While I am aware that you will be receiving a multitude of emails with fancy reasons and rationale, I would just like to say...STOP IT! The Delta needs to be a healthy place for wildlife and the people who live in the region. I am so tired of having to write letters, go to meetings, and contact politicians in Sacramento because you are NOT listening to the people who will be most affected, because you have your own agendas, because....who knows why you continually try to find new ways to export more water than is healthy for this valuable area of our wonderful state. So I repeat...STOP IT!! Leave the Delta alone. Figure out other ways to generate additional water - STOP exporting, diverting, and destroying the Delta.
Thank you,
Sue Vinyard
Lifelong resident of Contra Costa County
Taxpayer and VOTER!!!

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JAN 25 2018

January 22, 2018

Katrina Harrison
Bureau of Reclamation, Bay-Delta Office
801 I Street, Suite 140
Sacramento, CA 95814-2536

RE: Revisions to the Coordinated Long-Term Operation of the Central Valley Project and State Water Project and Related Facilities, Document #2017-28215, Citation 82 FR 61789

Dear Bureau of Reclamation:

I live in northern Trinity County. Recreational opportunities provided by Trinity Lake are vital to our economy. Local residents have worked with the US Forest Service, federal and state representatives, the California Department of Boating and Waterways, other agencies and businesses to resolve issues that limit access to, and use of, the lake. We have assisted in obtaining millions of dollars in grants for improving boat ramps, explored options for expanding and extending boat ramps to access the lake at low levels, encouraged the US Forest Service to develop a low water access plan, sought to resolve houseboat permitting questions, clarified boat maintenance options, and identified needed regulatory and policy revisions. However, all this effort is for naught if there is not a minimum level of water in the lake.

As you develop water supply alternatives, it is critical to also establish minimum lake levels and carryover storage for Trinity Lake. **The Bureau must adopt minimum cold-water carryover storage in Trinity Lake to ensure compliance with the Trinity River temperature objectives contained in the Water Quality Control Plan for the North Coast region.** Cold water storage is necessary to protect salmon populations during extended dry periods. Carryover storage will also buffer water users and power generators from predicted more frequent droughts. Adoption of minimum lake levels will support our recreation-based economy. Establishing a minimum lake level will resolve many issues noted in the current USFS Shasta-Trinity National Recreation Area Management Guide. At low water levels, campers, boaters and OHV users encroach on the lake bottom, which causes sanitation and pollution issues and damages heritage sites. **The Bureau should adopt a minimum lake level that ensures that Clark Springs and Fairview boat ramps remain in the water (90% forecast). If Trinity Lake is managed at lower levels, then the Bureau must implement sufficient mitigation measures, such as extension of boat ramps, to stabilize recreational use.**

Thank you for considering these comments as you develop the environmental impact statement.

Sincerely,

Carol Fall

Carol Fall

PO Box 466
Trinity Center, CA 96091

Harrison, Katrina <kharrison@usbr.gov>

Comments on the NOI to Prepare an EIS

Colin Brodie <cbrodie@comcast.net> Thu, Jan 25, 2018 at 9:37 AM
To: kharrison@usbr.gov

○ Please **consider other alternatives** to generate additional water or that improve and optimize the utilization of water such as desalinization, recycling, water conservation, or water reuse.

o Please clean up the farm waste water from the Central Valley farms that now flows into the San Joaquin, which makes that river polluted and is why the farmers now want the Sacramento River water instead.

○ When considering if any actions are possible that increase export capabilities through the Delta I oppose any new tunnels, gates, dams or other obstructions in the Delta Waterways. Projects such as the 2-Gates Fish Protection Project violate The Rivers and Harbors Act, destroy boating, and thus ruin the economy of boating communities.

○ **STRONGLY OPPOSE** making any modifications to the current environmental and regulatory requirements **that would negatively impact the fish or increase salinity**.

○ **STRONGLY OPPOSE any modifications to operations that reduce rather than increase** the flow through the Delta.

o **HIGHLY RECOMMEND other alternative actions OUTSIDE the Delta**, that would REDUCE RELIANCE on the Delta and DECREASE EXPORT levels, thus better meeting the Delta Flow Requirements.
FOR EXAMPLE:

○ Restoring the Tulare Lake Basin for increased storage capacity south of the Delta and as percolation ponds to restore ground water.
o Improved ground water storage and better ground water management including more controlled management of the Kern Water Bank, which now is privatized and reportedly was used for personal watering of orchards and reselling water to urban developers.

Whatever is done, **REQUEST that the USBR identify water quality standards that must be maintained, in various parts of the Delta (including the Discovery Bay waterways, where flow is limited due to drought years and other stressors)** to be sure any changes improve, and don't degrade, water quality and health. During the drought, we suffered from toxic blue-green algae blooms, which shut down our waterways to swimming and contact and significantly impacted our economy. Home sales fell through and marina businesses suffered. **Please commit that any operational changes keep the health and safety of Delta communities.**

Thank you, Colin Brodie
5631 Starboard Drive
Discovery Bay, CA 94505
925 634 8564

RECEIVED
JAN 25 2018

Jan 23, 2018

Dear Katrina,

I beg you to allow nature to do her job. and let the water to flow down Trinity flushing the river and bring nutrients to the bay and ocean. The salmon need the cold water to prevent "Ick" from killing them. Between all the mining, deforestation, over grazing and water derversions already done, and now the "green rush" along with many wineries. We need more water testing in all of Calif. including industry and farming.

With only 3% of the worlds waters are fresh water. We need to make it

a priority to protect these scenic rivers.

With all the damage done already including massacreing the natives you need to consider the Hoopa tribe. This is their way of life

We have only one Earth! I protect the water shed I live in, and try to educate people of the value of fresh water.

There are many down stream who, don't have a clue of this resourse's importance and waste water every day. We need to produce more food for people, not alfalfa for cows.

Sincerely
Gwen Tafarella
a Trinity County resident.
Read: Cadillac Desert

Harrison, Katrina <kharrison@usbr.gov>

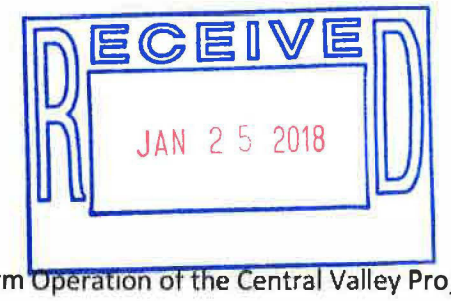
Comments on the NOI to Prepare an EIS

Lyn Hall <mrscoldduck@sbcglobal.net> Thu, Jan 25, 2018 at 11:50 AM
To: kharrison@usbr.gov

Do not send more water from the Delta to Southern California. The Delta is already in distress. Delta smelts are near extinction. Water quality is poor due to exports and drought. Scientistic studies have shown additional water exports will cause more deterioration to Water quality and cause additional stress on the wildlife and people who live in the Delta. Farmers, recreational boaters and many residents depend on Delta water for drinking and growing crops. Do not take more water from the Delta. Taking more water will result in irreparable damage to the Delta, the fisheries and other wildlife. Thank you for your consideration. Linda Hall
Discovery Bay resident.

Patrick M. Frost
P.O. Box 466
Trinity Center, CA 96091

January 22, 2018



Katrina Harrison
Bureau of Reclamation, Bay-Delta Office
801 I Street, Suite 140
Sacramento, CA 95814-2536

RE: Revisions to the Coordinated Long-Term Operation of the Central Valley Project and State Water Project and Related Facilities, Document #2017-28215, Citation 82 FR 61789

Dear Ms. Harrison:

I live near Trinity Lake in northern Trinity County. Trinity Lake provides recreational opportunities that are vital to our economy. Local residents have worked with the US Forest Service, federal, state and local elected officials, the California Department of Boating and Waterways, other agencies and businesses to resolve issues that limit access to, and use of, the lake. We have assisted in obtaining millions of dollars in grants for improving boat ramps, explored options for expanding and extending boat ramps to access the lake at low levels, encouraged the US Forest Service to develop a low water access plan, sought to resolve houseboat permitting questions, clarified boat maintenance options, and identified needed regulatory and policy revisions. Unfortunately all of these efforts are of little help if there is not a minimum level of water in the lake.

The Bureau must adopt minimum cold-water carryover storage in Trinity Lake to ensure compliance with the Trinity River temperature objectives contained in the Water Quality Control Plan for the North Coast region and as described in your own agency's Record of Decision for the Trinity River Restoration (December 2001). It also is critical to establish minimum lake levels and carryover storage for Trinity Lake, as you develop water supply alternatives, for these reasons:

- Cold water storage is necessary to protect salmon populations during extended dry periods.
- Carryover storage will buffer water users and power generators from predicted more frequent droughts.
- Adoption of minimum lake levels will support our recreation-based economy.
- Minimum lake levels will resolve many issues noted in the current USFS Shasta-Trinity National Recreation Area Management Guide. At low water levels, campers, boaters and OHV users encroach on the lake bottom, which causes sanitation and pollution issues and damages heritage sites.

The Bureau should adopt a minimum lake level that ensures that Clark Springs and Fairview boat ramps remain in the water (90% forecast). If Trinity Lake is managed at lower levels, then the Bureau must implement sufficient mitigation measures, such as extension of boat ramps, to stabilize recreational use.

Thank you for comments into account as you develop the environmental impact statement.

Sincerely,

Patrick M. Frost

Harrison, Katrina <kharrison@usbr.gov>

Comments on the NOI to Prepare an EIS

D LUDWIG <susan_don@comcast.net> Thu, Jan 25, 2018 at 11:21 AM
Reply-To: D LUDWIG <susan_don@comcast.net>
To: kharrison@usbr.gov

I strongly oppose any modifications which would change the water flow through the California Delta, which would modify the recreational boating, fishing and the economy of the Delta.

None of the proposals produce one more drop of water, and the water should not be sent to the Central Valley water districts, at the expense of the Delta and the businesses, farms, recreational areas therein.

No tunnels, gates or other ways of conveying more water to the Central Valley and other water districts, to the detriment of the Delta.

Susan Ludwig

Harrison, Katrina <kharrison@usbr.gov>

Comments on the NOI to Prepare an EIS

Bob Ackerly <backerly@gmail.com> Fri, Jan 26, 2018 at 6:40 AM
Reply-To: bob@ackerly.com
To: kharrison@usbr.gov

Dear Ms. Harrison:

In regard to the Trump Administration's desire to send more water to almond and other farmers south of the California Delta, I submit the following comments below.

I have been active in opposing the State of California's plan to build two 40' tunnels running 35 miles buried beneath the land and waters of the Delta. The State has already decimated the California Delta smelt population to the point of extinction through its current water pumping operations sending water to southern California farmers and water districts while doing irrepairable harm to salmon, steelhead, striped bass and other fish that traditionally have spawned upstream from the Pacific Ocean. Without the Delta smelt and other baitfish, the large-mouth bass population is also in jeopardy. Construction of the tunnel project will disrupt aviary using the delta causing inestimable damage to the flyway the Delta represents.

The project proposed by the Brown Administration to build twin-tunnels (now pared down to one tunnel likely with future plans to build a second) is unacceptable. It would remove millions of gallons of water from the Delta flow and send them south for irrigation and other purposes. Changing the flow of water within the Delta will lead to salinity levels creeping further upstream and create stagnation and brackishness in other parts of the Delta, all of this to support continued practices of farming of water thirsty crops such as almonds! (It takes 5 gallons of water to prioduce one almond) in what is desert-land.

Several alternatives exist that have been ignored by the Brown administration, namely conservation, recycling, additional water storage capacity and desalination plants. All of these options are eco-friendly and do no damage to the Delta such as digging 35 miles of tunnels would over the estimated 10 year build period with its massive amount of truck traffic relocating "muck" dug to build the tunnels underground and depositing it in "muck piles" throughout the Delta, destroying entire towns, farms, habitat and livelihoods. What are our government representatives thinking?

I urge you to recommend eliminating support for the California "Water Fix" boongoggle the Brown Administration has foisted upon all of us when there are much better alternatives available at far less cost and damage to the largest watershed in North America.

Thank you,

Robert Ackerly
4056 Newport Ln
Discovery Bay, CA 94505

Harrison, Katrina <kharrison@usbr.gov>

re: Public scoping meeting in Chico Ca. comments

Catherine N. H. Cottle <jnccottle@gmail.com> Fri, Jan 26, 2018 at 4:24 PM
To: kharrison@usbr.gov
Cc: Catherine Cottle <jnccottle@gmail.com>

Hello,

Thank you for holding that meeting last night.
I am a member of the Water Advisory Committee in Butte County.
Among my concerns - many of which were mentioned last night - I want to focus here on the following points.

1. I request that a timeline for completion of the EIS, also known as an EIR, be clearly spelled out & ample notice & time be given to respond to it by all interested parties.

2. I request that the term mitigation be clearly defined in the document to ensure that all interested parties understand that it means to make a problem better or less worse. That mitigation does not mean to fix a problem.

3. I request the EIS address every different soil type in California affected by this proposed revision, their different Evapo-Transporation rates & differing recharge rates through California's aquifers. And these effects on the CVP & State Water Project available water supplies.

4. I request that the effects of climate change, (look at Cape Town, South Africa), & the positive effects of conservation methods as a continuing reality in California now & in the future, given our population, be addressed for their environmental & economic benefits.

5. I request that agricultural interests NOT be lumped together. There are still small farms as well as large corporate farms that grow a variety of crops in a variety of soils throughout California.

6. I request that the EIS reference California as a whole, of course with reference to the differing crops, soils, needs etc, & NOT include language that could give rise to the northern versus southern California narrative that has created ill feeling. We each require water to live, no matter where we live in California.

7. I request the EIS clearly state exactly what private & public economic special interests would benefit from the implementation of this EIS in California & clearly state to what extent these economic interests, private & public, would economically benefit.

8. I request the EIS, while it is being compiled, reference any sudden changes in water supply including the costs of the Oroville Dam spillway break, (due largely we now know to a lack of proper maintenance by DWR). And compare & contrast the economic cost of the break versus the costs of the maintenance that should have been done to the costs of this EIS' recommendations. Especially as it relates to the infrastructure of the CVP & State Water Project.

9. I request that the EIS address how exactly the Sustainable Groundwater Mgt. Plan/Water budget being worked on now, to be implemented in California in the coming years, will affect or be affected by this EIS.

If I think of anything else I will send you another e-mail before Feb. 1st.

Catherine Cottle

Harrison, Katrina <kharrison@usbr.gov>

Bureau of Reclamation Water issues Input

Jeanne Cecchi <airjean@comcast.net> Fri, Jan 26, 2018 at 3:22 PM
To: "kharrison@usbr.gov" <kharrison@usbr.gov>

The #1 issue should be WATER QUALITY PROTECTION. Won't matter how much water is delivered anywhere if it keeps getting poisoned by the marijuana growers using illegal pesticides. Better you should start there.

Sent from Mail for Windows 10

Harrison, Katrina <kharrison@usbr.gov>

Comment on EIS for unspecified USBR project

J. Murphy <juliamurphy247@gmail.com> Fri, Jan 26, 2018 at 6:31 PM
To: kharrison@usbr.gov

Hello Ms. Harrison,
I was in attendance at the public comment meeting last night in Chico. Thank you and the rest of staff for giving us the opportunity to comment.

In addition to supporting almost all of the comments that were made last night, I wanted to add:

Under the Sustainable Groundwater Management Act, critically overdrafted basins must come up with a Groundwater Sustainability Plan by 1/31/20. All of the overdrafted basins are south of the Delta. DWR will not finish reviewing all of the GSPs until 2024, according to the timeline.

Reclamation's project timing alone is cause for concern. At minimum, the overdrafted basins must have an opportunity to create their plans without including whatever additional surface water Reclamation proposes to make available. To do otherwise would result in a Groundwater Sustainability Plan for one region that would intensify unsustainable water transfers in another.

A conservative approach would dictate that no major revisions to CVP/SWP water regimes would take place until DWR has an opportunity to review all of the GSPs. But at the very least, all of the critically overdrafted basins should have GSPs prior to ANY discussion of changing current volumes of transfer.

To do otherwise would imply that Reclamation was racing to implement an unsustainable plan before hard data made it blatantly criminal.

Thank you again for your time.

Julia Murphy
Education/Outreach/Service
530.520.3110

Harrison, Katrina <kharrison@usbr.gov>

Comments to scoping meetings

Kate Bunney <katbun12@gmail.com> Fri, Jan 26, 2018 at 1:07 PM
To: kharrison@usbr.gov

Dear Katrina

I appreciate the opportunity to provide comment as part of the EIS process. My concerns are as follows:

As a water activist who has lived and worked around the world with many water experts and community leaders I am deeply disappointed by the lack of understanding in holistic water management and the profound adjustments needed in light of climate change. This is archaic management known to have severely detrimental effects on the local peoples, lands and waters. We as a society can no longer say we do not know of alternatives. Instead we must separate the issue of water from the system of financial gain. Please inform yourselves and us.

I would also like to know whether there are Tribal representatives working within Reclamations and other decision making bodies - and generally how much diversity is there. Essentially no decisions can be made that consider the needs of the tribes and people of color unless they are fully represented and active in the decision making process.

From what I have observed there is a deep need to overhaul, from the root, the way you are approaching the issues of water management.

Thank you
Kate Bunney

Harrison, Katrina <kharrison@usbr.gov>

Scope of EIS for 82 FR 61789

Kelsey Cody <codykc@colorado.edu> Fri, Jan 26, 2018 at 12:03 PM
To: kharrison@usbr.gov

Hello,

I am writing in reference to the following call for comments:

https://www.federalregister.gov/documents/2017/12/29/2017-28215/notice-of-intent-to-prepare-a-draft-environmental-impact-statement-revisions-to-the-coordinated

The EIS should consider impacts to human health such as nitrate and nitrite contamination of drinking water in the central valley. It should also consider the long term impact of climate change on water availability in the south and north. Recent studies indicate the north may get wetter but the water will fall and rain, not snow; the south will get dryer almost certainly. This essential fact of a warming atmosphere and changes in runoff patterns must be incorporated into the EIS for reasons of fish migration and other species use of the streams as well as the timing of water availability for humans. Groundwater recharge and conjunctive use of groundwater and surface water should be incorporated into the EIS as an alternative to dams because of the differing impacts on habitat, evaporation, and costs between groundwater storage and dams; conjunctive use has won on all counts in most studies I have seen. Power generation on new dam sites may fall far below the revenues that could be obtained from improved irrigation efficiency in the central valley. Subsidizing drip irrigation as opposed to subsidizing new dams would almost certainly be a better bet for taxpayers and farmers alike, extending the duration over which a given amount of supply could be used beneficially (especially important during prolonged drought or a supply interruption due to an earthquake impacting the delta). Air quality must also be considered in the EIS because of the damage done to human and animal health by industrial feed lots (i.e. bacterial toxins gone airborne) and the increase in cattle production likely caused by increased water supplies to the south of the valley. Finally, the EIS should consider the option of treatment and desalination of produced water from oil and gas operations, agricultural runoff, and sea water. The economic feasibility of these options will be limited as supplies for agriculture, but building ocean desal plants in LA will take pressure off deliveries to LA and improve availability for farmers. Moreover, the more self-reliant MWD can be, the more water can be made available to farmers, reducing the need to deliver more water south. MWD should therefore be required to increase the local capture and treatment of rainwater and flood events.

-KC

Kelsey C. Cody, M.S.
Ph.D. Candidate, Environmental Studies Program
University of Colorado at Boulder
(707) 333-3776

Harrison, Katrina <kharrison@usbr.gov>

Comments on the NOI to Prepare an EIS

michael harbert <mjdevelopment_4@yahoo.com> Thu, Jan 25, 2018 at 9:17 PM
To: kharrison@usbr.gov

Please do not restrict to flow into the southern delta that would harm the fish and wildlife population. There are other alternative beyond delta flow restrictions. This will harm recreation and local businesses. The almond farmers can get water to their Central Valley desert land another way.

Michael Harbert
MJ Development
(925) 726-5766
mjdevelopment_4@yahoo.com

Harrison, Katrina <kharrison@usbr.gov>

Comments for EIS for the Revisions to the Coordinated Long-Term Operation...

O J McMillan <ojgamc@pacbell.net> Fri, Jan 26, 2018 at 10:51 AM
Reply-To: O J McMillan <ojgamc@pacbell.net>
To: "kharrison@usbr.gov" <kharrison@usbr.gov>
Cc: "info@aqualliance.net" <info@aqualliance.net>

I attended the Public Scoping Meeting in Chico on January 25, 2018 and have the following comments. My address is 2040 Vallombrosa Ave., Chico, CA 95926.

Water is a topic of great concern to all Californians, and certainly to those of us who live in the North State. As Reclamation considers revisions to its plans for long-term operation of the CVP, SWP and related facilities, I believe it should take into account the following:

- Commenting on a "plan" as nebulous as the one under consideration is extremely difficult, but that plan clearly takes "maximizing water deliveries" as a primary factor. It should be obvious that that cannot be the *only* factor.
- All of Reclamation's actions should consider *sustainability* as the primary driver. The reality of climate change can no longer be debated by any sentient being, and water is essential to all living things. Extreme conditions of drought, floods, fire, and storms are becoming more commonplace, and the North State is the source of much of California's water. Much of that water is groundwater, and increased supplies of water to "Big Ag" in the South cannot be undertaken at the expense of the viability of water supplies in the North. Depletion of our aquifers with the associated dry wells and subsidence are well documented and cannot be made worse by future activities of these water projects.
- Fresh water going into the ocean through the Delta is not "wasted." Maintaining the viability of various fish species in California's rivers (including salmon and the often-maligned smelt, a well-known indicator fish) is essential. The supposed tension between water for people vs. for fish is a clear false dichotomy.

Thank you, O. J. McMillan

Nelson, Benjamin <bcnelson@usbr .gov>

Comments: Revisions to the Coordinated Long-T erm Operation of the Central V alley Project and State W ater Project, and Related Facilities

Debra Lucero <deblucero@deblucero.com>
To: bcnelson@usbr.gov

Sat, Jan 27, 2018 at 9:41 PM

Dear Ms. Harrison/Ben:

This is a culmination of the comments made in Chico. My name is Debra Lucero, 810 W. 11th Ave. in Chico, CA 95926. 530-228-2860.

Please enter these comments into the record for the EIS for the "Revisions to the Coordinated Long-Term Operation of the Central Valley Project and State Water Project, and Related Facilities."

WATER IS LIFE - Caleen Sisk, Spiritual Leader and Tribal Chief of the Winnemem Wintu Tribe, who practice their traditional culture and ceremonies in their territory along the McCloud River watershed in Northern California, spoke tonight at the U.S. Department of the Interior Bureau of Reclamation meeting in Chico. Aqua Alliance's Barbara Valamis got the evening going.

Concerns expressed:

1. Raising the Shasta Dam 18 1/2 feet will wipe out AGAIN the endangered Winnemem Wintu Tribe of which there are 120 people left.
2. Sludge at the bottom of our water storage areas creates less water storage.
3. Confusion about what "Revisions to the Coordinated Long-Term Operation of the Central Valley Project and State Water Project and Related Facilities" actually means. Nearly everyone at the meeting translated it to mean "Steal Northern California's water and continue to deplete our aquifers."
4. The source of the water mentioned in this "plan" is never addressed in the Environmental Impact Study - something required by law.
5. Fish. We had a lot. Now, we have very few. Only 2 smelt were counted at the Delta this year. Aqua Alliance mentioned the fact the water plan calls for 100,000 fish yet there have often been less than 6,000. The high fish count was in 1969. The Salmon are endangered.
6. Our ground water is endangered.
7. Local fishing guides are concerned. They do NOT want to see more water going south. The argument is that the large corporate farmers in the southland are not growing food for America but for overseas.
8. Our environment is collapsing ... literally. Decades of over-pumping groundwater have irreversibly altered clay layers in parts of California's Central Valley, causing the ground to sink and permanently reducing its capacity to store water - according to NASA which shows from space what's happening.
9. We need de-salination plants.
10. We need our water to NOT evaporate
11. Our infrastructure needs fixing before any NEW projects begin.
12. We need more creative thinking.
13. We need to plant crops that take less water - wheat, beans, chickpeas in areas where water is scarce.
14. We need to stop farming desert areas.
15. Read CADILLAC DESERT.
16. No more dams. Let's not repeat the mistakes of the past.
17. We need more ground water monitoring.
18. Chemical use must be monitored and stopped from going into our watershed.
19. Illegal marijuana grows in our National Forests contribute to water pollution. These growers are stealing water.

20. Water does not multiply. It is a finite source.
21. Climate change is real.
22. Our elected officials need to become more pro-active.
23. We cannot keep using the same model of infinite growth. It is unsustainable. We need to live within the limits of our environment.
24. Flooding is good.
25. Flood plains are natural storage.
26. "How much harder can you twist the sponge that is already quite dry. We're dry," one speaker said. "Water is finite. Water doesn't multiply."
27. Will "stakeholders" at this meeting be heard or is it another check box on government's way to devastating our Northern California environment?
28. Where is the sustainable water plan for California?
29. Fish. Fish. Fish. Where are the fish?
30. We MUST DO BETTER!
31. Sites Reservoir is a good idea according to one participate.

Sincerely,
Debra Lucero
810 W. 11th Ave.
Chico, CA. 95926
530-228-2860

Harrison, Katrina <kharrison@usbr.gov>

Chico - Public Scoping Meeting

Robert Dresden <mahoneydresden@yahoo.com> Sat, Jan 27, 2018 at 11:59 AM
To: kharrison@usbr.gov

There are many comments I could make regarding this meeting. For starters, I am grateful that it happened and that we (the people) had the opportunity to meet with the Reclamation representatives. Additionally, I wholeheartedly support, but won't re-state here, all the public comments about concern for the environment and Native Peoples' rights. I would however like to address two things that to me and others present were very problematic. The overview and public comment portions of the scoping meeting were fine - and I hope you accurately captured and genuinely consider the views of my Northstate community members. But when it came to the Information Stations, everything fell apart.

Before disbanding into the chaos that resulted when everyone broke into these small groups - where no one could hear much of anything being said in their own group, let alone have any idea what else may have been being shared at another station - there had been a successful exchange of ideas in which everyone present was able to participate. One audience member pleaded that we not break into these small groups, but rather continue to have each topic presented to the group as a whole. However, the official response was that we had to do it this way because that was how the other Scoping Meetings that had already taken place had been conducted and we needed to do it the same way. The take-away message here seems to be that the operating principle is to keep doing things the same way …even if it isn't working. I hope this is not a metaphor for your water management policies. (Incidentally, I must add that we wouldn't have even had a scoping meeting here in Butte County - the very source of much of the water you are charged with managing - if it hadn't been vehemently pointed out, and then added as an afterthought. This is reprehensible.)

So, we followed the information station format. It was loud and chaotic. Most people did not seem to be very engaged or did not move from one station to another, and if they did move it only added to the confusion rampant throughout the room. I myself only made it to one station, and was immediately put off by the language of the title. I do not recall the exact verbiage used, but it was something to the effect of "Maximizing water deliveries balanced with a concern for the environment." The primary thrust of the topic presented to many like an undeniable need to get, get, get more water…with concern for the environment as an afterthought, at best. It didn't feel sincere to me, and was in fact insensitive and visibly offensive to me and others present there. Just imagine someone these days saying, "I want to maximize the sexual gratification I can get from you, balanced with your rights, of course." Unacceptable.

I understand this desire to maximize the water deliveries to SoCal. But it should be obviously and abundantly clear that there is only so much water (mostly up here in NorCal) while at the same time an insatiable lust for it (primarily in the South, esp. Westlands and other corporate interests). This is clear. Furthermore, we know that the environment is already endangered, having been historically and repeatedly degraded for human development. And so if this is to truly be a BALANCED approach, then it is time for the focus of water management to first and foremost be on supporting, protecting and healing the environment that sustains all life - rather than first push the development side of the equation. Perhaps considering the concept of living on a fixed income might help to illustrate the idea. The prudent thing to do would be to develop a budget and live within one's means. To spend lavishly beyond one's means would be foolishness and of great peril. There is only so much water…and no end to human desire.

Sincerely,
Robert Dresden

Harrison, Katrina <kharrison@usbr.gov>

Comments on the NOI to Prepare an EIS

R Solomon <risolom@gmail.com> Sat, Jan 27, 2018 at 5:07 AM
To: kharrison@usbr.gov

We are writing today to comment on the reports of the USBR considering alternative ways to increase water flow out of the Sacramento Delta.

We ask that the USBR identify water quality standards that must be maintained, in various parts of the Delta (including the Discovery Bay waterways, where flow is limited due to drought years and other stressors). This is necessary to be sure that any changes actually improve, rather than degrade, water quality and health. During the drought, Discovery Bay suffered from toxic blue-green algae blooms, which shut down our waterways to swimming and contact and significantly impacted our economy. Home sales fell dramatically and marina businesses suffered.

We strongly recommend that the first action should be to consider other alternatives outside of the Delta to generate additional water or that improve and optimize the utilization of water. Generally, these include such things as desalinization, recycling, water conservation, or water reuse. More specifically, restore the Tulare Lake Basin for increased storage capacity south of the Delta and as percolation ponds to restore ground water. Or improve ground water storage and utilize better ground water management. The latter should include more controlled management of the Kern Water Bank, which now is privatized and reportedly was used for personal watering of orchards and reselling water to urban developers.

We highly recommend actions that could clean up the farm waste water from the Central Valley farms that now flows into the San Joaquin. This is what makes that river polluted. This is why the farmers now want the Sacramento River water instead.

Please commit that any operational changes made will preserve the health and safety of Delta communities.

Harrison, Katrina <kharrison@usbr.gov>

Central Valley Water Project. Water Deliveries

Albert Vogel <vogelal@gmail.com> Sun, Jan 28, 2018 at 5:18 PM
To: kharrison@usbr.gov

I am profoundly disturbed by the Trump Administration proposal to increase or even maximize diversion of water from the Delta to users farther south. The issue is really the sustainability and health of the Delta and San Francisco Bay ecosystems. Increased water diversion will do serious damage to these already severely impacted systems. Fisheries, recreational use, water quality, etc are already threatened and diverting more water, particularly in low runoff years will create intolerable conditions. The ecological health of the Delta and SF Bay ecosystems is far more valuable than any possible gain to a few big water users in the south. Our primary concern should be maintaining the health and sustainability of the Delta and SF Bay. This is simply not possible with increasing diversion of water.

Al Vogel
MS Aquatic Ecology and Natural Resources Management, Cornell University

Sent from my iPad

Harrison, Katrina <kharrison@usbr.gov>

Comments on the NOI to Prepare an EIS

Firoz <firozb@aol.com> Sun, Jan 28, 2018 at 3:04 PM
To: kharrison@usbr.gov

STRONGLY OPPOSE making any modifications to the current environmental and regulatory requirements that would negatively impact the fish or increase salinity.

Sent from my iPhone

Harrison, Katrina <kharrison@usbr.gov>

Comment on Water Policy

Michael Duran <robertoso12sj@gmail.com> Sun, Jan 28, 2018 at 3:40 PM
To: kharrison@usbr.gov

I have followed water policy for some time. Please add me to the distribution list.

Here are my comments:

Partner with states on water policy rather than ignore it in favor of private interests.

Include watershed stakeholders regarding any new or modified water storage or exports. They matter.

Pay attention to state law and regulations. These express the will of the People.

Water, like land use, is inherently a local concern and should be treated as such.

Michael F. Duran
721 W. Washington Blvd.
Pasadena, CA 91103

Harrison, Katrina <kharrison@usbr.gov>

Comments on the NOI to Prepare an EIS

dlo2012@yahoo.com <dlo2012@yahoo.com> Mon, Jan 29, 2018 at 11:15 PM
To: kharrison@usbr.gov

Stop sending water from the delta to the central valley. I've seen so much damage to the beautiful gem of California, which is our delta. So many communities depend on the rivers. And so many are already lost... Like Walnut Grove. The delta is am amazing place. Please don't strain it anymore.

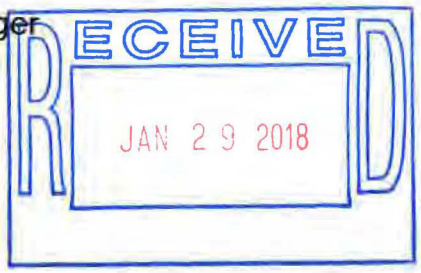
Huge underground aquifers around the central valley have been depleted. They can be recharged during wet years. Los Angeles can use their washes to store water, rather than send it straight to the ocean.

The Sacramento River and the delta cannot support more than it does. Especially with increased demands from the bay area. Save water in the the south. Its the only long term solution.

Deanna

January 18, 2018

Katrina Harrison - Project Manager
Bureau of Reclamation -
Bay Delta Office
801 I Street, Suite 140
Sacramento, CA 95814-2536



Dear Ms. Harrison:

This responds to a public notice (Federal Reg Vol,83, No. 249) of the intent of the Bureau of Reclamation to prepare an environmental impact statement, "Revisions to the Coordinated Long-term Operation of the Central Valley Project and the State Water Project, and Related Facilities."

I as a member of the public have an ownership interest in the State's waters, fish and wildlife resources, associated habitats and environmental amenities. Please include these comments into the written record of this project.

The first listed action is "Maximize water supply delivery, consistent with applicable law, contracts, and agreements, considering new and / or modified storage and export facilities." My Webster's dictionary defines "maximize" as "increase to the highest possible degree."

The long standing policy repeated by Secretary of the Interior Julius Krug, Oct 12, 1948: "Let me state, clearly and finally, the Interior Department is fully and completely committed to the policy that no water which is needed in the Sacramento Valley will be sent out of it." He then added, "There is no intent on the part of the Bureau of Reclamation to ever divert from the Sacramento Valley a single acre-foot of water that might be used in the Valley now or later." There is a long history of other Department of the Interior and Bureau of Reclamation officials making this and other similar statements.

In light of the facts that:

The State of California entered the Union on September 9,1850 on an equal footing with the original 13 states. One of those laws, the Public Trust Doctrine provides that certain resources belong to the people and are to be administered by the state for the benefit of the people.

The Public Trust Doctrine is a background principle of property law that predates today's environmental laws and applies to every water right that impacts trust resources and may, in fact, define or limit the very nature of the right to put water to beneficial use. In California the public trust doctrine can limit private water rights to protect inherent public trust values

The California court has stated "It is laid down by our law writers that the right of property in water is usufructuary and consists not so much of the fluid itself as the advantage of its use." Put in the context of a water right – a user of water must

respect the rights and interests of others, including the peoples' fish property, and is not to alter the integrity of that water as a water supply or an ecosystem. Private rights in water are usufruct, a use right.

Also given that:

There is a perched water table involving about 379,000 acres on the west side of the San Joaquin Valley;

Salt has impacted 780,000 acres on the west side of the San Joaquin Valley;

California's rivers and streams are grossly over appropriated and the Bureau of Reclamation holds the largest share of those water rights;

The Delta smelt are nearing extinction, the winter and spring runs of Chinook salmon and Central Valley steelhead trout, green sturgeon, and the Longfin smelt are listed under Federal or State lists of Endangered or Threatened Species, are all struggling to survive in the face of habitat uncertainty and heavy exports;

The Bureau of the Budget in 1953, commenting on legislation to reauthorize the CVP (Act of August 27, 1954) stated, "that the costs for correcting damages to fish and wildlife resources caused by the building of projects should be treated as part of the construction costs and allocated to the various purposes in the same manner as other damages, including relocations". The meaning of this quote is that the people's water, fish and wildlife resources (the public trust) impacted by such projects must be protected and damages that are incurred are to be corrected as a project cost and that such costs are to be borne by the project users and beneficiaries;

The Central Valley Project Improvement Act (CVPIA) of 1992 amended previous CVP authorizations to include fish and wildlife protection, restoration, and mitigation as project purposes having equal priority with irrigation and domestic water supply, and fish and wildlife enhancement having an equal priority with power generation. Mitigation for fish and wildlife losses incurred by construction, operation and maintenance shall be based on the replacement of ecologically equivalent habitat.

Given that much has to be accomplished to fulfill the purposes of the CVPIA of 1992. And given that Department of the Interior and to Bureau of Reclamation representatives have stated that it is their intent to live by the limitation of California Water Code Sections 11460 -11463. In this effort, the Bureau has attempted to estimate the present and future water needs for each watershed and have said they intend to divert no water from any watershed which will or may be needed for beneficial uses in the future within that watershed.

I request the Bureau of Reclamation, as a part of the preparation of an environmental impact statement regarding the, "Revisions to the Coordinated Long-term Operation of the Central Valley Project and the State Water Project, and Related Facilities", under take the following actions relative to this environmental impact statement project.

Action: The Bureau of Reclamation should identify the water needs in the broadest context for each of the watersheds or sub-basins of the Sacramento Valley and Delta Region. This includes not only the municipal and industrial water needs, but the instream flows (including water quality) needed to protect anadromous fishes, other public trust resources, uses and values of each watershed or sub-basin.

Action: The Bureau of Reclamation should identify the rivers and streams and associated watersheds it believes have "excess" or "surplus" water above their identified needs.

Action: What is the Bureau of Reclamation definition of "excess" or "surplus water" in light of the broadened definition of Public Trust purposes, uses and interests protected in light of the Marks court definition and potential irrigation, municipal water demands in the Sacramento Valley and Delta watersheds.

Action: The Bureau of Reclamation should lay out a detail plan with disposal mechanisms, locations and cost estimates of how it and its contractors are going to handle the drainage from the lands irrigated that is surely contain selenium, boron and other salts that will flow / drain from these lands.

Action: The Bureau of Reclamation should lay out a detailed plan of how it proposes to protect the fish and wildlife resources and their habitats affected by the operation of reservoirs it operates or controls to maximize the sale or use of such "excess" or "surplus" water.

The Documentation and Background Supporting material attached to this letter is an integral part of this cover letter and should be treated accordingly.

Thank you for the opportunity to present these comments.

Sincerely.

Felix E. Smith

Felix E. Smith
4720 Talus Way
Carmichael, CA 95608

cc:interested parties

Attachment.
Documentation and Background Material is an integral part of this letter of January 18, 2018, to Katrina Harrison, Project Manager – Bureau of Reclamation, for preparing the environmental impact statement, "Revisions to the Coordinated Long-term Operation of the Central Valley Project and the State Water Project, and Related Facilities." This material is an integral part of my cover letter and should be treated accordingly.

**Katrina HarrisonProManUSBR418Final

This Background and Supporting Material, is an attachment to my letter of January 18, 2018, to Katrina Harrison – Project Manager, Bureau of Reclamation, for preparing the environmental impact statement, "Revisions to the Coordinated Long- term Operation of the Central Valley Project and the State Water Project, and Related Facilities." This material is an integral part of my cover letter and should be treated accordingly.

Background and Supporting Material

The State of California entered the Union on September 9,1850 on an equal footing with the original 13 states. The original states adopted the laws of England, which adopted much of Roman civil law. During Roman Emperor Justinian reign (529 – 534 AD), the Institute of Justinian Codes (Roman law) recognized that "By law of nature these things are common to all mankind: the air, running water, the sea, and consequently the shores of the sea". The fish and other aquatic life (aquatic insects to shellfish), water dependent wildlife (waterfowl and aquatic mammals), fishing, hunting, beaching of boats, collecting seaweed and shellfish, bathing, swimming are a few examples public and private resources and uses protected by the Public Trust Doctrine. Public uses of the banks of estuaries, rivers and lakes for similar activities were included in the Institute of Justinian Codes (Althaus – 1978).

The Public Trust Doctrine provides that certain resources belong to the people and are to be administered by the state for the benefit of the people. The Public Trust Doctrine is a background principle of property law (Lin – 2012). The core principle of the Public Trust is that every sovereign government has a property interest in its water, fish and wildlife, held as a trust for the benefit of today's generations and generations yet born (Wood – 2004). As a back ground principle, the Public Trust Doctrine predates today's environmental laws and applies to every water right that impacts trust resources and may define or limit the very nature of the right to put water to beneficial use (Klass & Huang – 2009.)

In 1853, the California Supreme Court in Eddy v. Simpson (3 Cal. 249), stated "It is laid down by our law writers that the right of property in water is usufructuary and consists not so much of the fluid itself as the advantage of its use." The American Heritage Dictionary defines ~usufruct~ as "the right to utilize and enjoy the profits and advantage of something belonging to another so long as the property is not damaged or altered in any way" (emphasis added). Put in the context of a water right – a user of water must respect the rights and interests of others, including the peoples' fish property, and is not to alter the integrity of that water as a water supply or an ecosystem. Private rights in water are usufruct, a use right.

Thomas Jefferson in letter to James Adam in 1789 described a fundamental principle that every government and its people should understand. That principle is "usufruct" and the use of land. I would add "usufruct" to the use of water. Thomas Jefferson wrote:

> ***The earth belongs in usufruct to the living, not to spoil it for future generations. The present generation has the same right over the lands and resources as the preceding generation and the next generation. Using the environment for a limited time without damaging or diminishing its value for future generations is the meaning of usufruct.***

Long Term Concern

California has been concerned about the threats posed by dams and other obstructions to anadromous fish in the state's rivers and streams since early statehood. In 1852, the California legislature enacted a statute outlawing any weir, dam, fence or other obstructions to salmon migration in any river or stream, as a public nuisance. (Ch. 82 Compiled Laws of Cal. 1852 at 325). In 1870 the legislature passed An Act to Provide for the Restoration and Preservation of Fish in the Waters of the State. This Act states that it is the duty of the Board of Fish Commissioners to require owners of dams, weirs and other man made structures, to construct and to keep in good repair fishways or fish ladders so that fish can ascend them and continue on their migration to their historic spawning and nursery areas. This Act was actually Section 637 of the California Penal Code (Ch. 457, 1870, Statutes of California at 663-664). In 1882, in Taylor v Hughes (62 Cal. 38 -1882), the court found Taylor guilty for failing to keep the fishway in good repair on his dam on Papermill Creek, in Marin County.

The legislature on May 24, 1915, amended Penal Code Section 637 requiring that the owners of dams shall allow sufficient water at all times to pass through the fishway for the purposes of keeping fish below the dam "in good condition" (emphasis added). Section 637 also provided that during minimum water flows, the dam owner could pass water through a culvert, waste gate, over or around the dam in order to keep "in good condition" any fish that may exist or planted below the dam (Ch. 492, 1915 Statute. of Cal. at 820).

On April 11, 1933, the Governor signed the Act Establishing the Fish and Game Code. Obstructions and Fish Screens are contained in Article 2. Section 637 of the Penal Code was incorporated into Section 525 of the Fish and Game Code. However several earlier Sections provide additional meaning to Section 525. Section 520.5 requires that plans for any dam in any stream be submitted to the Fish and Game for review to see if fishways are necessary. Section 521 requires the Commission to examine all dams on all rivers of the state naturally frequented by salmon, trout, shad, and other fish. Section 522 requires owners of dams that obstruct fish migration to build a fishway. Section 523 requires that the owner of a fishway must keep the facility in good repair and free of blockage. Section 524 states that it is unlawful to willfully destroy, injure or obstruct any fishway. Section 525 requires that the owner of any dam shall allow sufficient water at all times to pass through the fishway to keep in "good condition" any fish that may be planted or exist below the dam. This Section also provided that during the minimum flow, the dam owner could pass water through a culvert, waste gate, over or around the dam to keep in "good condition" any fish that may be planted or exist below the dam. when in the judgment of the Commission, it is impractical or detrimental to the owner to pass the water through the fishway. Section 626 states that that if the construction of a fishway is impractical, the Commission may order the construction of a hatchery and related facilities instead of a fishway at the expense of the dam owner (Ch. 73, 1933 Stat. of Cal. 394, 442-443).

On June 19, 1937, the legislature passed An Act to Amend Section 525 of the Fish and Game Code relative to water flow through a dam. Section 525 now reads "The owners of any dams shall allow sufficient water at all times to pass through the fishway, or in the absence of a fishway, allow sufficient water to pass over, around or through the dam, to keep in "good condition" any fish that may be planted or exist below the dam.(456 Stat. of Cal. 1937 - 1400).

Fish and Game Code Section 5937 (Passage of water for fish below a dam) incorporates Penal code Section 637, and Section 525 as amend in 1937, and now reads, "The owner of any dam shall allow sufficient water at all times to pass through the fishway, or in the absence of a fishway, allow sufficient water to pass over, around or through the dam, to keep in "good condition" any fish that may be planted or exist below the dam. The fishway (fish ladder) is to assist the migration of adult salmon and steelhead to their historic spawning grounds and nursery areas. The Cal Trout 1 Court (tributaries to Mono Lake) stated the stream flows needed to maintain fish in "good condition" are to be determined first before water allocation. The flow regimen is to maintain the aquatic ecosystem and fish populations in "good condition" in the stream that that may reside or may be planted below the dam.

Political favors have played a major role regarding the enforcement of Fish and Game Code Section 5937. Courts have taken over that role. People or organizations have stepped up to file lawsuits to enforce Code Section 5937. The National Audubon Society at Mono Lake; the Natural Resources Defense Council at Friant Dam / San Joaquin River; and California Trout regarding flows in tributaries to Mono Lake. However it was Marks v. Whitney (6 Cal.3d 251 -1971) Court that broadened the definition of the public trust protection in navigable water and tidelands to include the thinking of today. The Marks Court (at 260) stated that there is growing public recognition that one of the most important public uses of the tidelands, a use encompassed with the tidelands trust, is the preservation of those lands in their natural state, so that they may serve as ecological units for scientific study, as open space, as environments which provide food and habitat for birds and marine life, and which favorably affect the scenery and climate of an area. The Court stated it was not necessary to define precisely all public uses which encumber tidelands. The Court also affirmed that any member of the public has standing to raise a claim of harm the public trust.

Public Trust in Fish

There is a public trust in waters of the State (includes quality, quantity and timing) and a public trust in fish, other aquatic life and wildlife of those waters. The California Supreme Court in People v. Truckee Lumber Co. (116 Cal 397 -1897) stated: that the fish within our waters is unique property called wild game, the general right and ownership is with the people of the state, and the power to protect and preserve such property is a recognized prerogative of the sovereign. The people also learned that it is a well established principle that every person shall use and enjoy his own property, however absolute and unqualified his title, so his use shall not be injurious to the equal enjoyment of others having an equal right to the enjoyment of their property, nor injurious to the rights of the public. Truckee Lumber Co. was letting / dumping sawdust, slabs, shaving and other substances in to the Truckee River. The effect was to pollute the Truckee River, kill trout and other aquatic life and destroy a fishery. This pollution destroyed beneficial uses of the Truckee River as a water supply, as habitat for the fish and destroy a trout fishery. All of which was alleged to be in violation of the rights of the people, and a public nuisance. Truckee Lumber Company's pollution was deemed to violate the rights of the people and a public nuisance under statute and common law. The State's police powers were used to enjoin Truckee Lumber's actions. However the Public Trust Doctrine could have been used along with nuisance law.

The State owns the fish in its waters in trust for the benefit of the people and future generations. This ownership extends to all waters within the State, public or private, where

these fish live or historically used for migration, spawning, rearing and other purposes. Therefore the people have a property interest in the State's fish and wildlife resources. The Public Trust Doctrine can limit private water rights in order to protect inherent public trust values. Following the Audubon lead, the Court in Light v. SWRCB (173 Cal Rptr 3d 200, July 2014) used the Public Trust Doctrine to restrict the use of water to help protect young salmon and steelhead from the affects of water diversion. In Environmental Law Foundation v. SWRCB, (Superior Court, Sacramento County, Case No.34–2010- 80000583, filed July 15, 2014) the Court used the Public Trust Doctrine and the State's fiduciary obligation to protect trust resources, uses and values of Scott River from the affects of groundwater pumping.

At the present time, Delta smelt are nearing extinction, the winter and spring runs of Chinook salmon, the steelhead trout of the Central Valley, the green sturgeon, and the Longfin smelt are listed under the Federal or State list of Endangered or Threatened Species, and are all struggling to survive in the face of habitat uncertainty and heavy Delta exports.

There is continuing pressure to divert more and more water.

There is continuing pressure from out-of-the-area water purveyors, politicians, and corporate agriculture to take more and more water from Northern and Central California rivers and streams. Past efforts have severely impacted fish resources, their habitats, associated uses and values in Areas of Origin watersheds. The impact is not only by the direct taking, harming or killing of California's salmon and steelhead adults or stranding their eggs on the spawning beds, but by starving them of habitat (diverting water), leaving their habitat too warm or so polluted that it is lethal to adults and young or their food web can be toxic.

This pressure is being led by water districts and farming interests wanting cheap water because they have mined their groundwater. Wells were dug deeper and deeper with more and more water pumped. Pumping costs became prohibitive, but they continued to mine their groundwater. They pleaded to politicians to obtain more Northern California water as a replacement and supplemental supply. The politicians obliged. Millions of dollars were spent. The first Central Valley Project water was delivered on the east side in the mid 1940 (from Friant) and on the west side in the late 1940s and early 1950s from the Delta.

Approximately 5,200 square miles of the San Joaquin Valley have experienced land subsidence of more than 1 foot because of groundwater mining. The maximum subsidence of 29.6 feet recorded between 1925 and 1977 was in western Fresno County. However the extent of land subsidence generally coincides with those areas that have been significantly over drafted, (USGS –1991 in Trinity River MFR-EIS Report, Oct -2000.) This groundwater mining continued during the 1976-77 and through the 1987-92 drought conditions. Land subsidence continued affecting the capacity of the Delta Mendota Canal, the California Aqueduct and other water delivery canals and stream courses resulting in some flooding of low lands. A 9 meter subsidence occurred in the Los Banos - Kettlemen City area between 1926 and 1981 (Sneed, Brandt and Solt - 2013.)

In the mid 1950s, the California Department of Water Resources acknowledged that the water draining from the Panoche area (West side San Joaquin Valley -WSJV) was highly concentrated from a quality stand point that was unusable for any beneficial purposes. Total

dissolved solids in ppm 6,367; chlorides in ppm 1,979; boron in ppm 12.8; sulfates in ppp 2,058; percent sodium 65 percent. Selenium, the scourge of the agricultural drainage - Kesterson NWR history (1983) apparently was not sampled (DWR Bulletin 89, Dec 1960.)

The U.S. Fish and Wildlife Service reported that the San Luis Unit which has been irrigated for about 50 years, has about 379,000 acres of land that are drainage impaired. The meaning is that there is a perched water table close to the soil surface that contains high concentrations of toxic salts and trace elements including selenium and boron. Findings by Scudiero, et al (in Oct. - Dec. 2017, California Agriculture) that there are 780,000 acres of salt affected lands (root zone depth of 3 to 5 feet) on the WSJV. This represented about 45 percent of the mapped farmland; 30 percent of that acreage is strongly or extremely saline. Much of this acreage with in the Westlands Water District.

With continued irrigation of the up slope lands, the hydraulic head generated by adding more water will gradually leach the selenium, boron, other minerals and salts associated with soil profile and move that leachate down slope to the low lands and waters of the Valley trough. This accumulation of selenium, boron, other minerals and salts will continue to occur as long as water is applied to the up slope lands.

West side San Joaquin Valley corporate farms are again crying and pleading for more water, because they continue to mine their groundwater. These "too big to fail" corporate farms are claiming water shortages, while holding very junior water contract rights, not state issued water rights. They want to be bailed out again. Through their political friends, they want the Bureau of Reclamation to deliver more taxpayer-subsidized CVP water to them at the expense of North and Central California and Bay-Delta area of origin water, fisheries, fish resources, wetlands and other public trust interests, and higher priority needs of Sacramento Valley farms, communities and regions. More water imported in to the WSJV does not hold much hope of reducing the perched and toxic water table or improving conditions for the peoples' fish and wildlife properties.

The State Water Resources Control Board in its Agricultural Water Management for Water Purveyors, (September 1984) defined what constitutes an unreasonable use of water. The State Board stated "Failure to take appropriate measures to minimize excess water application, excess incidental losses, or degradation of water quality constitutes unreasonable use of water. Therefore continuing to irrigate saline seleniferous soils with resultant drainage and wastewater is by definition a waste and unreasonable use of water and a nuisance.

The State Board with the selenium - deformed bird issue in the news almost every day, followed its Order WQ 85-1(February 1985). The Water Board found that agricultural drainage and wastewater reaching Kesterson Reservoir "is creating and threatening to create conditions of pollution and nuisance." The Order then warned "If the Bureau closes Kesterson Reservoir and continues to supply irrigation water to Westlands Water District without implementing an adequate disposal option, continued irrigation in the affected area of Westlands Water District could constitute an unreasonable use of water" (Emphasis added).

The Bureau of Reclamation is being put on notice that any irrigation of selenium, boron and salt contaminated lands of Westlands WD or other areas could constitute an "unreasonable use of water." It was the people's uproar of seeing pictures of deformed wildlife on the nightly dinner time TV news that got the attention of Bureau of Reclamation managers to cease disposing of agricultural drainage containing selenium, boron, and other salts that were poisoning the food chain of migratory birds and other wildlife on private lands and state waters. The use of any augmented water supply on such areas should be monitored by the USGS and the State Board for any violations. The State Board, if necessary, should take the appropriate enforcement actions to protect the public trust.

Area of Origin Provisions of California Water laws

As least as early as the 1920's the State Engineer and the Legislature recognized that in order to transfer Sacramento River water to the San Joaquin Valley, they would have to protect the waters and beneficial uses of water where the water originates. The people of Central and Northern California wanted their waters, resources, present and future agricultural lands and communities protected. The promise made was that only water "excess" or "surplus" to areas or county of origin needs would be exported. After numerous attempts, an amendment was added to the State's Central Valley Project in 1931. This amendment became Section 11 of California's Central Valley Project, approved by on August 5, 1933 and became Sections 11460 – 11463 of the California Water Code.

Additional laws were also enacted. These "Area of Origin" provisions of California water law are legislative expressions of the people's desires to protect resources, uses, and values of the areas where the waters originate. The various Area of Origin statutes include:

The County of Origin Act - 1931 (Cal. Water Code Section 10500 -10505), reserves the water supplies necessary for the development of the counties of origin. These waters are held under State filings. Section 10505 states, "No priority under this part shall be released nor assignment made of any application that will, in the judgment of the board, deprive the county in which the water covered by the application originates of any such water necessary for the development of the county"

The Watershed of Origin Protection Act (Cal. Water Code Sections 11460-11463) was included as a part of the State Central Valley Project Act passed in 1933. Section 11460:

> "In the construction and operation by the department of any project under the provisions of this part, a watershed or area wherein water originates, or an area immediately adjacent thereto which can conveniently be supplied with water there from, shall not be deprived by the department directly or indirectly of the prior right to all the water reasonably required to adequately supply the beneficial needs of the watershed, area or any of the inhabitants or property owners therein."

Section 11463:

> "In the construction and operation by the department of any project under the provisions of this part, no exchange of the water of any watershed or area for the water of any other watershed or area may be made by the department unless the water requirements of the watershed or area in which the exchange is made, are first and at

all times met and satisfied to the extent that the requirement would have been met were the exchange not made, and no right to the use of water shall be gained or lost by reason of any such exchange." (Underlining for emphasis.)

The Delta Protection Act of 1959, (Cal. Water Code Sections 12200-12205) includes the policy statement that that no person, corporation, public or private agency or the State or the United States should divert water from the channels of the Sacramento- San Joaquin Delta to which the users within the Delta have first priority. The owners and users holding Delta water rights also have rights to water of appropriate quality to meet their needs before water can be exported to areas of water deficiency.

Water Code Section 11128, states, "The limitations prescribed in Sections 11460 and 11463 shall also apply to any agency of the State or Federal Government which shall undertake the construction or operation of the project, or any unit thereof ... ."

These California Water Code Sections clearly operate to limit the amount of water that can be transferred or exported out of the Sacramento and Delta basins by the operators of the Central Valley Project and the State Water Project. Lawsuits have slowed the transfer of water, but there was no voluntary reduction on behalf of the projects' operators. The political route has been the chosen access of last resort.

A review of State and Federal reports, public statements, documents, etc, reveals they are replete with promises to protect the needs of the "Area of Origin". These documents refer to "surplus water" or "excess water" that is no longer needed to meet the needs of the Sacramento Valley and to repel salt water from entering the Delta, would be exported to the Western San Joaquin Valley. Department of the Interior officials endorsed this policy.

On Feb. 17,1945, the Joint Committee on Rivers and Flood Control of the California State Legislature posed to the Bureau, 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, Acting Regional Director R.S. Calland, quoted Section 11460 of the State Water Code, which is sometimes referred to as the County of Origin Act, then stated:

> "As viewed by the Bureau, it is the intent of this 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 municipal and industrial purposes or future maintenance of fish and wildlife resources." (CVP Authorizing Documents, 1956 at pg. 804 and 805.)

Secretary of the Interior Julius Krug stated on Oct 12, 1948: "Let me state, clearly and finally, the Interior Department is fully and completely committed to the policy that no water which is needed in the Sacramento Valley will be sent out of it." He then added, "There is no intent on the part of the Bureau of Reclamation to ever divert from the Sacramento Valley a single acre-foot of water that might be used in the Valley now or later." (CVP Authorizing Documents, 1956 at pg. 694.)

There is no doubt that Northern California and Sacramento Valley residents were assured that only water "surplus to the needs of the Sacramento Valley" would be transported to the San Joaquin Valley. State laws passed (Water Code 11460 - 11463) gave strength to those assurances.

The San Joaquin Valley exchange contractors get first priority to Sacramento River water; other croplands are at a lower priority and get supplemental water. A typical 9(e) irrigation contract provides for the United States to furnish a supplemental water supply... In addition the United States is not liable for water shortages caused of operator error, drought, water rights permit and license conditions, all applicable state and federal laws. The more junior the water contract the more likely the deliverable amount of water will be less than the desired maximum. (CVP Authorizing Documents, 1957, pg. 107-115.) The CVP contract between Westlands WD and the United States renewed in 2006 authorizes the delivery of up to 1,150,000 acre-feet per year if consistent with all applicable State water right permits and licenses, all State and Federal laws and that water is available that is not needed to protect resources in the Sacramento Valley and Bay-Delta. Westlands WD representatives know the water was pumped out of the Delta and that the updated contracts explicitly address the uncertainty of water delivery.

Fundamental restrictions on federal water development projects are discussed in the Reclamation Act of June 17, 1902. In Section 8 among other things it states:

> "That nothing in this Act shall ...interfere with the laws of any state; ... and the Secretary of the Interior, in carrying out the provisions of this Act, shall proceed in conformity with such laws, and nothing herein shall in any way affect any right of any State or of the Federal Government or of any landowner, appropriator, or user of water in, to, or from any interstate stream or the waters thereof: Provided, that the right to the use of water acquired under the provisions of this Act shall be appurtenant to the land irrigated, and beneficial use shall be the basis, the measure, and the limit of the right. (Emphasis added.)

The various units of the CVP are integrated and coordinated from an operational and financial standpoint for the fullest and most beneficial uses of the land and water resources available for the widest public benefit consistent with applicable state and federal laws. From a fisheries standpoint there is little integration of operation. The CVP's Folsom Reservoir, on the American River is on the first call for water to met water quality needs in the Delta, to assist export, and to release water when Shasta Reservoir has a storage conservation shortfall or in need to conserve its cold water storage.

Some CVP units contain specific language in the authorizing document for conserving, protecting or improving the people's fish, water and wildlife properties of the area of origin. For example, the October 14, 1949 Act reauthorizing the CVP to include the American River development, states in Section 2, "... the use of water in accord with State water laws, including but not limited to such laws giving priority to the counties and areas of origin for present and future needs." Another example, the August 12, 1955 authorization of the Trinity River Division states in Section 2, ..."the Secretary is authorized and directed to adopt appropriate measures to insure the preservation and propagation of fish and wildlife including but not limited to maintenance of stream flow down stream of Lewiston...." The meaning is instream flow (in excess of statutorily prescribed minimum) as determined by the Secretary to meet in-basin needs takes precedence over needs to be served by out-of-basin.

The purpose and intent of County of Origin and Watershed Protection Laws and specific language in Act authorizing CVP Units, are to reserve for the areas / counties where the water originates and the Delta, a right to such waters for present and future needs. Such areas have a preferential or paramount right to such waters for beneficial uses over areas outside of the basin, even though the outside area may have a greater perceived need. Areas of low rainfall, usually 8 to 10 inches or less and with a 60 to 70 inch of pan evaporation rate need a significantly greater amount of supplemental water than it takes to grow the same crops in the Sacramento Valley and Delta region.

An interesting insight is found in a Bureau of the Budget's letter of July 24, 1953, to the Secretary of the Interior commenting on legislation to that went on to reauthorize the Central Valley Project by Public Law 674, in August 17, 1954. The letter states "that the costs for correcting damages to fish and wildlife resources caused by the building of projects should be treated as part of the construction costs and allocated to the various purposes in the same manner as other damages, including relocations." The meaning of this quote, is that the people's water, fish and wildlife (trust resources) impacted by such projects must be protected and damages that incur are to be corrected as a cost of the project and that such costs are to be borne by the project users and beneficiaries (CVP Authorizing Documents 1956 at pg. 841 - 42.) This Bureau of the Budget statement has either been ignored, down played or conveniently forgotten by Bureau of Reclamation managers and their agricultural sponsors.

The Reclamation Projects Authorization and Adjustment Act of 1992 (Public Law 102-575), which included Title XXXIV- Central Valley Project Improvement Act (CVPIA) was signed into law October 30, 1992. The CVPIA amended previous authorizations of the CVP to include fish and wildlife protection, restoration, and mitigation as project purposes having equal priority with irrigation and domestic water supply uses, and fish and wildlife enhancement having an equal priority with power generation. Section 3406 (a) (3) added: The mitigation for fish and wildlife losses incurred by the construction operation and maintenance shall be based on the replacement of ecologically equivalent habitat.

The purposes of the CVPIA are defined in Section 3402 of the Act: (a) to protect, restore, and enhance fish, wildlife, and associated habitats in the Central Valley and Trinity River Basin of California; (b) to address impacts of the CVP on fish, wildlife, and associated habitats; (c) to improve the operational flexibility of the CVP; (d) to increase water-related

benefits provided by the CVP to the State of California through expanded use of voluntary water transfers and improved water conservation; (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; and (f) to achieve a reasonable balance among competing demands for use of CVP water, including the requirements of fish and wildlife, agriculture, and municipal, industrial, and power contractors. Section 3406 (a) (3) added: The mitigation for fish and wildlife losses incurred by the construction operation and maintenance shall be based on the replacement of ecologically equivalent habitat. CVPIA Sec. 3406 (b) (23) (B) requires that costs associated with Trinity fishery restoration and maintenance be billed to the CVP contractors as O&M costs. The CVPIA Sec. 3407 established a Restoration Fund to pay for fish and wildlife habitat restoration, improvement and mitigation activities.

The Public Trust Doctrine and The National Audubon Society Mono Lake Decision

The Bureau of Reclamation (really the Regional Solicitor) long before the National Audubon Society decision, was not supportive of the public trust doctrine relative to Federal projects. The Audubon (National Audubon Society v. Department of Water and Power, City of Los Angeles, -33 Cal 3d419, 658 P 2d 709, 189 Cal. Rpt. 346, cert. Denied 464 U.S. 977 -1983, also called Mono Lake) decision extended public trust protection to Mono Lake and its tributaries. Audubon was a transformative decision regarding the public trust protection of fish and wildlife, water quality, aquatic habitats, and environmental amenities. This case involved the near total diversion of Mono Lake inflow from 5 tributary streams. This resulted in the level of Mono Lake dropping 43 feet from pre-diversion level. The surface area had diminished by one-third threatening the brine shrimp fishery, and nesting islands important to migratory birds, i.e. California gulls. Mono Lake's brine shrimp, a food source along the migration route of thousands and thousands of Northern Phalarope, Wilson Phatarope and Eared Grebes, was threatened. A unique recreational, scenic, and scientific resource was threatened by the near total diversion of tributary inflow.

The Audubon decision re-enforced many earlier public trust findings and clarified or broadened the meaning of others. Audubon gave guidance to the State Board to be proactive to protect the public trust rather then being merely reactive. Some major points of Audubon decision include:

Public Trust Doctrine protects navigable waters from harm caused by diversion of non-navigable tributaries (pg. 357).

Parties holding permission to use water hold those rights subject to the trust and if water is used for trust purposes, there is no taking issue (pgs. 359-360).

Public trust protection includes the protection of ecological and biological aspects of State's waters whether navigable or not (pgs. 360-361).

The State Board has the authority and duty to take the public trust into account and to avoid or minimize damage to fish, wildlife, and water quality in the allocation and use of water (pgs. 363-364).

The State Board has continuous authority and supervisory control to vigorously protect public trust lands and waters to prevent harmful impacts to resources. uses and values protected by the public trust (pg. 364).

The State Board can reconsider past water allocations, modify or revoke such allocation at any time under its continuous authority (pg. 365).

The Audubon case verified findings of earlier Public trust cases. A key point made by Audubon was "the public trust is more than the affirmation of State powers to use public property for public purposes. It is an affirmation of duty of the State to protect the people's common heritage of streams, lakes, marshlands and tidelands, surrendering that right of protection only in rate cases when abandonment of that right is consistent with the purposes of the trust" (Audubon at 360-361, underlining added for emphasis).

The Audubon Court tied the protection of the public trust assets to the maintenance of natural resources for their innate values and not to private beneficial uses of water (Koehler - 1995). The Illinois Central Court protected the lands and waters of the Chicago / Lake Michigan waterfront for the benefit of all the people and future generations, not the private interests of the Illinois Central Railroad.

The State Board's Mono Lake Basin Water Rights Decision -1631 of September 1994, set the stage for restoring Mono Lake and several tributaries by setting fishery protection flows, lake elevation to be attained, and the protection of public trusts resources and interests of Mono Lake and the Mono Lake Basin.

Adolph Moskovitz, an old time water lawyer headed the Los Angeles Department of Water and Power legal team involved in the National Audubon -Mono Lake case. Speaking to the Sacramento Area Water Forum, he described the Public Trust Doctrine as multi-faceted involving many resources, uses, and ecological values. Protecting the public trust is not just another use co-equal with irrigation, power production, an industrial use, or leaching salt from soils, etc. Protecting the public trust, including the preservation and enhancement of fish, wildlife, and other aquatic resources, occupies an exalted position in any judicial and administrative determination of water resource allocation (March 3, 1994).

In 1986 the Court of Appeal issued what has become known as the Racanelli decision (US v State Water Resources Control Board, 227 Cal Rpt 161 -1986). The Racanelli decision re-enforced many of the Audubon findings, clarified others and gave the State Board additional guidelines / instructions for managing water quality to protect beneficial uses of the Delta. Some major points of Racanelli include:

The Court reminded all parties and all diverters of the "usufructuary" nature of a water allocation, (pgs. 167-168).

Instream uses are within the category of beneficial uses and include recreation and the preservation and enhancement of fish and wildlife resources (pg. 169).

Water rights are limited and uncertain. The water supply available is determined by by natural forces (pg. 170).

No one has a vested right to use water in a manner harmful to the state's water, associated resources, beneficial uses and values (pg. 171).

The State Board in its water quality role must provide reasonable protection for all beneficial uses of water (pg. 178).

The State Board should take a "global perspective" and consider all competing upstream diverters and polluters (past. present, and probable future beneficial uses of water) in its water quality and water planning activities (pgs. 179 -180).

The State Board should implement the necessary water quality standards against all factors that affect water quality i.e. against all other diverters and users of water (pgs. 179 -180).

The State Board can impose water quality standards to protect all beneficial uses on all upstream projects under its reserved jurisdiction (pg. 195).

The State Board has a mandate under California's Porter - Cologne Act and the Federal Water Pollution Control Acts to set standards to protect fish. shellfish, and wildlife and recreational uses of those waters (pg. 200).

The State Board has continuing authority and a public trust responsibility to reconsider past water allocation actions (pg. 201).

The State Board has the power and the duty to open past water allocations at any time to protect fish, wildlife and other beneficial uses of water (pg. 201).

Racanelli understood that to foster beneficial uses, to preserve and protect water quality and fish and wildlife resources of the Delta-Estuary, one must take a **"global perspective"** of the issue involved. This "**global perspective**" would be the entire Central Valley watershed tributary to the Delta -Estuary, plus the Trinity / Klamath River system because Trinity River water is diverted to the Central Valley for export (Bold lettering added for emphasis.)

Racanelli also understood that preserving and protecting water quality stretches the water supply and protects beneficial uses. The term "beneficial uses" means beneficial to the appropriator and water contractor and not harmful to public trust resources, uses, values and other beneficial uses. For example, the disposal of wastewater and drainage to state waters is not a beneficial use because the act and its destructive aspects are detrimental to beneficial uses (Johnson -1989).

Water quality is critical to the productivity of water as an ecosystem and as a commodity for domestic, irrigation and industrial uses and numerous uses protected by the public trust. A river can be lost to the farmer; - to fish; as a place to recreate or as a water supply. It can be diverted, polluted, misused or over appropriated. Aldo Leopold looking for a way to make the principles of ecology clear and vivid, suggests that nature is a Round River, (i.e. the hydrologic cycle), continuously flowing into itself, going through all the soils, the flora and fauna of the earth, while supporting many resources, uses, and ecological values (Worster -1984). Therefore any pollution by persistent and bio-accumulative chemicals and trace elements, such as a variety of salts and trace elements as selenium and boron, have no place in our Round River. Destroying one part of this river can destroy other parts, or all of it with the benefits to society severely degraded or lost.

Several rivers and streams are already fully utilized, over appropriated or are entirely consumed with little or no water making it to the Delta in an average year runoff. Over the years water from the upper watersheds of Bear, Cache Creek, Calaveras, Chowchilla, Fresno, Kaweah, Kings, Kern, Tule, Putah Creek, and Stony Creek are for all practical purposes are almost totally consumed. At Friant, San Joaquin River, the State Water Board

awarded a water right of 2,210,000 AF annually for storage and diversion. This was 540,000 AF more than the annual runoff. In some situations only regulated minimum flow make it to the primary tributary and to the Delta. Rivers like the American and Feather provide water releases to the Delta to control water quality and for export. The Tuolumne, Mokelumne, Merced, and Stanislaus are heavy regulatory with only prescribed flows making it to the Delta. Some of the prescribed flows are believed to be inadequate to restore anadromous fisheries to recent historical population levels. The State Board is reviewing selected rivers to ascertain if their flow regimen are adequate to restore anadromous fish resources and may recommend flow regimen changes or other actions to accomplish restoration efforts.

The data in the following Table is from information compiled by Grantham and Veers, Environmental Research Letters -Aug 2014. The water right allocations are for agriculture, livestock, municipal and industrial purposes (consumable), not for hydro-power generation.

Table 1. *

River Basin – Watershed	Annual runoff in AF	Water right allocation non-hydro in AF	Percent runoff allocation (non-hydro)
American River	2,620,724	3,358,904	128
Bear River	326,298	428,589	131
Cache Creek	578,680	931,627	161
Calaveras River	198,974	714,587	359
Chowchilla River	77.489	222,600	287
Cosumnes River	467,319	246,329	52
Feather River	7,318,022	13,728,286	188
Fresno River	72,333	89,902	124
Kaweah River	434,586	287	1
Kern River	649,211	4,099,570	631
Kings River	1,458,772	1,144,778	79
Merced River	948,908	1,041,832	110
Mokelumne River	1,334,263	1,893,158	142
Putah Creek	382,213	2,570,784	673
Sacramento River	18,875,238	28,647,485	152
San Joaquin River	6,444,570	55,512,018	861
Stanislaus River	1,087,825	4,252,873	391
Stony Creek	400,195	217,161	54
Trinity River	4,868,811	4,568,424	94
Tule River	588,360	5,996	1
Tuolumne River	1,639,628	2,653,518	162
Yuba River (trib to F.R.)	2,404,631	2,929,002	122

At the watershed level one must consider its characteristics, resources, present and potential uses and values. The watershed may be habitat for a multitude of wildlife species including threatened and endangered birds, mammals, fish, plants, and other wildlife. It may provide spawning, nursery and rearing habitat for unique species such as Steelhead trout,

Chinook and Coho salmon. It may contain unique environmental values such as critical winter range for deer or important habitat for migratory birds. It must be realized that natural resources and environmental amenities have value that are not fully captured in our commodity / market place system (U.S. v. Union Pacific R. Co,, Eastern District of Cal. No. Civ S-06-1740 FCD/KJM, April 30,2008).

Requested actions

According to Bureau of Reclamation representatives it is their intent to live by the limitation of Water Code 11460 -11463 (CVP Authorizing Documents 1956.). Bureau of Reclamation representatives have said they intends to divert no water from any watershed which will or may be needed for beneficial uses within that watershed. The Bureau has attempted to estimate in its studies the present and future water needs for each watershed.

I request the Bureau of Reclamation, as a part of the preparation of an environmental impact statement regarding the, "Revisions to the Coordinated Long-term Operation of the Central Valley Project and the State Water Project, and Related Facilities", under take the following actions relative to this project.

Action: The Bureau of Reclamation should identify the water needs in its broadest context for each of the watersheds or sub-basins of the Sacramento Valley and Delta Region. This includes not only the municipal and industrial water needs, but the instream flows (including water quality) needed to protect anadromous fishes, other public trust resources, uses and values of each watershed or sub-basin.

Action: What is the Bureau of Reclamation definition of "excess" or "surplus water" in light of the broadened definition of Public Trust purposes uses and interests to be protected in light of the Marks court definition and potential irrigation, municipal water demands in the Sacramento Valley and Delta watersheds.

Action: The Bureau of Reclamation should identify the rivers and streams and associated watersheds it believes have "excess" or "surplus" water above their identified needs.

Action: The Bureau of Reclamation should lay out a detail plan with disposal mechanisms, locations and cost estimates of how it and its contractors are going to handle the drainage from the lands irrigated that is surely contain selenium, boron and other salts that will flow / drain from these lands.

Action: The Bureau of Reclamation should lay out a detailed plan of how it proposes to protect the fish and wildlife resources and their habitats affected by the operation of reservoirs it operates or controls to maximize the sale or use of such "excess" or "surplus" water.

Thank you for the opportunity to submit these comments.

Felix E. Smith
4720 Talus Way
Carmichael, CA 95608

Felix E. Smith

RECEIVED
JAN 29 2018

Jennifer Tanner
6280 W. Third St. #4-322
Los Angeles, Ca. 90036

January 21, 2018

Katrina Harrison
Project Harrison
Bureau of Reclamation
Bay-Delta Office
801 1 Street, Suite 140
Sacramento, CA 95814-2536

Dear, Ms. Harrison,

I am opposed to the Central Valley Project. It is a proposal that attempts to change the entire system, to divert precious water resources presently shared by all Californians and changed to the substantial benefit of only big- agribusiness and hydrocarbon industries in the Central Valley. These changes will have drastic negative effects on the lives of virtually all Californians, including of course, myself.

We need to encourage water conservation not waste. We feel Agriculture needs to adopt water conservation measures for long term prosperity, which this proposal does nothing for.

The CVP project will risk severe damage to vital habitats in the Delta and other regions, and will probably drive out many species, including salmon and smelt, to extinction, and harming industries, like fisheries, aquaculture and tourism in those areas.

We are concerned that when the drought returns, which it will, we will have drastically higher water costs for myself as resident and for businesses in the cities and suburbs, harming job growth, affordability, and middle, moderate and low income households.

And a big problem with this scenario is that a major benefactor won't be farmers at all, but the fracking industries, which require copious amounts of water to operate. California needs to accelerate its

conversion to less water intensive and less air and water quality damaging sources of energy, and not continue to subsidize the hydrocarbon industries at the expense our precious water resources.

This proposal may increase wildfire risks by diverting water, including irrigation water, away from some of the most vulnerable mid-coast and urban farming and land management fire-sheds, as they become more dessicated. This puts Californians at risk, especially with the recent wildfires showing how vulnerable we really are to this possibility.

Not least is the damage the oil and gas industry has done to our state, including air water quality, landscaping, and environmental damage.

And we are concerned about all of the Delta and Coastal habitats and wildlife that is so enjoyable and may be lost.

Thanks for considering my arguments against this proposal and how it would negatively impact many areas of my life without seeming to add in any perceptible way.

Best Regards,

Jennifer Tanner

Harrison, Katrina <kharrison@usbr.gov>

Fwd: Nature's Carbon Killers

Lawrence Easterling <leaster@wildblue.net> Mon, Jan 29, 2018 at 1:55 PM
To: kharrison@usbr.gov

See FACTS for additional information. Should you wish to contact me my telephone number is (831) 768-9972

Begin forwarded message:

From: Lawrence Easterling <leaster@wildblue.net>
Date: January 29, 2018 12:59:14 PM PST
To: kharrison@usbr.gov
Subject: Nature's Carbon Killers

For years forest management in California has been sorely neglected. The San Jose Mercury News this morning (Jan. 29th), reminds us that the greatest deterrent mother nature has to combat excessive carbine emissions are trees. The article estimates that the devastating fires which ravished California last year destroyed 129,000,000 trees. The neglect of proper stewardship of the state's forest is painfully evident to the casual observer who can see quite clearly, as travelers throughout California, the dead and dying trees that litter the landscape. Considering the political harping on why this state is paranoid about reducing carbine dioxide emissions, why have they ignored the obvious? According to the Mercury News and I quote "As California redoubles its efforts to reduce greenhouse gases officials are rooting around for new way to meet the state's goals from regulating harmful emissions solely from factories and cars to calling on nature to pitch in". The article goes on to explore various ways o solve this "problem", all,of which, involves the spending of huge amounts of money. Yet the most obvious plan to follow involves no money at all.

California is the most prolific farming state in the entire country. We who embrace the challenge of feeding this nation do so as dedicated stewards of the land. Nine of the top ten producing agricultural counties in America are found in California. The San Joaquin Valley has been recognized by Reuter's News Agency and The National Geographic Magazine as the most prolific producing farmland in the world. We are understandably proud of what we have accomplished here. We are, however also a great contributor to the state's environment, and this fact is often overlooked. The vast majority of our farmland is planted to "green" plants, many of which are permanent plantings such as trees. At present the number of acreage planted to fruit tees approaches two million acres. On average, plantings usually number 140 trees per acred. That equates to about 280,000,000 trees. Yet unbelievably, the state has placed these plantings in jeopardy. Unlike the poorly maintained forests of California, that are susceptible to fire, our trees are not. They are pruned yearly , the ground surrounding them is kept exceedingly clean plus nutrients are placed in the soil when needed to insure healthy growth. Thus, they are relatively safe from the ravages of fires that might grow out of control. However, they are susceptible to another element, which, if denied, can threaten their very existence, and that element is WATER.. Now this threat has become a reality due to life threatening regulations which severely restrict what was once a secure source of water. Until 2007 our water needs were made available to us from the giant water conveyance system that brought water to central and southern California. Now that same water is rerouted to the "environment ". Many of us now pay as much for water as all our other cultural costs combined.. PERMANENT CROPS MUST BE EXEMPT FROM WATER DEPRIVATION.

FACTS; Trees convert carbon dioxide to oxygen. For fifty years the state's average precipitation has been 200,000,000 acre feet of water per year. According to California's Department of Water Resources the CVP and the SWP, combined, delivered, on average, 5,400,000 acre feet of water, per year, from northern reservoirs to central and southern California. This met the needs of 4,000,000 aces of rich frmland and 25,000,000 people. The capacity of these two conveyance systems to deliver water is 8.000,000 acre feet. A great cushion for future years. Since 2008 water deliveries have been restricted to , on average, one acre foot of water per acre each year. For commercial crops it takes 3.5 acre feet of water a growing season.

Percent of US production grown in California: 99% Artichokes, almonds, plums, walnuts, dates,, grapes (raisin), pomegranates,.: 98% garlic, kiwifruit, pistachios, olives: 96% broccoli, figs, : 94% strawberries nectarines.

Thank you,

Harrison, Katrina <kharrison@usbr.gov>

Comments on the NOI to Prepare an EIS

Mark Simpson <simpson-mark@sbcglobal.net> Mon, Jan 29, 2018 at 12:34 PM
To: kharrison@usbr.gov

I strongly oppose any modification to existing water quotas as it negatively impacts water salinity in the delta where we live. We have been residents for 25 years in the South Delta and have been seeing salinity levels increase, invasive species of aquatic weeds take hold and even new populations of Sea Lions in our bays all evidence that even at the current volume of exporting water south it is ruining the Delta and our way of life. Please do not increase the amount of water taken from the Delta.

Mark Simpson

Discovery Bay

Comment Card for

EIS for the Revisions to the Coordinated Long-Term Operation of the Central Valley Project and State Water Project and Related Facilities

Thank you for your interest in providing information to consider for the Environmental Impact Statement for the Revisions to the Coordinated Long-term Operation of the Central Valley Project and State Water Project and Related Facilities

Name Mike Smith **Phone Number** 925 250 7200 **Email** mike.sm64@gmail.com
Organization Represented —
Address P.O. Box 445 ~~North San Juan, CA 95960~~
City North San Juan **State** CA **Zip** 95960
Public Comment 1) Please include as a condition on any alternative considered that the reliability and quality of water from the source watersheds will not be diminished.
2) Please affirm with confidence and full disclosure the amounts of water that are available in the Sacramento River watershed and - including variability ranges and any trends.

Thank you for your attentions.
- Mike Smith

How did you hear about this meeting? (Please check one)
☐ Newspaper Ad ☐ Reclamation Website ☐ Social Media ☐ Email Announcement ☒ Other: email Aqualliance

Please leave this card in a drop box at the public scoping meeting or add postage and place the stapled, self-addressed mailer in any U.S. mailbox. Written comments will be accepted until close of business, Thursday, February 1, 2018.

RECEIVED
JAN 29 2018

Katrina Harrison
Bureau of Reclamation, Bay Delta Office
801 I Street, Suite 140
Sacramento, CA 95814-2536

Place Postage Here

Katrina Harrison
Bureau of Reclamation, Bay Delta Office
801 I Street, Suite 140
Sacramento, CA 95814-2536

Revisions to the Coordinated Long-term Operation of the Central Valley Project and State Water Project and Related Facilities

Harrison, Katrina <kharrison@usbr.gov>

Revisions to the Coordinated Long-Term Operation of the Central Valley Project and State Water Project, and Related Facilities

Phil Grosse <philgrosse@gmail.com> Mon, Jan 29, 2018 at 1:42 PM
To: kharrison@usbr.gov

Ms. Harrison:

I read with increasing concern the notice in the Federal Register regarding this notice of intent. With all the problems facing water systems in California, from habitat destruction to aging infrastructure to Delta degradation, it's almost impossible to believe that the government would be engaging in such a dishonest and cynical exercise as this.

Almost impossible, unless one has been following the century-old effort to take water from Northern California, and consequences be damned.

Stated purpose: "To maximize water deliveries and optimize power generation."

Concern for the environment: "Augment operational flexibility by addressing the status of listed species." And "Evaluate stressors on fish other than CVP and SWP operations." And "Evaluate potential changes in laws, regulations, and infrastructure that may benefit power marketability."

And to what purpose might the government consider habitat restoration? ". . . habitat restoration . . . designed to increase operational flexibility, [and] increase water supply for CVP . . . '

Allow me to translate into plain English: Grab the water, as much and as fast as you can, find ways around Endangered Species concerns, look for stressors on fish that you can use to distract people and blame for the environmental damage caused by the CVP and the SWP, change whatever laws and regulations you have to, and only consider doing any remedial work if it increases water that can be shipped south.

Only a barely susceptible nod to any environmental concerns whatever, and no mention at all of the residents and farms in the Delta. Shameful.

The Governor's misbegotten tunnel project is on the ropes, as not even the WWD wants to pay for it. Repairs at Oroville are not even finished yet, and the temporary repairs accomplished to date may not prove adequate. Many, many other dams in the State have not received the scrutiny that Oroville has, and may need billions of dollars in repair. And of course, the Central Valley is subsiding, and the Delta is still in need of rescuing. And the

best idea we can come up with is "Ship more water south"?

Wow.

We can, and we must, do better. A few municipalities and districts had the foresight to say no thanks to the tunnels, opting instead for more future-facing approaches, confident that their needs could be satisfied by more environmentally sensitive methods. That is what this State needs.

We should not spend another minute or another dollar on the EIR. Welcome to the 21st century.

My contact information is below, as required. Please use my name and city, but keep all other information confidential, if possible.

Phil Grosse

1709 Sarkesian Drive

Petaluma CA 94954

707.763.8308

philgrosse@gmail.com

Nelson, Benjamin <bcnelson@usbr .gov>

Fw: California W ater (Central V alley Project, State W ater Project, T unnels, etc.)

Tasha Levinson <tdian@sbcglobal.net> Mon, Jan 29, 2018 at 11:48 AM
Reply-To: Tasha Levinson <tdian@sbcglobal.net>
To: "bcnelson@usbr.gov" <bcnelson@usbr.gov>

Ms. Harrison's e-mail automatically tells me I should send this to you, Mr. Nelson, instead of her. thank you

----- Forwarded Message -----
From: Tasha Levinson <tdian@sbcglobal.net>
To: "kharrison@usbr.gov" <kharrison@usbr.gov>; "Janiene.Friend@water.ca.gov" <Janiene.Friend@water.ca.gov>
Sent: Monday, January 29, 2018 11:41 AM
Subject: California Water (Central Valley Project, State Water Project, Tunnels, etc.)

I am a California resident who has lived in Southern and Northern California and who has seen the lunacy of our state and federal water management at numerous DWR events and, most recently at the Bureau of Reclamation event held in Chico on January 25, 2018. Through the bluster, I have heard some solution-oriented ideas that I note below:

1. One of the major uses of water we have is to deal with the salinity of the Sacramento Delta. Nature's solution is to flush out the delta with fresh water. In Europe, on the Rhine, they have been using a gate system that limits the intrusion of salt-water; such a system likely could be established in California on the Carquinez Strait. Copies of an article describing this system have been provided to the Bureau of Reclamation and DWR, but apparently ignored. Such a system also likely would eliminate any need for the single and/or twin-tunnels.

2. One of the other major concerns is water storage because the lakes and reservoirs are catching and retaining sediments so that their storage capacity is substantially less than their advertised capacities. I am informed by water engineers that, if we could put in small dams near the inflow points of such lakes and reservoirs, AND, ANNUALLY dredge out the sediments from such small dams (to ship it to nearby farm lands), gradually the fresh-water storage capacity of the existing lakes and reservoirs would be substantially increased.

3. Finally, something must be done so that water conservation efforts throughout Southern California are reflective of the fact that that area is a desert. Northern California already is suffering its own water shortages and certainly does not have the resources to keep up the pretense that Southern California should be able to use as much water as it chooses. Further, having seen what pumping groundwater has done to areas of Southern California (where ground levels have sunk more than 20 feet); Northern California's groundwater should not be thought of as something that can be transferred.

4. Whomever is in charge of permitting private companies to tap into our natural spring waters so that they can bottle and sell the same should be stopped! There is something inherently wrong with exploiting natural resources to the detriment of the public so that a very few rich companies and farms can get richer that is just wrong. That is not government by the people or for the people.

Thank you for your attention.

Tasha Levinson
1453 Bridge Street
Oroville, CA 95966
tdian@sbcglobal.net

Harrison, Katrina <kharrison@usbr.gov>

Maximize Delta Exports??? Please NO!

Ethan Derby <ethanderby@gmail.com> Tue, Jan 30, 2018 at 6:54 PM
To: kharrison@usbr.gov

,

I would like you to consider not maximizing CA Delta water exports. Taking water out of the ecosystem for money is not worth it. The only reason for taking more water is to irrigate crops that should not be grown in this climate. Not only that, there will be very few people that gain from this. Mostly in profits for nuts and other exports that do not help our state or country.

The water being siphoned off of the CA Delta is needed to maintain and hopefully one day rebuild the depleted salmon population. The amount of money generated from a healthy salmon population will far exceed that of nuts! Not only that, the money will be distributed across the state to commercial fisherman, sport fisherman and all the industries that support them.

Please don't allow any more water to be diverted from the CA Delta. We should be working on ways to decrease the exports and find new ways to use the land. Nuts just doesn't make sense in the Central Valley.

The profits of a few big business in the Agriculture Industry should not out way the money earned from all the businesses supporting fishing in CA. Few vs Many...it doesn't add up.

It is truly Nuts!!!

Please, no more CA Delta exports!!!

--
Ethan Derby
ED Controls
ethanderby@gmail.com
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Harrison, Katrina <kharrison@usbr.gov>

EIS, Revisions to the Coordinated LongTerm Operation of the Central Valley Project and State Water Project, and Related Facilities

Joy Sterling <Joy@ironhorsevineyards.com> Tue, Jan 30, 2018 at 10:19 AM
To: kharrison@usbr.gov

Dear Ms. Harrison, I am responding to Reclamation's request for comments on "EIS, Revisions to the Coordinated Long-Term Operation of the Central Valley Project and State Water Project and Related Facilities".

- The project seems very vague. I want to reserve the opportunity to make a comment later when it is more clearly defined.
- The comment period is uncomfortably short - just one month, and very concerning that it was published in the Federal Register on December 29.
- There is barely a nod to environmental concerns.
- It comes across an unadulterated water grab.

Please put me on the notification list for any public information about this project.

Thank you, Joy Sterling

Harrison, Katrina <kharrison@usbr.gov>

Water for Fish

kbevard <kbevard@gmail.com> Tue, Jan 30, 2018 at 8:13 AM
To: kharrison@usbr.gov

Good morning,

I am writing to plead with the bureau to design a system of water delivery which sustains fish populations.

It is imperative that humankind, in our planning for agriculture and population growth, first consider true ecosystem protections.

We are an intelligent species and have the capability to implement better water and land management practices for the preservation of species which feed other species, especially since that food chain is responsible for the air we breathe everyday.

Can anyone at the bureau define our cvpia as responsible to nature? I wonder what John Muir would state about our state of affairs.

Respectfully submitted,
Kristi A. Bevard

Sent from my Verizon, Samsung Galaxy smartphone

Harrison, Katrina <kharrison@usbr.gov>

Central Valley water distribution

Shari Bradley <sbrad2004@sbcglobal.net> Tue, Jan 30, 2018 at 3:38 PM
Reply-To: Shari Bradley <sbrad2004@sbcglobal.net>
To: "kharrison@usbr.gov" <kharrison@usbr.gov>

Dear Ms. Harrison,

As a life-long resident of California, issues in this state are of great importance to me. Water supply for the Central Valley has been a heartbreaking issue for such a long time, with generational farmers losing their land, their livelihood, and their heritage, not to mention the crops that are not able to grow. There must be a compromise that would make water available to the remaining farmers and allow them to provide the necessary, healthy crops for so many.

If there is anything you and your organization can do to alleviate this dreadful situation, you would have the tremendous gratitude of so very many Californians and people around the world who benefit from these crops.

Thank you for your consideration.

Sincerely,

Shari Bradley, Vista CA

Harrison, Katrina <kharrison@usbr.gov>

CVP

Steve Malanca <21sam9r@comcast.net> Tue, Jan 30, 2018 at 7:12 PM
To: kharrison@usbr.gov

Katrina Harrison
Project Manager, Bureau of Reclamation,
Bay-Delta Office,
801 I Street, Suite 140,
Sacramento, CA 95814–2536

Dear Ms. Harrison:

I strongly support the Bureau of Reclamation (Bureau) efforts to improve the operation of the Central Valley Project (CVP) and provide a more robust and reliable water supply to communities South of the Delta as outlined in the Bureau "Notice of Intent To Prepare a Draft Environmental Impact Statement, Revisions to the Coordinated Long- Term Operation of the Central Valley Project and State Water Project, and Related Facilities."

The Bureau action is needed to study operations of the CVP water system in order to improve it's operation to meet a significant project goal of providing adequate and dependable water supplies to CVP contractors that rely on the system for irrigation water. We agree with the BOR's determination to evaluate alternatives that will increase storage capacity and optimize capabilities through the Delta, generate additional water or that improve the utilization of water such as desalinization, water conservation, or water reuse, modify operations of the CVP and State Water Project (SWP) to increase sharing of water, and improve the habitat and ecosystem to increase fish populations.

The Bureau process provides a much-needed operational review to ensure the coequal goals of water reliability and protecting, restoring, and enhancing the Delta ecosystem are met. Again, I support the process and look forward to the Bureau's success in achieving improvements to the current system.

Sincerely,
Steve Malanca
My Job Depends On Ag

Harrison, Katrina <kharrison@usbr.gov>

Comment on maximizing CVP deliveries

Wendy Heaton <wendy@danehenasdesign.com> Tue, Jan 30, 2018 at 3:20 PM
To: kharrison@usbr.gov

Katrina Harrison

Project Manager

Bureau of Reclamation, Bay-Delta Office

801 I Street, Suite 140

Sacramento, CA 95814-2536

Dear Ms. Harrison,

When it comes to water in California, no one agrees on much. There is, however, one thing everyone agrees on: the Delta is in crisis.

Winter-run Chinook salmon, Delta Smelt, longfin smelt, and other fish are falling toward extinction. With exactly two Delta Smelt found in the latest survey, we may have lost this important indicator species. And it would be the first fish extinction since the Endangered Species Act was enacted 45 years ago.

The decline of the estuary began first with the Central Valley Project, then the State Water Project. Overpumping the Delta has brought this estuary to its knees.

Now USBR is looking to “maximize” Delta water exports?

The estuary is a public trust resource, and it’s USBR’s job to manage it responsibly. **The Delta needs more water, not less.**

The last 50 years of water exports have nearly killed the Delta. It’s on the ropes. **You should be looking for ways to “maximize” the ecology of the Delta, not ramp up exports.**

Sincerely,

Wendy Heaton

PO Box 360

Clarksburg, CA 95612

Harrison, Katrina <kharrison@usbr.gov>

US Bureau of Reclamation project to maximize water deliveries from the San Francisco-San Joaquin Delta

W L Martin <wlmartin361@gmail.com> Tue, Jan 30, 2018 at 10:29 AM
To: "kharrison@usbr.gov" <kharrison@usbr.gov>

Dear Ms. Harrison,

My name is William L. Martin. I am a San Francisco resident. I am also a long-time visitor and recreational fisherman in the California Delta.

The last thing the California Sacramento-San Joaquin Delta needs is less water. Numerous studies, going back many years, all conclude that more water is needed for a healthy San Francisco Bay-Delta ecosystem. I refer you to the University of California, Davis, Center for Watershed Sciences. The Center has generated many of these studies, which are all based on strong scientific evidence.

For example, in an article published in January 2018, fisheries biologists James Hobbs and Peter Moyle graphically illustrate the significant decline of the Delta smelt. There were millions of this small fish as recently as 1980. Since then, this population has declined so severely that it is in danger of extinction. Removing more water from the estuary system will surely not help the population of Delta smelt.

Also in January 2018, Drs. Moyle and Jay Lund published an article suggesting a compromise in water deliveries from the Delta. The authors point to several areas of improvement, especially the continued focus on conservation, water recycling and reuse. Please review their ideas at this link:

https://californiawaterblog.com/2018/01/24/ecological-incentives-for-delta-water-exports/

I would urge the Bureau to seek out alternative views on how to fix California's water problems. For example, this link will take you to an article regarding a way to use a "cap and trade" system to encourage efficient use of water:

http://waterinthewest.stanford.edu/news-events/news-insights/share-wealth-cap-and-trade-system-water-conservation-and-resiliency

In the Bureau of Reclamation's web page announcing this hearing, we read, and I quote: "The Central Valley Project and State Water Project operate pursuant to water rights permits and licenses issued by the State Water Resources Control Board." Allow me to remind the Bureau that the State Water Board is currently updating its Bay-Delta Water Quality Control Plan. In Phase 1 of this update, the Board has proposed an increase in unimpaired flows in the three major tributaries of the San Joaquin River. The Board is currently working on Phase 2 of this update, which will cover the Sacramento River, the largest single source of flows into the Bay-Delta estuary.

The Bureau needs to coordinate its actions with the State Water Board, since its permits and licenses are granted by that body. It is only prudent management to see what the Board is proposing in Phase 2 of its water quality plan update. It is entirely possible that the Board's decisions will significantly impact the Bureau's ability to transfer water as it sees fit.

Thank you for your consideration.

William L. Martin

124 Persia Avenue

San Francisco, CA 94112

415-587-5730

Wlmartin361@gmail.com

Harrison, Katrina <kharrison@usbr.gov>

Comments for EIS

Conner Wenzel <cwenzel.goat@gmail.com> Wed, Jan 31, 2018 at 8:27 AM
To: kharrison@usbr.gov

I would like to express some areas of concern I feel should be addressed in the “Draft Environmental Impact Statement, Revisions to the Coordinated Long-Term Operation of the Central Valley Project and State Water Project, and Related Facilities”

First, I believe the EIS must evaluate a conservation alternative that would focus on reduction of water demand by agricultural and urban conservation. The state is continuing to grow in both population and demand for products grown here in California, the water supply is not. We cannot continue with the old methods of water usage; the Bureau of Reclamation needs to start being proactive in methods of water consumption. There is only so much water falling from the sky and in the aquafers, there is no borrowing available.

The evaluation of whether the Reclamations plans for the CVP are in line with their goal of being “co-equal”, working on protecting, restoring, and enhancing the ecosystems that are the source of the water. Does their plan align with this concept or are they placing water supply for consumptive use over those goals?

The EIS must analyze how the dams and diversions have prevented sediment from flowing into the Bay Estuary, resulting in a large decrease in sandy beaches in the Bay which corresponds to an increase in coastal erosion. Marsh formation is a critical tool in dealing with rising sea levels, so I feel the EIS must consider the role of sediment transport as a means of dealing with rising sea levels. They must look at how freshwater flow helps to preserve and grow the freshwater marshes that are a natural response to rising sea levels. Organic matter accumulates faster in freshwater marshes than it does in saltwater marshes. Wetlands and beaches act as natural flood barriers to protect shoreline communities in the Bay Area.

I feel the EIS must evaluate and address the impacts to indigenous people who have now had multiple generations deprived of their previously abundant supply of salmon runs disrupted by the CVP/SWP infrastructure. An alternative means to get the return of spawning salmon in the McCloud river must be looked at. The CVP/SWP created the environment that has caused these salmon to become endangered, this must be resolved before we lose another species. Along with their largest traditional food/cultural supply the Winnemen Wintu also lost much of their native land to the Shasta Dam. The EIS must consider the cultural ramifications of raising of the Shasta Dam. The places that would then be flooded are the last remaining sacred sites to these indigenous people.

I appreciate the ability to have public comment and I hope all the concerns of the people that will be directly impacted by more water being moved to the central valley will be taken with the sincerity that they are felt.

--
With peace and kindness

Conner Wenzel

He/Him pronouns

Harrison, Katrina <kharrison@usbr.gov>

California water plan

Kom and Ernest <kom@groupdixon.com> Wed, Jan 31, 2018 at 6:36 AM
To: kharrison@usbr.gov

My name is Ernest Witt, I live in Chico California at 8 Guynn Bridge Ct. I have lived in California my entire life.

My concerns include:

1. Raising the Shasta Dam 18 1/2 feet will wipe out AGAIN the endangered Winnemem Wintu Tribe of which there are 120 people left.
2. Sludge at the bottom of our water storage areas creates less water storage.
3. Confusion about what "Revisions to the Coordinated Long-Term Operation of the Central Valley Project and State Water Project and Related Facilities" actually means. Nearly everyone at the meeting translated it to mean "Steal Northern California's water and continue to deplete our aquifers."
4. The source of the water mentioned in this "plan" is never addressed in the Environmental Impact Study - something required by law.
5. Fish. We had a lot. We have very few. Only 2 smelt were counted at the Delta this year. Aqua Alliance mentioned the fact the water plan calls for 100,000 fish yet there have often been less than 6,000. The high fish count was in 1969. The Salmon are endangered.
6. Our ground water is endangered.
7. Local fishing guides are concerned. They do NOT want to see more water going south. The argument is that the large corporate farmers in the southland are not growing food for America but for overseas.
8. Our environment is collapsing ... literally. Decades of over-pumping groundwater have irreversibly altered clay layers in parts of California's Central Valley, causing the ground to sink and permanently reducing its capacity to store water - according to NASA which shows from space what's happening.
9. We need de-salination plants.
10. We need our water to NOT evaporate
11. Our infrastructure needs fixing before any NEW projects begin.
12. We need more creative thinking.
13. We need to plant crops that take less water - wheat, beans, chickpeas in areas where water is scarce.
14. We need to stop farming desert areas.
15. Read CADILLAC DESERT.
16. No more dams. Let's not repeat the mistakes of the past.
17. We need more ground water monitoring.
18. Chemical use must be monitored and stopped from going into our watershed.
19. Illegal marijuana grows in our National Forests contribute to water pollution. These growers are stealing water.
20. Water does not multiply. It is a finite source.
21. Climate change is real.
22. Our elected officials need to become more pro-active.
23. We cannot keep using the same model of infinite growth. It is unsustainable. We need to live within the limits of our environment.
24. Flooding is good.
25. Flood plains are natural storage.
26. "How much harder can you twist the sponge that is already quite dry. We're dry," one speaker said. "Water is finite. Water doesn't multiply."
27. Will "stakeholders" at this meeting be heard or is it another check box on government's way to devastating our Northern California environment?
28. Where is the sustainable water plan for California?
29. Fish. Fish. Fish. Where are the fish?
30. We MUST DO BETTER!

Sent from my iPhone

Via email: kharrison@usbr.gov
Katrina Harrison
Project Manager
Bureau of Reclamation
Bay-Delta Office
801 I Street, Suite 140
Sacramento, CA 95814-2536

January 31, 2018

Re: Comment in response to Notice of Intent to Prepare a Draft Environmental Impact Statement, Revisions to the Coordinated Long-Term Operation of the Central Valley Project and State Water Project, and Related Facilities

Dear Ms. Harrison,

Please accept this letter as my comment to the above-referenced Notice. I am a resident of Junction City, Trinity County and live by the Trinity River, adjacent to Deep Gulch, Sheridan Creek and Sheridan Hole. The Sheridan Riffles are one of the finest salmon spawning spots in the entire Trinity River. I am not a scientist, an environmentalist or a politician. Rather, I am merely a private citizen who is deeply concerned about the health and future of the Trinity River. Because my knowledge and concerns are primarily related to the Trinity River, my comments are, for the most part, directed at the Trinity River Division of the Central Valley Project.

I. INTRODUCTION

The Secretary of the Interior (hereafter "the Secretary") is under a statutory mandate to rehabilitate the Trinity River so that the native anadromous fish population is returned to the level that existed prior to the creation of the Central Valley Project, more specifically, the building of the Trinity and Lewiston Dams. The Secretary is also subject to federal government's trust obligations to the Hupa and Yurok Indians.

In promulgating this Notice, the Secretary is acting[1] as though he is unaware of extant Statutory and Trust obligations that limit his options. While the Notice is written in the high bureaucratic fashion; (e.g., "This project will evaluate alternatives to restore, at least in part, water supply, in consideration of all of the authorized purposes of the CVP"), the real message is clear; "we are going to divert more of the Trinity River's water to benefit our corporate cronies in the desert."

[1] The Bureau of Reclamation promulgated the Notice, presumably at the direction of the Secretary.

A. The United States Department of the Interior's (hereafter "Interior Department") elimination of the Trinity Adaptive Management Working Group

In, or about, March, 2017, the Trump administration suspended numerous federal advisory committees, including the Trinity Adaptive Management Working Group (hereafter "TAMWG"). According to the Interior Department, the suspensions would allow a review period to insure the committees were in compliance with the Federal Advisory Committee Act (Trinity Journal, December 13, 2017, pp. 1,8). While other advisory committees were reinstated, the TAMWG was not. In early December 2017, the Interior Department's press secretary was quoted as stating that the TAMWG did not submit paperwork required for its continued operation. The Eureka Times – Standard quoted the press secretary as stating:

> "Their decision to not seek continuation led to the group becoming inactive."

See Trinity Journal, December 13, 2017, p.8.

However, the Interior Department's explanation was factually incorrect. Tom Stokely, the Chair of the TAMWG, has told the Trinity Journal and the Trinity Management Council (hereafter "TMC") that he was never asked by the Interior Department to submit paperwork for the TAMWG's continuation. I was present at the TMC meeting at which Mr. Stokely stated that the Interior Department did not request any information from the TAMWG. Moreover, Mr. Stokely, as Chairperson of the TAMWG, was always available to members of the public to provide guidance and input regarding the Trinity River Restoration Program's (hereafter "TRRP") activities. I had numerous conversations with Mr. Stokely regarding the TRRP throughout 2017 because the TRRP's combined projects at Deep Gulch and Sheridan Creek were under construction in 2017 and were impacting my property. Moreover, my neighbor also consulted Mr. Stokely regarding these projects on an on-going basis during 2017. Mr. Stokely was most helpful to us, and in my opinion, also helpful to the TMC. Therefore, the Interior Department's elimination of the TAMWG for inactivity was a "mistake", or perhaps something more sinister.

B. The December 7, 2017 TMC Meeting

At the December 7, 2017, TMC meeting, Tom Stokely asked that the TMC members sign a letter requesting reauthorization of the TAMWG. Initially, it appeared that the TMC members would unanimously support such a letter.[2] The Interior Department's termination of TAMWG was an obvious mistake. Moreover, the Executive Director of the TRRP (she is not a member of the TMC), spoke positively about TAMWG's

[2] The TMC includes individuals who are employees of several agencies of the Interior Department, including, the Bureau of Reclamation, the Bureau of Land Management (BLM), the US Forest Service, and the US Fish and Wildlife Service.

contribution (see also Trinity Journal, December 7, 2017, pp. 1,8 and Editorial Opinion, P. 4).

However, after a break, it became apparent that the TMC members who are employed by agencies within the Interior Department would not support the submission of a letter seeking re-activation of the TAMWG. The Chair of the TMC, an employee of the Bureau of Reclamation, said that the Interior Department had made its decision to terminate the TAMWG and federal employees within the jurisdiction of the Interior Department had to respect this decision. This is my personal observation of what occurred. (See also, The Trinity Journal, December 13, 2017, pp. 1, 8 and Editorial Opinion, P. 4.)

To put it politely, the behavior of the TMC members who are employed by agencies within the Interior Department was not a model for "Profiles In Courage". While the failure to support a re-activation letter by the individuals employed at agencies within the Interior Department was regrettable and unfortunate, it crystalized something important. The Interior Department's stated reason for eliminating the TAMWG, "inactivity", was intentionally false.

The Trinity Journal, in its December 13, 2017 editorial, at p. 4, reached the same conclusion.

> "[T]his goes deeper. We see something far more sinister in this – yet another attempt to secure more Trinity River water for the Central Valley Project by taking away the public's crucial opportunity to be closely involved in decisions affecting the Trinity River."

It should also be noted that recently, a former lobbyist for the Westland's Water District, David Bernhardt, was appointed by the Trump administration to be Deputy Director of the Interior Department (see Trinity Journal, December 13, 2017, Editorial, p. 4).

On December 27, 2017, the Bureau of Reclamation published the instant Notice in the Federal Register, seeking public comment by February 1, 2017. The high bureaucratic lingo attempts to disguise the Interior Department's true purpose, just as the Interior Department sought to conceal its motive in eliminating the TAMWG. It appears to be quite transparent, the Secretary wishes to slake the thirst of his corporate cronies with the water of the Trinity River.

II. THE STATUTORY MANDATES

A. The 1955 Act

The Trinity River Division of the Central Valley Project was authorized by an Act of Congress in 1955. The Interior Department provided reports and findings to

Congress on a proposed plan of development in the early 1950's (see Trinity River Restoration Program, hereafter "TRRP", website discussion regarding the "Legislative History" of the Trinity River Division). The reports suggested that 1.1 million acre feet (af) of water flowed on average into the Trinity River Basin.

> "Based on the reports, Congress concluded that water 'surplus' to the present and future water needs of the Trinity and Klamath basins – estimated at approximately 700,000 af and considered 'wasting to the Pacific Ocean' could be diverted to the Central Valley 'without detrimental effect to the fishery resources'. H.R. Rep. No. 602, 84th Cong., 1st Sess. 4-5 (1955); S. Rep. No. 1154, 84 Cong., 1st Sess. 5 (1955). In fact, the underlying reports suggested that development of the Trinity River Division, and the resulting diversions, would not only maintain, but also improve, fishery conditions in the Trinity River, with as little as 120,500 af of water per year from above Lewiston dedicated to the fishery. Based on these understandings, Congress passed legislation authorizing the Trinity River Division (TRD) on August 12, 1955. (PL 84-386) (1955 Act)."

TRRP website discussion of the Legislative History of the Trinity River Division.

Thus, it is apparent from the legislative history as described by the TRRP (an organization whose employees are on the payroll of the Bureau of Reclamation and which is within the jurisdiction of the Interior Department) that only water that was surplus to the Trinity and Klamath River basins could be diverted to the Central Valley. Moreover, the Interior Department provided reports and findings to Congress that were wildly inaccurate.[3] Lastly, and perhaps most importantly, the TRRP's description of the legislative history expressly states that Congress passed the legislation based on these false and inaccurate findings of fact. Congress was, apparently, sufficiently skeptical of the Interior Department's reports and findings that it included in Section 2 of the 1955 Act two provisos, or if you

[3] By the early 1950's, the Interior Department had at least a decade of experience of salmon population declines on the Columbia River as a result of dams erected in the 1940's as well as the experience of other dams built in the 1930's. Is it possible that the Interior Department's findings of minimal adverse impacts on the Trinity/Klamath Rivers were innocent mistakes?

prefer, two distinct limitations to the Trinity River Division's integration with the Central Valley Project:

> "*Provided*, that the Secretary is authorized and directed to adopt appropriate measures to insure the preservation and propagation of fish and wildlife [including, but not limited to, the maintenance flows at certain specific minimal levels]; *Provided further*, That not less than 50,000 acre-feet shall be released annually from the Trinity Reservoir and made available to Humboldt County and downstream users."

Id.

B. Trinity River Basin Fish and Wildlife Management Act of 1984

The Trinity and Lewiston Dams were completed in 1963, and the Trinity River Division of the Central Valley Project became fully operational in 1964. For the next decade the Bureau of Reclamation diverted an average of between 88% and 90% of Trinity River annual inflow to the Sacramento River Basin.

> "The construction and operation of the TRD had devastating effects on the Trinity River environment and fish populations. The dams blocked significant upstream habitat. The low flows caused the Trinity River to narrow and the banks to steepen, resulting in increasingly fast and uniform water velocities. These effects destroyed resting pools and vital spawning grounds. Within a decade, the TRD had significantly diminished the salmon and steelhead populations In the Trinity River."

Westlands Water District v. US Department of the Interior, 376 F.3d 853, 861-862 (9th Cir. 2004). (citations omitted). See also, San Luis & Delta-Mendota Water Authority v. US Department of the Interior, 848 F.3d 1216 (9TH Cir. 2017)

In follow-up to the findings and work of the Trinity River Basin Fish and Wildlife Task Force (hereafter "Task Force") in the 1970's and Secretary Andrus' 1981 Secretarial Decision, Congress enacted the Trinity River Basin and Wildlife Management Act of 1984. The 1984 Congressional Act attempted to correct the devastation of the Trinity and Klamath River fish populations caused by the "bad science" and/or "false findings" contained in the Interior Department's reports to Congress which formed the basis for the Trinity River Division. The 1984 Act mandated:

> "[T]he Secretary to formulate and implement a fish and wildlife management program for the Trinity River Basin to restore fish and wildlife populations to pre-TRD levels."

Id at p.13. The 1984 Act also officially recognized the Task Force. Id.

C. The Central Valley Project Improvement Act

The Central Valley Improvement Act of 1992 ("CVPIA") directed the Secretary to operate the Central Valley Project to meet all obligations to restore fish and wildlife under state and federal law. More specifically, it required minimum releases to the Trinity River of 340,000 acre feet per year for water years 1992-1996 to fulfill federal trust obligations to the Hupa Tribe and the restoration objectives of the 1984 Act. The Secretary was ordered to complete environmental flow studies by October, 1996 and submit recommendations to Congress by the end of that year. In 1996, Congress extended authorization for the management program through October 1, 1998.

III. Federal Trust Obligations to the Hupa and Yurok Indians

The federal government's obligations to the Hupa and Yurok Tribes were not, to put it politely, either observed or fulfilled when the Trinity River Division of the Central Valley Project was created or during the period when 90% of the Trinity River's inflow was diverted to the Interior Department's patrons in the desert. Even in more recent years when Trinity River inflows were permitted to increase somewhat, the federal government has continued to fall short in fulfilling its trust responsibilities.

In 1981, Secretary Andrus found that with respect to the trust obligations of the Interior Department:

> "[T]he Hupa and Yurok Indians have rights to fish from the Trinity and Klamath Rivers...These rights are tribal assets which the Secretary, as trustee, has an obligation to manage for the benefit of the tribes. The Secretary may not abrogate these rights even if the benefit to a portion of the public from such an abrogation would be greater than the loss to the Indians."

See U.S. Department of the Interior, Record of Decision, Trinity River Mainstem Fishery Restoration, Final Environmental Impact Statement / Environmental Impact Report, 2000, at p. 6, quoting Secretarial Issue Document, Trinity River Mitigation at p. 3 (January, 1981).

Secretary Andrus' finding is significant from the perspective that it is legally correct. However, the Secretary's finding is also insignificant from the perspective that it has been universally ignored to the present.

More recently, the Office of the Solicitor of the Interior Department, in a Memorandum to the Secretary, dated December 23, 2014, addressed the question of federal trust obligations owed to the Hupa, as well as the Secretary's obligations, under federal statutes, regarding mainstem flows to the Trinity River. In her analysis, the Solicitor found that the two provisos of Section 2 of the 1955 Act were independent of one another, and they "set forth two separate and distinct limitations on the integration of the TRD with the CVP". (Id. at p. 10). In conclusion, the Solicitor wrote:

> "Based on the analysis above, I conclude that the legislation authorizing the TRD contains separate and independent limitations on the TRD's integration with, and thus diversion of water to, the CVP. To the extent prior memoranda of the Solicitor's Office could be interpreted to reach contrary conclusions in this regard, those memoranda are hereby superseded".

Id. at p. 15.

Thus, the Interior Department's own legal opinion governing the Secretary today unambiguously states that both provisos of Section 2 of the 1955 Act independently place limits on the amount of water that may be legally diverted to the Central Valley Project from the Trinity River; i.e., the first proviso mandates that the Central Valley Project is limited to "surplus" water that is not needed for mainstem river flows to return fish population levels to pre-Trinity River Division levels; the second proviso independently mandates that 50,000 acre-feet of water from the Trinity Reservoir be sent to the Klamath Basin at the request of Humboldt County or other downstream water users such as the Hupa and Yurok tribes. The Solicitor makes absolutely clear that the 50,000 acre-feet in the second proviso is a minimum and additional water may be demanded to fulfill federal trust obligations or mainstem flow needs.

IV. State Law

California recognizes common law riparian water rights which hold that if a water way, such as a river, creek or stream, runs through private land, the land owners are permitted to use it. California law also recognizes appropriative water rights. Appropriative water rights hold that water may be moved (diverted) if it is being put to good use. As a general rule, riparian rights are primary; appropriative rights are secondary.

Trinity County, the watershed of origin of the Trinity River, has primary rights to the Trinity River's water for the benefit of the Trinity Basin's fish and wildlife, and its citizens. CA Watershed of Origin Protection Act (CA Water Code Sections 11460 – 11465). The Bureau of Reclamation's rights are appropriative and stand second in line. Id. The federal government must comply with California area of origin law when it seeks a priority under a state filing (CA Water Code Section 10500). Every application must provide that it will not authorize the use of any water outside the county of origin which is necessary for county development. Id. Pursuant to CA Water Code Section 11128, the area of origin law expressly applies to the Central Valley Project. See also, California v. United States (1978) (438 U.S. 645).

Moreover, the Bureau of Reclamation's secondary rights were obtained as a result of the Interior Department submitting wildly inaccurate and false reports and findings to Congress which form the basis of the 1955 Act and the creation of the Trinity River Division. Congressman Clair Engle, a sponsor of the 1955 legislation, was particularly mendacious in his communications with the Trinity County Board of Supervisors, County citizens and even the Governor of California. Congressman Engle was frequently heard to exclaim that he would withdraw support for the bill if even one fish was harmed by the creation of the Trinity River Division (Trinity Journal, 1952). He also promised the Trinity County Board of Supervisors local control over the Trinity River Division in order to obtain their endorsement. Id. Congressman Engle frequently reassured the Trinity County Board of Supervisors and County residents that they should not be concerned because only water that was surplus to the needs of the Trinity Basin's fish, wildlife, and people would be diverted to the Central Valley. No secret ballot election was ever held to determine the wishes of the people who lived in Trinity County, the county of the Trinity River's origin.

After the Central Valley Project was completed, the Trinity Reservoir was named after Congressman Engle in order to honor him. It is no surprise that after the degree of Congressman Engle's mendacity became well known locally some years later, the Trinity County Board of Supervisors unanimously passed a resolution on February 7, 1995, removing Engle's name and renaming the reservoir Trinity Lake.

V. Specific Comments

A. The Instant Notice to which the Bureau of Reclamation is seeking comment is illegal and highly inappropriate. As demonstrated above, the Central Valley Project is only entitled to "surplus" water of the Trinity River; i.e., the Central Valley Project is legally entitled to obtain water that is not necessary to the restoration of the fish and wildlife populations of the Trinity Basin to the pre-Trinity River Division level. Application of a traditional benefit/cost analysis for evaluating the merit of a proposed action is plainly inappropriate here. The statutes enacted by Congress mandate restoration of the Trinity River's salmon/steelhead to pre-Trinity River Division levels. Moreover, the federal government's obligations as a trustee of

Yurok and Hupa tribal assets mandate that the government administer those assets solely in the interest of tribal beneficiaries, regardless of the economic benefits that might flow to desert corporate interests. In addition, Trinity County has primary land of origin rights to Trinity River water which supersedes any appropriated claim the Interior Department, Bureau of Reclamation or any of its desert contractors may have. In conclusion of this particular comment, the Notice is illegal for the additional reason that it is in direct violation of the Interior Department Solicitor's Memorandum of December 23, 2014. While the Secretary may have the authority to have the Solicitor's Memorandum withdrawn or superseded, there is nothing in the public record that indicates he has done so.

B. The Bureau of Reclamation Notice is inadequate in that it does not contain an option evaluating the removal of the Trinity and Lewiston dams. Two reports issued in 1999 concluded, after the experience of increased flows for some years, that the fish populations could not be restored to pre –Trinity River Division levels without taking out the dams. Trinity River Flow Evaluation Final Report (June 1999) at pp. 92-93, 278; Trinity River Mainstem Fishery Restoration Environmental Impact Statement / Report (Public Draft) (October 1999) at pp. 2-11 to 20-16 and 3-175 to 3-178. Removing the dams would restore over 100 miles of prime salmon and steelhead spawning areas. Also, removing the dams would allow for the natural annual "flushing" of the mainstem which would restore the floodplain and allow for the natural distribution of gravel. Id.

It is my understanding that the dams were never intended to be permanent. The dams have an approximate 60 years of life left before they would have to be dismantled. It would be far less expensive to remove the dams now; it would also be less dangerous to remove the dams now than to leave them in place as the infrastructure becomes unstable and begins to crumble over time.

C. The Notice is inadequate as it does not consider the option of terminating the Central Valley Project in its entirety. The water diverted from the Trinity River to the Central Valley Project is wasted in that it is damaging the valley environment. The ground water is being contaminated by selenium and injuring fish and wildlife populations there as well as rendering land in the valley useless for agriculture. See "Selenium in the San Joaquin Valley", Kenneth Kanji, Andre Lauchid and Jewel Meyer, Environment: Science and Policy for Sustainable Development (Vol. 28, Iss. 6 (1986); "California's Time Bomb Keeps Ticking", Glen Martin, Huffington Post (June 20, 2012); "Special Report: Retiring Toxic Farmland in San Joaquin Valley", Restore the Delta (July 14, 2015); "Desert and Farm, Water Drainage and a New Deal in the Central Valley", Mark Arax, Sacramento Bee (November 27, 2016).

There is no compelling reason for land, that is essentially a desert in its natural state, to be the location for so much agri-business. There are many locations outside the Central Valley where there is adequate water and where similar crops can be grown.

The people who would be damaged by ending artificial water diversions into the desert are the corporate big wigs who own the water contracts and the land which would drop in value if it was returned to its natural state.

D. The Instant Notice is inadequate in that it does not provide the option of other technologies and methods of bringing water to the Central Valley. The Bureau of Reclamation has oversubscribed the Trinity River water. Even assuming all of the Trinity River's water was diverted to the Central Valley Project, there is not enough of it to satisfy all of the Bureau of Reclamation's water contracts. The word commonly used to describe over-committed water obligations is "paper water". The Bureau of Reclamation has an over abundance of paper water.

If the growers, water brokers, land owners and other corporate interests wish to continue agri-business in the Central Valley desert, these monied interests should use their own financial resources to develop their own water sources, rather than stealing it from others. It is apparent now to many scientists that the wonders of the Roosevelt era mega-job dam building projects to create hydroelectricity and agricultural land out of desert cause more damage than benefit to society. Fortunately, with time and human ingenuity, new technologies and methods are developed.

The Bureau of Reclamation Notice is faulty in that it does not offer or contemplate the option of water desalinization in the Central Valley on a large scale. Technology exists today where nuclear reactors that are safe and dependable can be placed on large barges, or other structures, that are located out in the ocean far away from population centers. See "Economics of Nuclear Desalinization: New Developments and site-specific Studies", International Atomic Energy Agency (July 2007); See also "New Technologies for Seawater Desalinization Using Nuclear Energy", International Atomic Energy Agency (January 2015). The desalinated water can easily be transported through pipes to locations where the water is desired. "Economics of Nuclear Desalinization; New Developments in Site-Specific Studies", supra. This technology is far less expensive and much safer than building, maintaining and operating massive dams to transport water.

> "The adverse effects of desalination technologies are orders of magnitude lower than those from gargantuan civil works such as large dams and inter-basin water transfers."

Id at page 14. The cost of such a desalinization project could be borne by the corporate interests that would benefit from it under the direction and regulation of the Bureau of Reclamation.

Many people oppose nuclear energy believing it is unsafe. However, many environmental scientists have changed, and are changing, their views on the subject.[4] They have come to realize that, with climate change, nuclear energy is the only carbon-free source that can create the base loads necessary to support present and future needs of an expanding world population. As such, the Notice should contemplate the option of a desalinization project, fueled by nuclear energy, for the Central Valley. This could replace the century-old practice of stealing water from the land of others and contributing to the genocide of native cultures.

VI. Conclusion

The role of the Interior Department in the creation and administration of the Trinity River Division of the Central Valley Project has been less than noble and uplifting. It appears that a corner may have been turned when the Interior Department began to publically acknowledge the damage and injustice caused by its diversion of approximately 90% of the Trinity River's water. Since the 1980's, the Interior Department has conducted studies and allowed increased flows in an effort to restore the Trinity River. However, notwithstanding these efforts, the Trinity's fish populations have continued to fall.

Westland Water District has fought every decision by the Bureau of Reclamation to increase flows to the Trinity River, and it has sued the Interior Department and Bureau of Reclamation repeatedly, even though it has a "weak hand" from a legal standpoint. (See e.g. Ninth Circuit Court of Appeals decisions). The effort to take additional Trinity River water continues to date as evidenced by the recent appointment of Deputy Secretary Bernhardt. The Interior Department's recent termination of the TAMWG under false pretenses as well as the instant Notice signal another illegal water grab.

I have questioned if preparing this comment would serve any useful purpose and whether it would be a complete waste of precious time. I suspect that litigation initiated by various environmental funds, the Trinity County Board of Supervisors, citizens of Trinity County and the Hupa and Yurok Tribes might be a better use of precious resources such as time and money.

We shall see. Thank you for your attention and consideration.

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[4] See e.g. Environmentalists for Nuclear Energy (EFN). Many of the world's greatest environmentalists are members of EFN or share its views, including James Lovelock, Patrick Moore, Stewart Brand, the late Bishop Hugh Montefiore, and Stephen Tindale. Other prominent scientists and environmentalists who support nuclear energy are Dr. James Hansen, Jeffrey Sachs and Carol Browner, etc. The list is long and growing.

Very Truly Yours,

John V. Nordlund
PO Box 56
Junction City, CA 96048
(530) 623-1928
sixjn@snowcrest.net

cc: Dave Hillemeier, Fisheries Program Manager, Yurok Tribe
Mike Orcutt, Director Tribal Fisheries Department
Keith Groves, Trinity County Board of Supervisors
Terrance Mines, Trinity County Board of Supervisors
Jarod Huffman, US House of Representatives, District Representative
Tom Stokely, Former TAMWG Chairman
Caryn Huntt DeCarlo, Executive Director, Trinity River Restoration Program
Jerry Payne
Wayne R. Agner, Editor and Publisher, The Trinity Journal

Harrison, Katrina <kharrison@usbr.gov>

1/2 distance with more water than twin tunnels

rizzi.joseph@gmail.com <rizzi.joseph@gmail.com> Wed, Jan 31, 2018 at 1:52 PM
To: kharrison@usbr.gov

To avoid reversing Delta water way flows and keep the 5+ MAF of water export, at least one pipeline should be created to capture water on the north side across from Sherman Island. A 30 foot diameter pipeline from Sherman Island to Tracy Pumps would be less than 20 miles and can be located next to Rail lines for ease of access and would be able to supply: 3 to 11 Million Acre Feet.

http://www.calctool.org/CALC/eng/civil/hazen-williams_g

Pipe Dia.	Length	Drop	*Gravity* Flow Rate	Gallons Per Day (GPD)	Acre-Ft Per Day	Gallons Per Year (GPY)	Acre-ft Per Year (AFPY)
30 Feet	20 miles	20 Feet	2,034,340 Gal / Min	2,929,449,600	8,989	1,069,249,104,000	3,280,912
30 Feet	20 miles	180 feet	6,663,680 Gal / Min	9,595,699,200	29,444	3,502,430,208,000	10,746,948

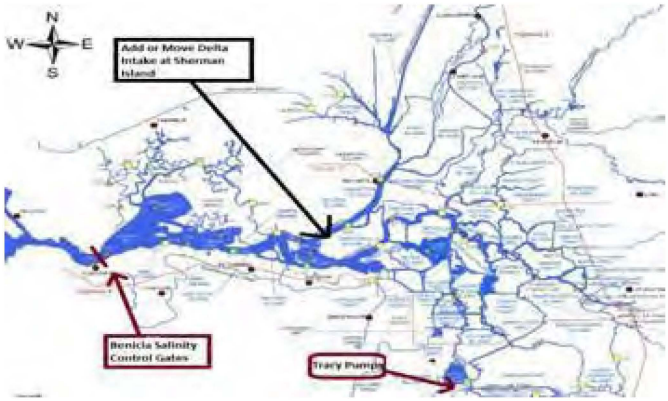
Pump the water up near the wind mills across from Sherman Island, then the water will flow using gravity into Clifton Court Forebay.

FlowCalcTool was used to make calculations.

Running the pipelines near the Rail line and Freeway would allow for a nearly straight route to Sherman Island and it could be done above ground which is significantly less expensive than tunnels and the railway can be used to haul away dirt and deliver pipes.

http://tinyurl.com/l3npwmg

http://tinyurl.com/ktkv6hj



I still think that fixing Clifton Court Forebay should be done first and then the Salinity gates as proposed earlier (see attached), but this is the next best thing.

Please feel free to contact me for more details on any or all of the above options.

Joseph Rizzi

707-208-4508

---------- Forwarded message ----------
From: Joseph_Rizzi <Joseph_Rizzi@sbcglobal.net>
To: "'Haiman, Aaron@SSJDC'" <Aaron.Haiman@deltaconservancy.ca.gov>
Cc:
Bcc:
Date: Fri, 7 Apr 2017 11:46:36 -0800
Subject: RE: Support for Replacing levee of CCF with 1 1/2 mile fish screen

Aaron, can we schedule some time to talk on the phone about the attached proposal (Replacing CCF levee with fish screen)?

Joseph Rizzi -- Cel: 707-208-4508 -- Email: Joseph_Rizzi@sbcglobal.net

---

From: Haiman, Aaron@SSJDC [mailto:Aaron.Haiman@deltaconservancy.ca.gov]
Sent: Wednesday, February 22, 2017 12:19 PM
To: Joseph_Rizzi
Cc: prop1grants@SSJDC
Subject: RE: Support for Replacing levee of CCF with 1 1/2 mile fish screen

Hi Joseph,

The Delta Conservancy has a fund of Proposition 1 money that it gives out in competitive grants to projects that provide ecosystem benefits related to habitat restoration, water quality improvement, and sustainable agriculture in the Delta. A levee repair project could fall into one of these categories, especially if the link to ecosystem benefits is made very strongly. I am not sure about the timeline of your project, but our next solicitation cycle will begin in August or September.

If this timeframe fits with your needs, I would suggest scheduling a time sometime in May or June to come in and talk about your project and the grant program to see if it might be a good fit.

Thanks for your interest,

Aaron

From: Joseph_Rizzi [mailto:Joseph_Rizzi@sbcglobal.net]
Sent: Monday, February 13, 2017 3:58 PM
To: Haiman, Aaron@SSJDC; Keegan, Brian@SSJDC; Baehner, Lauren@SSJDC
Subject: Support for Replacing levee of CCF with 1 1/2 mile fish screen
Importance: High

Are you willing to support replacing the North East levee between Clifton Court Forebay (CCFF) and the West Canal (old river)?

- Save fish from being killed in CCF because they would never be able to get in to CCF. Fish would stay in the old river.
- Allow exports of water without harming the Delta aquatic life.
- Save money be being able to close the fish capture and relocation service that is being done now.
- Redirect the CVP pump intake to CCF and eliminate a second fish capture and relocation site.

See the following for more details: I hope you can support the efforts.

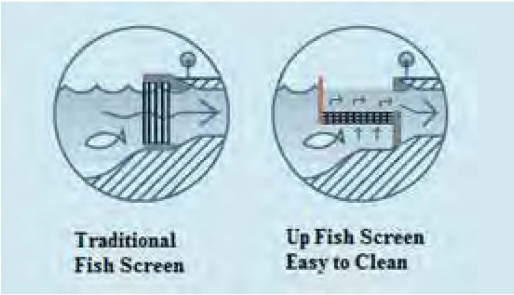
Fish screens CAN and should be installed to Keep Fish in Old River and out of the Clifton Court Forebay (CCF) and the Central Valley Project intake channel needs to be connected only to Clifton Court Forebay only, that way both the Tracy and Skinner fish Facilities CAN be permanently shut down to save $$$ and stop death.

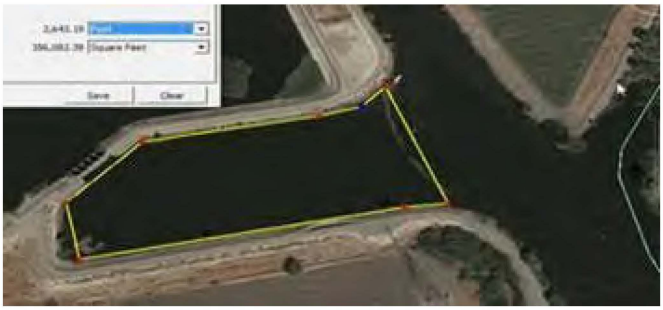
DWR has stated that is was going to put on fish screens at CCF and then DWR said it is not possible. Now DWR says that it wants to put in "State of the Art Fish screens" but they cannot at CCF. The picture below shows a typical fish screen that has a small area to pull the fish through the opening along with all the water and at CCF the current gates are setup for 12,000 CFS, so it can reasonable be seen that given this only configuration and required to only work with the existing intakes to CCF that it would not work.

Clifton Court Forebay is a death trap to 30%+ of all fish that is sucked into this trap by the pumping which creates flows into CCF as if it was the way to the sea. This death trap needs to be properly screened, prior to doing any huge $15+ billion projects. If DWR can not figure this out, how can the "Water Fix" work? (Which still does not address CCF!!!)

Now let us look at 2 other reasonable and low cost options:

1) **UP Fish Screen** at CCF intake – As pictured below the fish can swim under the screen and the screen is between the surface of the water bed with a boom like floating stopping any floating debris from entering the **Up Fish Screen** area. Using Google Maps in the second picture below google calculated the area in CCF intake being 356,083 Square Feet that can support the **Up Fish Screen** area. The recommended hole size on fish screens (in inches) are currently (0.0938 x 01563) and this option would use 16 x 14 screen with a 0.025 wire size which makes the holes about 1/3 (0.0375 x 0.0464) the recommended size for fish with a 12,000 CFS volume of water would have a flow rate ½ (about 0.1 CFS through the screens) the recommended 0.2 CFS. By design these **Up Fish Screens** are easier to clean with downward water pressure.





https://www.dfg.ca.gov/fish/Resources/Projects/Engin/Engin_ScreenCriteria.asp ←Screen Size Requirements link

https://www.metroscreenworks.com/screenwire.php ← Sample screen sales site

http://escholarship.org/uc/item/28m595k4 ← Pre-Screen Loss and Fish Facility Efficiency

Handy Conversions			
CFS	**AF / Day**	**AF / Year**	**MAF**
3,000	5,948	2,171,121	2.2

9,000	17,845	6,513,362	6.5
12,000	23,793	8,684,483	8.7

2) Traditional Fish screens or Up Fish Screens could alternatively be installed along the eastern wall of the Clifton Court Forebay(CCF) which as picture below from the yellow boxed line to the dirt berm between CCF and the West Canal (old river) is 570 feet and the dirt berm is 200 feet wide. With 7,800 feet (1.5 miles) in length and 570 feet wide would give you about 4,500,000 square feet of Up Screen area. This extremely large screen area would slow the 12,000 CFS water to 0.007 CFS as it passed by the screens. The added 200 feet of berm space once removed would increase the West Canal (Old River) an extra 200 feet in width. The 3 proposed "Water Fix" intakes, each with a capacity of 3,000 cfs, situated on the river bank and would range from 1,259 to 1,667 feet in length.

Operationally for two alternatives:

- **Clifton Court Forebay – Originally was an island but converted to water storage for SWP to allow pumping at night (when fish are sleeping and power is cheaper) and holds 31,000 Acre Feet (AF).**
- **11 hours on 1 hour off – Intake to CCF would be stopped for 2 hours a day to allow the natural flow of Old River to flush out any fish that were drawn to the Clifton Court Forebay intake screen area.**
- **Closing the old Tracy (CVP) and Skinner (SWP) Fish Screen Facilities will eliminate the death of fish and save the cost of operating and trucking the fish to other parts of the Delta.**
- **Automated water sprayers would periodically clean the new filters as needed.**
- **CVP pumps would change it's intake to getting water from CCF instead of river.**
- **With ZERO fish deaths, restriction on pumping will be harder. The improved Delta flows will also help ease restrictions. Win for fish, environment and export water!!!**

- ***Optional*** **- Salinity Restriction between Benicia and Martinez by 1) Keep one of the 12 sections between bridge supports always open. 2) add a shipping lock system in the shipping channel to protect 3 bridges from accidents (also blocking largest influx of salt water). 3) add horizontal tidally controlled louvers (like dryer vent) between 10 of the 12 bridge supports to restrict salt water incursions but allow fresh water to freely flow to the sea.**

Joseph Rizzi -- Cel: 707-208-4508 -- Email: Joseph_Rizzi@sbcglobal.net

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2 attachments

Fish Death Trap 2.doc
1776K

RE Support for Replacing levee of CCF with 1 12 mile fish screen
2550K

Harrison, Katrina <kharrison@usbr.gov>

to bureau of reclamation re maximizing water exports from the San Francisco Bay and Delta

agroecology@aol.com <agroecology@aol.com> Wed, Jan 31, 2018 at 4:48 PM
To: kharrison@usbr.gov

Submit comments on the EIS by February 1, 2018.

To: Katrina Harrison, Project Manager, Bureau of Reclamation

Efforts to maximize water exports from Bay/Delta ecosystems using megatunnel(s) are misguided on environmental and financial grounds. The water supply is finite. Insatiable demands on this finite resource continue without end. Corporate export agriculture in the Central Valley and urban/suburban Los Angeles have been demanding more and more water for decades. Please curtail additional water exports from the Bay/Delta to preserve the Bay/Delta's health and to protect overburdened taxpayers.

Sincerely Les Kishler Santa Clara County

ADDRESSES:Send comments to Katrina Harrison, Project Manager, Bureau of Reclamation, Bay-Delta Office,

801 I Street, Suite 140, Sacramento, CA 95814-2536; fax to (916) 414-2425; or email at *kharrison@usbr.gov*.

Harrison, Katrina <kharrison@usbr.gov>

Operation of Central Valley Project

Lew Wood <lewwood@ymail.com> Wed, Jan 31, 2018 at 9:21 AM
To: "kharrison@usbr.gov" <kharrison@usbr.gov>

As previous residents of Bishop, we get very nervous when Southern California gets thirsty. We would hate to have the Trinity River drainage become another Owens Valley. The main problem is the promise to "deliver south more water than the minimum flow of the contributing rivers." This concept is fraught with danger to the beautiful and fragile environment of our water shed during drought years. No one really knows the effects of climate change, natural or man made, will have on the availability of water in the future. Promising more water to Southern California and not maintaining a reasonable flow in the Trinity River is not conscionable.

Respectfully submitted,

Lewis K Wood
Sandy J Wood
P.O.Box 135
1240 Lewiston Road
Lewiston, CA 96052
530-778-3806

Harrison, Katrina <kharrison@usbr.gov>

Public comment for CVP water delivery maximization plan

Matthew Lawson <mmlawson@ucdavis.edu> Wed, Jan 31, 2018 at 10:11 PM
To: kharrison@usbr.gov

To whom it may concern,
I am of the opinion that the Bureau's new plan abrogates its duties to maintain the public trust with regards to non-water supply relates issues.

As you well know, The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

Therefore, a coordinated operations plan which exclusively prioritizes water deliveries at the expense of environmental factors (such as your obligations under the endangered species act, especially as regards the Delta Smelt) and economic factors (such as power generation, fisheries, and recreational benefits) clearly violates the spirit of the Bureau's mission.

Furthermore, the manner in which this plan is being carried out, with sudden shifts in priorities blindsiding stakeholders, and an unseemly emphasis on speed, risks damaging important working relationships, intangible assets essential to smooth future operation of the Bureau. Furthermore, the speed with which it is being carried out risks violations of statutorily imposed waiting periods on such actions, and gives the impression that the self imposed timeline has more to do with delivering political wins to certain powerful consticancies than with good stewardship of natural resources.

Finally, the shift in priorities seemed to come shortly after the appointment of David Bernhardt to the deputy assistant secretary of the Interior position, which gives at least the appearance (and possibly the reality) of a severe conflict of interest, given that he was (immediately prior to his appointment) employed by the powerful water districts which stand directly to benefit from this sudden and bizzare change of direction.
This conflict of interest should raise eyebrows at the national level, and should be investigated as a possible ethics violation.

Thank you for your time,
Dr. Matthew Lawson

Harrison, Katrina <kharrison@usbr.gov>

Comments on the NOI to Prepare an EIS

Robert Satterthwsite <rsatt1@comcast.net> Wed, Jan 31, 2018 at 10:37 AM
To: kharrison@usbr.gov

There are too many unanswered questions on this project to warrant approval.
R D Sattertwaite

Sent from my iPhone

Harrison, Katrina <kharrison@usbr.gov>

Regarding EIS for Revisions toLong-term operation of the CVP and State Water... etc

Sarah Salisbury <66tiachacha@gmail.com> Wed, Jan 31, 2018 at 5:57 PM
To: "Harrison, Katrina" <kharrison@usbr.gov>

To Whom It May Concern~
Below please see a list of my concerns and possible solutions regarding the possibility of "greater flexibility" in water delivery to the south from the north.

*Impacts from the sending of water from north of the delta to the south are already severe and since "increased flexibility" means more water leaving it's "point of origin" to service unsustainable agriculture (for the most part), I ask that you consider demanding that users on the southern end employ more technologies to assist in their saving the water that already comes to them. Desert countries have developed many ways to stretch every drop of water they get.
*Since 30% of water that is sent south evaporates on it's journey, it is imperative that shade is provided over open canals. How about that shade being provided by solar panels? Thereby deferring other electricity usage and expense.
*If water were more expensive (say $1000 ore even $2000 an acre foot), you can bet the users in the south would find ways to conserve the water they receive. (DWR has a large hand in determining water costs...work with them on this option. Also pressure water contractors/water districts via regulations that demand thrift in water usage.)
*One of the "reasonable range of alternatives" is apparently to do nothing to increase the flow of water to the south from the north, I support that option. (though see above for suggestions as to how to stretch that water when it arrives at it's destination)
*No raising of Shasta dam. Why? Cultural impacts. Biological impacts.
*No building new dams. Why? Biological and geological impacts.
*No Sites reservoir. The geology is too fragile.
*NO draining of aquifers to create "storage" for non-existent water. Leave our north state aquifers alone.
*NO activities that would drain ground water from the north state. THIS IS IMPERATIVE!

Regarding the manner in which the meeting at Chico State was conducted:
Dividing the audience so that none of us could hear all the questions raised nor the answers given was a very bad idea. Frustrating**. And** hard to imagine it was not intentional. The excuse was that all meetings must follow the same structure. Well, next time you conduct these meetings, do not divide the audience for any of them; then you will not be faced with rearranging the meeting structure.The one person in the room who could perhaps have answered all our questions was Federico Barrajas. The young men who did their best with our group simply did not know enough about the process or the science to answer many of our questions.
Thank you for your attention to our concerns~
Sarah Salisbury

Harrison, Katrina <kharrison@usbr.gov>

Comment, Public scoping meeting, Chico, CA

4dsgood <4dsgood@gmail.com> Wed, Jan 31, 2018 at 9:51 PM
To: kharrison@usbr.gov

My name is Sue Good. My contact information is 530-518-7365, 4dsgood@gmail.com, 932 Alder St, Chico,CA 95928.

I heard about the meeting via social media and word of mouth. I attended the meeting and agree with the majority of the comments. Our water supplies are finite. The extended drought, lack of snow pack, fires, multiple demands are impacting our rivers, creeks and ground water. We have plenty of examples of what happens to environments when water is used without consideration for the source. We humans are learning how to care for and nuture our grasslands, meadows, forests, flood plains, etc . We need to focus on ways to replenish our groundwater and rivers. We do not need to and cannot continue to overdraw our water. We can conserve, plant wisely, learn to live within our means. It would be stupid to not put the emphasis on the above. Too many lives depend on north state water. Killing the goose that lays the golden eggs would be disastrous.

Thank you for your consideration.

Sent via the Samsung Galaxy S7 active, an AT&T 4G LTE smartphone

Harrison, Katrina <kharrison@usbr.gov>

Opposition to increases in water delivery to Central Valley

Susan Simpson <simpson-susan@sbcglobal.net> Wed, Jan 31, 2018 at 4:58 PM
To: kharrison@usbr.gov

Katrina Harrison

Project Manager, Bureau of Reclamation

Ms. Harrison,

I am submitting this letter to express my concerns over any changes/increases in the water supplied by the California Delta to Central Valley Big Ag farming and Southern California in general. As a long-time resident of the Sacramento-San Juaquin Delta region, I have witnessed the changes already taking place in our own backyards.

The areas that so many enjoy recreating and living in, are already taking a beating from the reduced flow of clean water over the past several years. The Delta Plan was put in place to preserve the environment and habitats for the fish and other creatures who call the area home. Now, because other, important interests, want to increase the amount of water they are taking from the Delta, the Delta Plan seems to be thrown out the window. Rather reminiscent of other Promises, made and broken over the years. Does The Delta Plan for protection go the way of the treaties to the Native Americans? “As long as the grass grows and the wind blows” or, until it suits us to do otherwise?

Big Ag in California’s Central Valley has been the recipient of our water for decades, planting some of the thirstiest crops, when they have to rely on other means to water them. They get bigger and richer and are unchecked in their growth. There is no gate keeper saying, where will you get the water for these thirsty crops?

One of the biggest problems, as I see it, is that Big Ag’s gain is our loss. Their growth and wealth is at the expense of others. Sacramento-San Juaquin Delta will be destroyed if more water is diverted away from it. Local residents homes and property values, local businesses, visitors and locals recreation, will all be destroyed if more water is diverted away from the Delta. We are already seeing deteriorating water quality in dry years and when Southern California over consumes, exceeding their committed maximums. We don’t need to have winners and losers in this if other solutions are found. There are alternatives to just taking more fresh water from the Delta. I strongly oppose any solution that increases the volume of water taken from the Delta rather than reducing it. reduce others reliance on it.

Some argue that the Delta is not sustainable as it exists and that The Water Fix, will somehow *help* the Delta. How can taking fresh water out of the Delta, help it? Utter nonsense. Please look at both sides of this issue. There are better solutions that do not adversely impact so many.

Sincerely,

Susan Simpson

Harrison, Katrina <kharrison@usbr.gov>

Good crops require water!!

TISH KEELY <tgkeely@gmail.com> Wed, Jan 31, 2018 at 9:27 PM
To: "kharrison@usbr.gov" <kharrison@usbr.gov>

Katrina Harrison
Project Manager, Bureau of Reclamation,
Bay-Delta Office,
801 I Street, Suite 140,
Sacramento, CA 95814–2536

Dear Ms. Harrison:

I strongly support the Bureau of Reclamation (Bureau) efforts to improve the operation of the Central Valley Project (CVP) and provide a more robust and reliable water supply to communities South of the Delta as outlined in the Bureau "Notice of Intent To Prepare a Draft Environmental Impact Statement, Revisions to the Coordinated Long- Term Operation of the Central Valley Project and State Water Project, and Related Facilities."

The Bureau action is needed to study operations of the CVP water system in order to improve it's operation to meet a significant project goal of providing adequate and dependable water supplies to CVP contractors that rely on the system for irrigation water. We agree with the BOR's determination to evaluate alternatives that will increase storage capacity and optimize capabilities through the Delta, generate additional water or that improve the utilization of water such as desalinization, water conservation, or water reuse, modify operations of the CVP and State Water Project (SWP) to increase sharing of water, and improve the habitat and ecosystem to increase fish populations.

The Bureau process provides a much-needed operational review to ensure the coequal goals of water reliability and protecting, restoring, and enhancing the Delta ecosystem are met. Again, I support the process and look forward to the Bureau's success in achieving improvements to the current system.

Please, help our farmers and our crops!

Tish Keely
15500 Chispa Rd
Atascadero, Ca 93422

--
Thanks,

Tish Keely
Sent from my iPhone

Harrison, Katrina <kharrison@usbr.gov>

Comments on the NOI to Prepare an EIS

Ward Messersmith <wardmeister@hotmail.com> Wed, Jan 31, 2018 at 11:48 AM
To: "kharrison@usbr.gov" <kharrison@usbr.gov>

The tunnel project needs a true cost benefits analysis. It appears it would threaten the Delta's agriculture by allowing salt water intrusion into the area because of diminished water flow allowing salt water from SF Bay to move further into the Delta.

I suggest alternatives such as desalinization, recycling, water conservation, or water reuse be evaluated rather than this fiasco.

We should not be fooled by claims like: "This is For The Farmers",unfortunately this is another scheme that is revealed by following the dollars that flow into Sacramento from the South.

Harrison, Katrina <kharrison@usbr.gov>

No more water for farming a desert.

Aaron I. <aci200sr@gmail.com> Thu, Feb 1, 2018 at 5:43 PM
To: "kharrison@usbr.gov" <kharrison@usbr.gov>

Hello,

I am writing to express my strong and unequivocal opposition to any efforts to maximize or increase Central Valley Project Water Deliveries. I believe that the project diverts water from the vital ecosystem of the San Joaquin Delta and risks causing further and potentially irreparable harm to that ecosystem in order to provide temporary support to unsustainable farming practices of the Southern San Joaquin Valley. That the farming practices in the Southern San Joaquin Valley are unsustainable is evidenced by the severe depletion of the aquifer in this area. Current levels of water diversion from the San Joaquin Delta are already so high that there are increasing salinity levels, pesticide buildup, and algae growth in this area, not to mention backwards tidal flows. This jeopardizes the extremely important sport and commercial salmon fishing industries, not to mention the biological and ecological integrity of the Delta and the survival of its native inhabitants. Please do not go forward with any plan that might divert more water to unsustainable agricultural practices and cause further harm the Delta and those who rely on it. Thank you.

Aaron Inouye

Sent from Mail for Windows 10

Harrison, Katrina <kharrison@usbr.gov>

Please Stop the 'water export plan' proposed by the Trump Administration

Yoga with Allee <alleegus@gmail.com> Thu, Feb 1, 2018 at 9:20 AM
To: kharrison@usbr.gov

Dear Katrina Harrison,

My name is Allee Gustafson and I'm writing this letter in opposition against the Trump Administration's proposal to "maximize water deliveries" to the federal Central Valley Project.

Please stop the proposal to increase Delta exports to agribusiness interests that could devastate populations of salmon, steelhead and other fish species in this region.

Thank you,

--
Allee Gustafson
541-218-8690

Harrison, Katrina <kharrison@usbr.gov>

I strongly oppose any efforts to maximize Central Valley Project Water Deliveries.

Austin Balk <austin.balk@gmail.com> Thu, Feb 1, 2018 at 1:49 PM
To: kharrison@usbr.gov

To whom it may concern,

I am writing to express my strong and unequivocal opposition to any efforts to maximize or increase Central Valley Project Water Deliveries. I believe that the project diverts water from the vital ecosystem of the San Joaquin Delta and risks causing further and potentially irreparable harm to that ecosystem in order to provide temporary support to unsustainable farming practices of the Southern San Joaquin Valley. That the farming practices in the Southern San Joaquin Valley are unsustainable is evidenced by the severe depletion of the aquifer in this area. Current levels of water diversion from the San Joaquin Delta are already so high that there are increasing salinity levels, pesticide buildup, and algae growth in this area, not to mention backwards tidal flows. This jeopardizes the extremely important sport and commercial salmon fishing industries, not to mention the biological and ecological integrity of the Delta and the survival of its native inhabitants. Please do not go forward with any plan that might divert more water to unsustainable agricultural practices and cause further harm the Delta and those who rely on it. Thank you.

Austin Balk
4020 Lawton St.
San Francisco, CA 94122
408-691-2897

TO: Katrina Harrison, Project Manager, Bay-Delta Office, 801 I St., Suite 140, Sacramento, CA 95814-2536 [kharrison@usbr.gov]

From: Bill Roltsch, 8301 Bull Mountain Cir., Elk Grove, CA 95758 [Ph.916 616-4264]

Re: EIS for Revisions to the Coordinate Long-Term Operation of CVP & State Water Project and Related Facilities. –Citizen response-

There are those who see water as that which comes as rain and snow, flows to storage sites and is available for their specific needs.

There are also those who see water as that which is vital to so many needs, including their own. Yes, agriculture is very important to California's vitality; but so is tourism, the commercial fisheries (both the jobs and food they provide), recreational fisheries (again jobs, and also pleasure they provide), Native American heritage interests, recreational water use beyond fishing, and so is a clean well-functioning environment with healthy ecosystems. The list can go on, but the bottom line is, it is essential that **water be an equitably shared resource for many highly valued purposes.**

Fundamentally, the problematic issue pertaining to water in California and elsewhere is "supply and demand" with supply varying in time. I suggest the following corrective options:

- Urban water use is too great in many cases; conservation and other means need to be sought to reduce demand. Residential and commercial use in Southern California is far from where it should be. The adoption of low water use landscaping has a long way to go, as does water usage by home and hotel showers etc. On numerous occasions in recent years, I have experienced shower flows in hotels in Southern California which are far greater than necessary.
- Overall, agricultural demand for water in the Central Valley is too great; some water savings may be obtainable through new technologies and conservation; but it must be asked, "How many acres (given consideration to crop species) can be supported?" Consider reducing actively farmed acreage. Providing a **VERY** fair acreage buyback, coupled with the determination of regional total acreage limits, to control new lands proposed for agricultural production. This is not intended to work towards the demise of agriculture, but quite the opposite. Let's elevate agriculture to high standards that avoid over exploitation of water resources.
- When considered on a broad system-wide basis, new off-stream water storage may have some merit, but it is not a solution; only a small piece in helping to manage water.
- Consider the merits of supporting the creation of several (not all) free flowing rivers, capable of supporting natural salmon runs. Perhaps this could be achieved through limited dam removal and redirecting water to off-stream reservoirs.
- Despite what was touted years ago, fish ladders typically have little use in supporting the movement of fish in large river systems with large dams. It seems to be extraordinarily difficult to overcome the negative impact of reservoirs on salmon. Perhaps creative solutions remain, but of course at considerable expense. But then again, isn't the alternative unreasonable and unthinkable to so many citizens and shareholders in this remarkable state?

Harrison, Katrina <kharrison@usbr.gov>

Comments on Maximizing Water Release from the Delta

Carol Fields <carolmafields@gmail.com> Thu, Feb 1, 2018 at 5:12 PM
To: kharrison@usbr.gov

The Delta is a very complex ecosystem that has been extensively studied, written about, and now, fought over.

The challenges of growing human population, excessive commitment to agriculture in California (87% of water, bringing in 2% of GDP, utilizing water, essential to public security), and increasing climate challenge in the form of drought, violent storms and fires, and rising seas, have made it necessary to think again about water management.

Water has been over-committed, and the eco-system overlooked (endangering the salmon fishing industry, and many other fish, birds, and essential plants)—in and in the surrounds of the Delta, including offshore and upstream.

The state has created the Delta Reform Act of 2009 for a reason—to protect the ecosystem from severe deterioration.

Rather than allowing ignorant management of the growing and challenged population of California, it is time to work skillfully with the available water resources.

Time to think about floating offshore wind platforms, and desalination ships—about storing more water underground.

Time to carefully manage expansion of our building, and our industries, in terms of water use.

Time to stop global warming.

Every federal water facility should be trying to generate electricity from solar.

Thank you,

Carol Fields
Berkeley (member of the Sierra Club)

Harrison, Katrina <kharrison@usbr.gov>

comments: no rollback of specieas protections in OCAP

caryn <carynm5@gmail.com> Thu, Feb 1, 2018 at 5:20 PM
To: kharrison@usbr.gov

I'm writing to share my voice in opposition to species protection on the Central Valley Project and State Water Project operations in California Bay'Delta. Do NOT rollback species protections. More water is needed for watersheds. As it is, CAlifornia's agricultural industries wastes water, abuses labor, and makes record-profits even during the drought. They do not need further assistance.
Please keep me aprised of your actions.
Thank you,
Caryn Mandelbaum
Los Angeles, CA 90008

Harrison, Katrina <kharrison@usbr.gov>

Comments on the NOI to Prepare an EIS

DALE WELIN <dalewelin2867@comcast.net> Thu, Feb 1, 2018 at 6:49 PM
Reply-To: DALE WELIN <dalewelin2867@comcast.net>
To: "Send email to kharrison@usbr.gov (please add a BCC for our STCDA Comment File bdcp.commments.copy@nodeltagates.com" <kharrison@usbr.gov>

Mr. President,

Constructing two 40 foot tunnels to move water south with the current estimate costs is wholly under funded and would be 300 to 400 % more than projected. The estimate goes up every month. Build storage reservoirs to store water. Our delta would be ruined due to this fantasy project.

The same is true for the speed train under construction. Very much under estimated and who in the world is going to ride that train!

We need to have you keep your hands out of the decision for these 2 projects. CALIFORNIA will be able to make the correct results and can cancel them very soon. Already one tunnel is gone due to the estimated costs for 2 tunnels. The second one will be gone in 6-8 months.

Dale Welin - resident of Discovery Bay on the Delta

Harrison, Katrina <kharrison@usbr.gov>

Oppositional disdain to the proposed research and actions to increase pumping of water from the California delta.

Daniel Armstrong <dsa2780@yahoo.com> Thu, Feb 1, 2018 at 8:23 PM
To: kharrison@usbr.gov

I oppose any and all studies and movements by any agency to further exploit the California delta.

-Daniel Armstrong

A delta resident.

Harrison, Katrina <kharrison@usbr.gov>

Written Comment re. Revisions to the Coordinated Long-term operation of the CVP & SWP, & Related Facilities

Daniel Bacher <danielbacher@fishsniffer.com> Thu, Feb 1, 2018 at 4:07 PM
To: kharrison@usbr.gov
Cc: Dan Bacher <danielbacher@fishsniffer.com>

Written Comment re. Revisions to the Coordinated Long-term operation of the CVP & SWP, & Related Facilities

Katrina Harrison, project manager, Bureau of Reclamation, Bay Delta Office, 801 I Street, Suite 140, Sacramento, CA 95814

I strongly oppose the Trump administration's draft plan to "maximize water deliveries" and increase Delta water exports to corporate agribusiness interests in the San Joaquin Valley.

Over 28 years ago a small group of anglers and environmentalists fought to get the Sacramento winter-run Chinook salmon listed for protection under the state and federal Endangered Species Acts. Historically, winter-run Chinook spawned in the upper reaches of Sacramento River tributaries, including the McCloud, Pit, and Sacramento rivers. Shasta and Keswick dams now block access to the historic spawning areas.

Beginning in 1970, the remaining population experienced a dramatic decline, plummeting to a low of only 200 spawners by the early 1990's, due to dramatic increases in water exports through the State Water Project and Central Valley water project pumps in the South Delta.

A small but vocal group, including Chuck De Journette of the Tehama Fly Fishers and John Merz, then the executive director of the Sacramento River Preservation Trust, the Fish Sniffer publisher Half Bonslett and others, kept going to the Commission meetings and working on the federal level for the listing of the winter run Chinook as endangered.

We finally succeeded on the state level later that year when the fish was listed as "endangered." The National Marine Fisheries Service also listed the winter run as "threatened," five years after the agency received the petition calling for the listing.

After receiving another petition, NMFS listed the fish as "endangered" in 1990. In the years since the initial listing, run numbers have bounced up and down, with a number of measures taken, including the screening of unscreened diversions on the Sacramento, the removal of the Red Bluff Diversion Dam and some limited restrictions on Delta pumping resulting from federal biological opinions. We hoped that the fishery would recover with the listing and some measures taken to restore the salmon, but it hasn't.

It's now 2018, over 28 years after the initial listing, and the winter run Chinook salmon is still in deep, deep trouble. Record exports of water by the state and federal governments and poor management of upstream reservoirs, combined with a historic drought, have counteracted the proactive measures taken, leading to the decline of the fish in recent years.

The Winnemem Wintu Tribe and their allies are working to reintroduce the original run of McCloud winter run Chinook. now thriving on the Rakaira River in New Zealand where they were introduced over a hundred of years ago, back to their ancestral home on the McCloud.

Only 1,123 adult winter Chinook salmon, once one of the biggest salmon runs on the Sacramento River and its tributaries, returned to the Sacramento Valley in 2017, according to a report sent to the Pacific Fishery Management Council (PFMC) by the California Department of Fish and Wildlife (CDFW). This is the second lowest number of returning adult winter run salmon since modern counting techniques were implemented in 2003.

The decline of the winter run Chinook parallels the dramatic decline of spring run and fall run Chinook salmon, Central Valley steelhead, delta and long fin smelt, green sturgeon and host of other species. In spite of a record water year in Northern California, the abundance of Delta smelt recorded in the state's annual fall midwater survey (FMWT) is the lowest in the survey's 50-year history. Only two Delta smelt were collected at Delta index stations in October.

Meanwhile, the Klamath and Trinity River salmon runs declined to record lows this years, forcing the closure of recreational and commercial fishing and severely limiting Tribal subsistence fishing.

Yet today, rather than do the right thing at take measures today to restore these species, the Trump administration aims to increase pumping and take other measures to “maximize water deliveries” for Central Valley Project irrigators, making conditions even worse for the salmon, smelt and other fish.

Everybody who supports the Delta, Sacramento, Klamath and Trinity River and other fish populations must oppose this latest effort by the water contractors to enrich themselves at the expense of fish, Tribes, fishermen, family farmers and all of the people of California — and support the Winnemem Wintu Tribe’s plan to restore the original population of Chinooks to the McCloud River above Shasta Dam, as well as the campaign by the Yurok, Karuk, Hoopa Valley Tribes, fishing groups and environmentalists to bring down the dams on the Klamath River.

The Bureau must increase Delta flows, not decrease them, to restore salmon and Delta smelt rather than driving them to extinction. We cannot allow this massive water grab to happen!

Dan Bacher, Editor, Fish Sniffer Magazine, 3201 Eastwood Road, Sacramento, CA. 95821-3713, 916-993-9663

Harrison, Katrina <kharrison@usbr.gov>

Oppose intent to prepare EIS for revisions to CVP, SWP.

Dave Warner <dwar11@gmail.com> Thu, Feb 1, 2018 at 11:41 AM
To: kharrison@usbr.gov

Dear Ms. Harrison,

Please except this electronic mail in response to the request for comments for the “Notice of Intent To Prepare a Draft Environmental Impact Statement, Revisions to the Coordinated Long-Term Operation of the Central Valley Project and State Water Project, and Related Facilities.”

I oppose this project if the intent is to increase water deliveries from the Delta to agricultural and urban water users without first achieving a full recovery of the Delta ecosystem including a full recovery of the Delta smelt.

Californians have repeatedly demonstrated their interest in protecting the Delta, particularly with the passage of the Delta Reform Act of 2009. In 2016 Bay Area voters voted to tax themselves to restore wetlands.

The Delta today remains in severe ecological crisis. As demonstrated by the Fall 2017 monthly abundance indices, no Delta smelt were found in 3 of 4 months and in the fourth (in October 2017) only two were found. Losing the Delta smelt would not only be a loss to our biological diversity but also a loss to the associated food chain.

I'm afraid this project will primarily create litigation and heartache.

Thank you for considering this electronic mail.

Sincerely,

Dave Warner

Palo Alto, CA

Nelson, Benjamin <bcnelson@usbr .gov>

I support your efforts

1 message

don@waterwrights.net <don@waterwrights.net> Thu, Feb 1, 2018 at 11:24 AM
To: bcnelson@usbr.gov

Feb 1, 2018

Dear Mr. Nelson:

I strongly support the Bureau of Reclamation (Bureau) efforts to improve the operation of the Central Valley Project (CVP) and provide a more robust and reliable water supply to communities South of the Delta as outlined in the Bureau "Notice of Intent To Prepare a Draft Environmental Impact Statement, Revisions to the Coordinated Long- Term Operation of the Central Valley Project and State Water Project, and Related Facilities." The Bureau action is needed to study operations of the CVP water system in order to improve its operation to meet a significant project goal of providing adequate and dependable water supplies to CVP contractors that rely on the system for irrigation water. We agree with the BOR's determination to evaluate alternatives that will increase storage capacity and optimize capabilities through the Delta, generate additional water or that improve the utilization of water such as desalinization, water conservation, or water reuse, modify operations of the CVP and State Water Project (SWP) to increase sharing of water, and improve the habitat and ecosystem to increase fish populations. The Bureau process provides a much-needed operational review to ensure the coequal goals of water reliability and protecting, restoring, and enhancing the Delta ecosystem are met. Again, I support the process and look forward to the Bureau's success in achieving improvements to the current system. Sincerely,

Don A. Wright

Waterwrights.net

Clovis, CA

559/355-2389

don@waterwrights.net

Harrison, Katrina <kharrison@usbr.gov>

OBJECTION TO THE DEPARTMENT OF THE INTERIOR, Bureau of Reclamation's [RR02800000, 18XR0680A1, RX.17868949.0000000] Notice of Intent To Prepare a Draft Environmental Impact Statement

Helene Rouvier <hrouvier@yahoo.com> Thu, Feb 1, 2018 at 3:42 PM
Reply-To: Helene Rouvier <hrouvier@yahoo.com>
To: "kharrison@usbr.gov" <kharrison@usbr.gov>

Dear Ms. Harrison -

I am writing to express my objection to the proposed Notice of Intent to prepare an EIS. The process circumvents existing California State water policy and legislation enshrined in Proposition 1 which provides funding for specific water projects and the associated Water Quality, Supply, and Infrastructure Improvement Act of 2014.

The proposed EIS is quite simply a federal end run and water grab for the wealthy ag interests without any attempt to address the need for sustainable water uses, including
1) rain water runoff catchment; 2) an end to fracking; 3) drip system irrigation in both agricultural and residential areas; 4) repairs of leaky canals and pipelines; 5) underground water storage instead of reservoirs; 6) moratorium on golf courses and artificial lakes in arid communities; 7) recycling and reuse, and 8) sustainable municipal and home water use.

Additionally (as acknowledged in the Federal Register notice) *"There are Indian Trust Asset issues and there may be environmental justice issues related to the Trinity River, as well as potential impacts within other areas."* As a long time resident of the North Coast of California, I can attest to the long term and critical negative impacts on Tribal Nations, health of our rivers, and native fish with the implementation of water policies that diminish adequate river flows and divert water to large-scale ag interests in the Central Valley and beyond. All residents are suffering from the resulting toxic algae and fish die-offs these ill-advised water policies have created. The once thriving fishing industry has also suffered, leaving the coastal counties with severe economic downturns and few options for growth and living wage jobs. Endemic poverty, homelessness, and health issues (including substance abuse) can be attributed to this depressed local economy.

For these reasons, and in light of the very vague language contained in this notice, I strenuously object to the EIS scoping process and any subsequent federal determination.

Helene Rouvier
ADEM-02 delegate
Rural Caucus member

Harrison, Katrina <kharrison@usbr.gov>

Comments on the NOI to Prepare an EIS

Jan McCleery <jmccleery@duckpondsoftware.com> Thu, Feb 1, 2018 at 12:17 PM
To: kharrison@usbr.gov

I live in Discovery Bay, and many projects proposed by the USBR and the State continue to threaten my community: our economy and way of life. Our economy is totally based on boating and recreation in the Delta: our home values, our primary businesses (marina and boat-based businesses). A neighboring community, Mountain House, suffered 9 foreclosures out of every 10 homes when the housing market failed in 2009 and still has not recovered. Discovery Bay suffered very little because we have boating in our back yards and are a unique community. We are not alone in our concerns. Bethel Island's economy is similarly based on boating and fishing plus all of the neighboring communities and marinas here in the South Delta.

Therefore, we are very concerned when new projects are discussed that would put gates or dams in our waterways (like the Two-Gate 'Fish Protection' Project that we fought against in 2009), and the Delta Tunnels with it's construction project that would rip through the waterways for years including all nearby recreational sloughs, block access to marinas and restaurants, and cause other damage. Like the new Fish & Wildlife Franks Tract Study that would fill half of that important State Recreation Area with tunnel muck and create a salinity wall. We are opposed to any actions that bring salinity further into the Delta, threatening Antioch and Contra Costa water supplies, farmers on Delta Islands plus throughout Contra Costa County that irrigate with Delta water, and even our local golf course which relies on Delta water for irrigation.

With that in mind, here are my specific comments:
○ I **HIGHLY recommend that the first action should be to consider other alternatives** to generate additional water or that improve and optimize the utilization of water such as desalinization, recycling, water conservation, or water reuse.

o I HIGHLY recommend actions that could clean up the farm waste water from the Central Valley farms that now flows into the San Joaquin, which makes that river polluted and is why the farmers now want the Sacramento River water instead.

○ I could TENTATIVELY support Habitat restoration and ecosystem improvement projects, but only IF IN ADDITION to increased through-delta flows, not in place of. While such projects may aid fish populations, fish cannot be saved without increasing the flow. The BDCP habitat projects conducted over the past years show that, while some have minor positive impacts and other have no impacts, none were significantly beneficial. Whereas increased flow has been shown to immediately improves fish populations.

○ When considering if any actions are possible that increase export capabilities through the Delta, I **STRONGLY OPPOSE any new gates, dams, or other obstructions in the Delta waterways**. Projects such as the 2-Gates Fish Protection Project violate The Rivers and Harbors Act, destroy boating, and thus ruin the economy of boating communities.

○ I **STRONGLY OPPOSE** making any modifications to the current environmental and regulatory requirements **that would negatively impact the fish or increase salinity**.

○ I **STRONGLY OPPOSE any modifications to operations that reduce rather than increase** the flow through the Delta.

o I **HIGHLY RECOMMEND other alternative actions OUTSIDE the Delta**, that would REDUCE RELIANCE on the Delta and DECREASE EXPORT levels, thus better meeting the Delta Flow Requirements.

FOR EXAMPLE:

○ Restoring the Tulare Lake Basin for increased storage capacity south of the Delta and as percolation ponds to restore ground water.
o Improved ground water storage and better ground water management including more controlled management of the Kern Water Bank, which now is privatized and reportedly was used for personal watering of orchards and reselling water to urban developers.

Whatever is done, I **REQUEST that the USBR identify water quality standards that must be maintained, in various parts of the Delta (including the Discovery Bay waterways, where flow is limited due to drought years and other stressors)** to be sure any changes improve, and don't degrade, water quality and health of the Communities that live here. During the drought, we suffered from toxic blue-green algae blooms, which shut down our waterways to swimming and contact and significantly impacted our economy. Home sales fell through and marina businesses suffered. **Ask them to please commit that any operational changes keep the health and safety of Delta communities.**

Thank you for your consideration

Jan McCleery
5672 Drakes Drive
Discovery Bay, CA 94505

Email: jmccleery@duckpondsoftware.com

Harrison, Katrina <kharrison@usbr.gov>

Scoping comments

Jesse Roseman <jessetroseman@gmail.com> Thu, Feb 1, 2018 at 8:28 PM
To: kharrison@usbr.gov

Author: Jesse Roseman
Subject: comments on the Notice of Intent To Prepare a Draft Environmental Impact Statement, Revisions to the Coordinated Long-Term Operation of the Central Valley Project and State Water Project, and Related Facilities

COMMENTS
Scope should include:

- Existing and proposed CVP and SWP (Project) Service Areas and storage and export facilities, along with areas where non-flow habitat projects might be recommended/ required
- All tributaries and watersheds that contribute flows to Project facilities, or whose required flows may be impacted under different diversion and pumping scenarios
- Storage opportunities including expanded groundwater storage
- Reservoir reoperation and recalculation of flood curves as part of efforts to increase supply and storage
- Water reliability to diverters, in San Joaquin and Sacramento watersheds and tributaries, that contribute to Delta flows
- Scenarios that match any eventual Unimpaired Flow negotiated agreements
- For impacted species, a vision of shared responsibility for improving habitat conditions and reducing stressors between 1) upstream tributary diverters and 2) CVP and SWP diverters
- Project benefits and impacts for salinity management and drainage in areas irrigated by CVP and SWP, or influenced by its operation
- Expanded Project management options that allow periodic increases of salinity in interior portions of the Delta, in order to better control invasive species whose ranges and populations depend on freshwater and have expanded in response to reduced salinity
- Model the amount of invasive species reductions necessary to recover target species, and quantify necessary salinity levels to eliminate that amount, thereby reducing invasive species' consumption of base level productivity to tolerable levels for the benefit of target species
- In order to improve operation of the projects, and increase diversions, a vision of how to improve the populations addressed by the two biological opinions
- A definition of unimpaired flows that includes both freshwater outflows and historical salinity levels in the delta and tributaries, as happened historically during floods, drought, and seasonal fluctuations including dry year summer flows
- Although increased salinity could necessitate temporary cessations of pumping and diversion, determine the amount of advance preparation and storage, necessary to maintain service to those dependent on Project operations. Determine amount of increased flows necessary to flush salinity and return to conditions appropriate for Project operation
- Calculations of dollar and species benefits of invasive species reductions due to increased salinity vs. status quo over extended time periods
- Potential benefits and impacts to agricultural production, and any necessary mitigation

Harrison, Katrina <kharrison@usbr.gov>

Comments on the scope of the EIS

Jessica Cardwell <jacard88@gmail.com> Thu, Feb 1, 2018 at 10:23 AM
To: kharrison@usbr.gov

Dear Ms. Harrison,

As a resident of Discovery Bay I am concerned about the future of our beautiful Delta town, our home values and those of all our surrounding cities. My belief is that your agency should NOT make changes to export operations that would risk the environment and fisheries, rather you should look at other alternatives.

Alternatives such as restoring the Tulare Lake Basin for increased storage capacity south of the Delta and as percolation ponds to restore ground water. Improved ground water storage and better ground water management including more controlled management of the Kern Water Bank. Other potential ways to provide more water may come from desalinization, increased conservation and recycling/reuse of water.

The agency should look as well at cleaning up farm waste water from those central valley farms that has polluted the San Joaquin. The pollution has pushed those farmers to come north for our water but it is an important and necessary resource for those of us living on it. It seems we all would be better off fixing the pollution issue instead of just taking someone else's water.

The Delta is a beautiful and unique place. It is already under stress and during drought years, has developed toxic green algae. Algae that is fatal to animals and can make people very sick. Decreasing the water flow here would have disastrous effects to the humans and animals that live, work and play on the water. I STRONGLY OPPOSE any new gates, dams, or other obstructions in the delta waterways. My hope is that you will consider the very real ways this impacts the hundreds of thousands of people that call the Delta home.

Thank you,

Jessica Cardwell

Sent from my iPhone

Harrison, Katrina <kharrison@usbr.gov>

Fwd: Comments on the scope of the EIS

Jorja Gazmuri <jgazmuri@aol.com> Thu, Feb 1, 2018 at 4:11 PM
To: kharrison@usbr.gov

I am a homeowner in Discovery Bay who strongly opposes any additional modifications to the current environmental and regulatory requirements that would harm our fish and wildlife, water quality, salinity, livelihood of businesses and our property values. We already feel the harmful effects of decreased water flows because of the water that is presently being sent down south.

The 2 Gates Fish Protection Project is a violation to The Rivers and Harbors Act. This will negatively impact our boating communities and boating. We request that the USBR identify water quality standards that must be maintained in the Delta including the Discovery Bay waterways. Due to the drought years we suffered from very poor water quality including toxic blue-green algae which blocked waterways, did not allow for swimming and affected our home values.

We strongly oppose any new gates, dams, or other obstructions in the Delta waterways. Why can't we use alternative methods other than the Delta for example;

Improve and optimize the utilization of water through water conservation, desalinization or recycling .

Restore the Tulare Lake Basin for increased storage capacity and percolation ponds to restore ground water. Improve ground water storage and more controlled management of the Kern Water Bank which is privatized and reportedly has been used for watering of orchards and been resold to urban developers.

Cleanup farm waste water from the Central Valley Farms that run into the San Joaquin polluting it and now the Farmers want the Sacramento River,

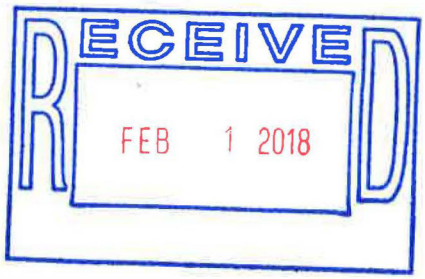
The Delta is a precious natural resource of water and wildlife and we must reduce the reliance on it and decrease export levels before it is too late to save.

The tunnels will be a financial and environmental disaster which should be avoided and we will continue to fight to stop it.

Thank you,

Jorja Gazmuri
5730 Gateway Court
Discovery Bay, CA 94505

January 22, 2018



Katrina Harrison
Project Manager
Bureau of Reclamation
Bay Delta Office
801 I Street, Ste 140
Sacramento. CA 95814-2536

Re: Proposal to Maximize Central Valley Project Water Deliveries

Dear Ms. Harrison,

As a Sacramento resident who cares who cares deeply about the health of the Delta, I am writing to express my strong opposition to your proposal to increase Delta water deliveries. Your proposal completely disregards the ecological health of the Delta and the economic impacts on local residents who depend on it.

The Delta is already in serious trouble due to the amount of water that is being sent south. Water quality is diminishing, salinity is increasing as are poisonous algae blooms. Fish populations, including smelt and salmon are dropping and smelt populations are now so low that they may be close to extinction. Smelt are a key component of the Delta food chain and, if they go, salmon will also go and the losses will ripple through the entire Delta ecosystem as well as through its farming, fishing and recreational economy. To save and restore the Delta, we have to cut back on the water that goes south, not increase it.

The Delta has been struggling for years thanks to excessive water exports. California has always had drought cycles and climate change is making them far worse. As temperatures continue to rise scientists predict still more drought and, at some point, a preponderance of rain rather than snow in the Sierras. Given these realities, we need to be thinking in terms of sustainability which means reducing agricultural water use throughout the state and transitioning from high water use perennial crops like almonds to annual crops that use less water and allow fields to be fallowed in years of severe drought. Everyone in California, including farmers, will need to both conserve and recycle water. It makes absolutely no sense to sacrifice what's left of the ecological health of the Delta as well as the economic health of the fisheries, small farmers and recreational businesses that depend on it so that unsustainable farming practices can continue for a few more years.

In 2009 the California legislature recognized that the Delta was in serious trouble and passed the Delta Reform Act that mandates that future state water solutions must reduce reliance on the Delta. California has not been good about following its own law and that needs to change. Please don't make a bad situation even worse by ignoring the Delta Reform Act and mandating that still more water be sent south to satisfy a few powerful agribusiness interests because, in so doing, you will also be mandating the ecological collapse of the Delta.

Thank-you for this opportunity to comment.

Sincerely,
Karen Jacques Karen Jacques
1209 T Street, Sacramento CA 95811

Harrison, Katrina <kharrison@usbr.gov>

Comments on the NOI to Prepare an EIS

Karen Mann <Karen@mannappraisal.com> Thu, Feb 1, 2018 at 9:59 AM
To: "kharrison@usbr.gov" <kharrison@usbr.gov>

Please pass on to President Trump that most of us in the Delta Waterway region of northern California have supported him throughout his presidency and run for office. We are located 75 miles inland from San Francisco and do not hold the values that those in the urban centers on the coast hold. The California Delta is rich in history – going back to the Gold Rush Days. This 1000 mile area of waterway is like the wilderness – we have an abundance of sportmen (hunters and fisherman) who have nurtured the balance of food on the table versus maintaining the cycle of recreation as well. These waterways should be protected from our Governor and the Southern California Metropolitan Water District who really don't care about those of us who live and work in these waterways (farmers, small towns, marine activities, etc). We know your family enjoys hunting and the freedom to pursue "wild game"….well the California Delta is home to outstanding fishing (Largemouth Bass, Striped Bass, Sturgeon, Catfish, etc). Game includes pheasant, duck, goose, wild pigs and more.

Please do not allow the waterways to be destroyed with the intent to allow the Central Valley project (which would only benefit southern Valley and Southern California) – encourgage them to use desalinaetion as a form of obtaining more water for export; it will cost less and it will be more dependable. The water flow in the California Delta waterway is dependent on the snow pack we have in the Sierra Mountains…especially years with little snow/rain (like this year) – the salt water will intrude to our residents in the Delta region via drinking water (well), and destroy the historical environment we currently enjoy in the fresh water of the California Delta.

The financial loss to the economy of the California Delta region will be vast and will decimate the area. Please do not allow this decimation just for the increase of exports (primarily almonds)….Let us enjoy the land as it has been configured and used since the 1800's.

-As a real estate appraiser for 38 years, I can sadly assure you that the loss of property values in the region will be vast due to the destruction of the waterways.

Thank you for your consideration – Our prayers and hope to Make America Great….are in your hands…right here in our back yard. The ones who will benefit from the Central Valley Project is a small group….which will affect the livelihood and lives of all in the Delta region. Please see through the lies and realize that this is a way for a small group who support Diane Fienstein to make a lot of money in their holdings (Almond ranches)

Blessings to you, your family and the USA! Thank you for all you have done so far in your presidency!!!!!

Sincerly

Karen J. Mann, ASA, SRA – Certified General Appraiser

Mann & Associates – Real Property & Expert Witness Valuation

14850 Highway 4 #A326, Discovery Bay CA 94505

925.513.3231

510.790.2345 East Bay

925.513.8465 Fax

www.mannappraisal.com

Harrison, Katrina <kharrison@usbr.gov>

Comments on the NOI to Prepare an EIS

Karen N Scott Schmidt <discobay_scott@msn.com> Thu, Feb 1, 2018 at 10:16 AM
To: "kharrison@usbr.gov" <kharrison@usbr.gov>

To Whom It May Concern,

I am writing to voice my opinion regarding the Delta Gates and the Twin Tunnels Project (AKA Water Fix).

I am vehemently against these projects as it does not create one more drop of water, and additionally, creates a strain on an already fragile environment, namely the San Joaquin delta area. For the last 2 years have been subject to a blue green algae which rendered the water in Discovery Bay unswimable for humans and dogs.

I am also concerned that the water sent south will end up in fracking wells. Each well requires one million gallons of water. Of which over 150 chemical are added to the water and injected into the earth. When it is retrieved, then what? We are left with tainted unusable water. It is too precious a resource to be destroyed for a dirty, dying source of energy.

I'm no expert, but it only makes common sense to promote water creation and storage.

Please to the right thing for Californians,

Sincerely,
Karen Schmidt

Sent from Windows Mail

Harrison, Katrina <kharrison@usbr.gov>

Please save our water

MIKE NIEMAN <1nieman@comcast.net> Thu, Feb 1, 2018 at 3:33 PM
Reply-To: MIKE NIEMAN <1nieman@comcast.net>
To: kharrison@usbr.gov

Ms. Harrison,

Please don't do anything to take water from the Delta. The Delta is a natural eco system that flushes itself daily with the changing of the tide. The system will take care of itself without much effort if we just leave it alone. The farmers of the Central Valley as well as the residents of Southern California have no right to this water. Those who need more water in the South should build their own containment to achieve their needs. Thank you in advance for your attention to this matter.

.

Mike Nieman

American Canyon, Ca.

Nelson, Benjamin <bcnelson@usbr .gov>

BOR/Trump plan maximizing water deliveries to southern CA

1 message

Misa Joo <misa@misajoo.com> Thu, Feb 1, 2018 at 3:53 PM
To: kharrison@usbr.gov, bcnelson@usbr.gov
Cc: Caleen Sisk <caleenwintu@gmail.com>

To Katrina Harrison and Ben Nelson,
I am weighing in on the BOR/Trump plan which will maximize water deliveries from these northern rivers as well as the Bay Delta south, a destructive plan which would include diversion of the Sacramento River to the Bay, killing species which depend on the largest estuary this side of the Pacific to survive and flourish. The plan would include projects such as raising Shasta Dam higher and other dam projects on the other Sacramento tributary as well as the Trinity. All these rivers are already impacted negatively. The fish runs are severely impacted. The Shasta Dam raise would also drown the last of the Winnemem Wintu sacred lands, medicine places, ceremonial sites, historical homelands, and extinguish the reintroduction of Salmon above the dam. These projects are Xtreme, dangerous, foolhardy — and again for the profit of the few and other Xtraction projects (fracking) which we know to be hungrily wanting every drop of water that can be had. As the BOR I am sure you are aware of what Californians think about fracking and its correlation with earthquakes, and the possibilities of Fukushima times more on our coast.

Please, register me as a NO on the Trump Plan. He does not care about California!!!!

Sincerely, Misa Joo

Harrison, Katrina <kharrison@usbr.gov>

Comments on the NOI to Prepare an EIS

Rich Dooley <rich.dooley@yahoo.com> Thu, Feb 1, 2018 at 9:58 AM
To: kharrison@usbr.gov

As a resident of Discovery Bay I strongly appose making any modifications to the current environment and regulatory requirements that would negatively effect impact the fish or increase salinity.
regards, Rich Dooley
791 Beaver Ct
Discovery Bay, CA 94505

RECLAMATION
Managing Water in the West

U.S. Department of the Interior
Bureau of Reclamation

RECEIVED
FEB 1 2018

Comment Card for

EIS for the Revisions to the Coordinated Long-Term Operation of the Central Valley Project and State Water Project and Related Facilities

Thank you for your interest in providing information to consider for the Environmental Impact Statement for the Revisions to the Coordinated Long-term Operation of the Central Valley Project and State Water Project and Related Facilities

Name RONALD FORBES Phone Number 209 368 5767 Email BLUESEQ3@YAHOO.COM
Organization Represented DELTA FLY FISHERS
Address 132 S. CRESCENT AVE
City LODI State CA Zip 95240
Public Comment THE DELTA FLY FISHERS ADAMANTLY OPPOSE AND OBJECT TO INCREASING DIVERSIONS OF MORE WATER FROM THE DELTA. RESEARCH FROM BOTH THE STATE AND FEDERAL GOVERNMENT HAS SHOWN A DIRECT CORRELATION WATER DIVERSION AND MASSIVE LOSSES OF THE DELTA'S FISHERIES. DURING THE USBR'S WATCH & ACTIONS MANY INDIGENOUS SPECIES FACE EXTINCTION, YOUR PROPOSED ACTIONS WILL GUARANTEE THE FIRST EXTINCTIONS SINCE THE EPA'S INCEPTION. STOP SUBSIDIZING CORPORATE AGRIBUSINESS AT THE EXPENSE OF THE DELTA'S AGRICULTURE, IT'S ECONOMY, IT'S ENVIRONMENT, AND ITS FISHERIES

How did you hear about this meeting? (Please check one)
☐ Newspaper Ad ☐ Reclamation Website ☐ Social Media ☐ Email Announcement ☐ Other: _____

Please leave this card in a drop box at the public scoping meeting or add postage and place the stapled, self-addressed mailer in any U.S. mailbox. Written comments will be accepted until close of business, Thursday, February 1, 2018.

~~Katrina Harr~~ison
~~Bureau of Reclamation, Bay Delta Office~~
8~~01 I Street, Suite 140~~
~~Sacramento, CA 95814-2536~~

USA
NON-MACHINEABLE SURCHARGE

R. A. FORBES
132. S. CRESCENT AVE
LODI, CA 95240

RECEIVED
FEB 1 2018

Katrina Harrison
Bureau of Reclamation, Bay Delta Office
801 I Street, Suite 140
Sacramento, CA 95814-2536

Revisions to the Coordinated Long-term Operation of the Central Valley Project and State Water Project and Related Facilities

Harrison, Katrina <kharrison@usbr.gov>

Scoping Comments to Revisions to Long-Term Operation of CVP and SWP

Sarah Lee <sarahrlee@gmail.com> Thu, Feb 1, 2018 at 8:56 PM
To: kharrison@usbr.gov

Dear Katrina,

I'm writing to follow up on the public scoping meeting held in Chico last week and to submit a couple of written comments. Thanks for hosting this public comment period and making it easy for the public to participate. We spoke briefly at the back of the room in Chico and I promised to send some articles on the 'water soft path', which I encountered this approach during my IWRM master's research on Israel's water strategy in 2009. Below are two written comments I'd like to submit, the first one introducing the water soft path and the second requesting the goal of maximizing water deliveries be changed to 'sustainably managing California's water resources for the benefit of all Californians and preservation of the environment'.

Thank you for your consideration and best of luck in your work.
Sarah Lee

Comment #1 of 2:
As you and your team plan revisions to the CVP, please look into and consider using the 'water soft path' approach. The water soft path involves planning backwards from a desired outcome of water-related goods and services and then figuring out how to meets those needs in an environmentally sustainable and responsible way. Here are a couple of key excerpts to introduce the approach and concepts:

"A New Approach for Water [sub heading] What is required is a 'soft path', on that continues to rely on carefully planned and managed centralized infrastructure but complements it with small-scale decentralized facilities. **The soft path for water strives to improve the productivity of water use rather than seek endless sources of new supply. It delivers water services and qualities matched to users' needs, rather than just delivering quantities of water. It applies economic tools such as markets and pricing, but with the goal of encouraging efficient use, equitable distribution of the resource, and sustainable system operation over time. And it includes local communities in decisions about water management, allocation, and use.** As Lovins noted for the energy industry, the industrial dynamics of this approach are very different, the technical risks are smaller, and the dollars risked far fewer than those of the hard path."
and
"Rethinking water use means reevaluating the objectives of using water. Hard-path planners erroneously equate the idea of using less water, or failing to use much more water, with a loss of well-bring. This is a fallacy. Soft-path planners believe that people want to satisfy demands for goods and services, such as food, fiber, and waste disposal, and may not care how much water is used -- or even whether water is used at all -- as long as these services are produced in a convenient, cost-effective, and socially-acceptable ways. Thus, **society's goal should be not to the use of water, but improved social and individual well-being per unit water used.**"
From Peter Gleick of the Pacific Institute, published in Science, 2003.
http://www.pacinst.org/wp-content/uploads/2013/02/science_1120033.pdf

The Soft Path for Water, Gary Wolff and Peter H Gleick. Chapter 1 of The World's Water 2002-2003 http://www.pacinst.org/wp-content/uploads/2013/02/worlds_water_2002_chapter1.pdf

The Water Soft Path in a Nutshell, updated 2007 https://poliswaterproject.org/files/2007/09/The-Soft-Path-for-Water-in-a-Nutshell.pdf

Beyond Greater Efficiency: the Concept of Water Soft Paths, David Brooks, 2005. http://www.tandfonline.com/doi/pdf/10.4296/cwrj300183

Applying Water Soft Path Analysis in Small Urban Areas: Four Canadian Case Studies, David Brooks, 2015 International Journal of Water Resources Development
https://poliswaterproject.org/polis-research-publication/applying-water-soft-path-analysis-small-urban-areas-four-canadian-case-studies/

Wikipedia entry: https://en.wikipedia.org/wiki/Soft_water_path

Comment #2 of 2:

The **goal of this Revision to the CVP** - that of maximizing water deliveries [from northern California to southern California) - **completely misses the mark**. The goal should be the sustainable stewardship of California's water resources for the environment and all Californians. The **irrational use and abuse of SWP and CVP water is illustrated and detailed in a recent investigative reporting piece called "Kingdom from Dust"** by Mark Arax, Jan 31 2018, published in The California Sunday Magazine. It outlines Stewart Resnick's consolidation of wealth through permanent crops (almonds, pistachios, pomegranate) irrigated with water conveyed at tax payer expense. The article shows an extravagant abuse of northern California water. Section 1 and Section 5 of the article are most relevant, and tragically poetic to read. Until this abuse of water is curtailed and until water stewardship is responsible and fair, it is unconscionable to discuss delivering even more water south. This is especially the case because transferring more water from the north would be detrimental to the environmental and human needs of water and salmon in the north. **The focus of the Bureau of Reclamation's work in California should be on rational and efficient use of existing water - potentially even reducing water deliveries over time to adapt to the realities of climate change impacts - and corrections to the institutional, market, and legal framework failures that permit such abuse to occur.**

Harrison, Katrina <kharrison@usbr.gov>

Comments on the NOI to Prepare an EIS

Scott Anders <ScottA@palecek.com> Thu, Feb 1, 2018 at 3:16 PM
To: "kharrison@usbr.gov" <kharrison@usbr.gov>

It is my understanding that the Trump administration wants to support the twin tunnels taking water from the Sacramento river and move it south. This plan is ridiculous; it provides **zero** more water and will forever change the estuary because the salinity levels will increase and move deeper into the Delta killing wild life and plants and trees. The farmers currently pump water out of the many slues in the area to grow food; they will no longer be able to do so with so much salt in the water. I live in Discovery Bay CA; I can walk down to my dock and fish for largemouth bass; croppy; blue gill and many other species; the high salinity will kill and or drive all fresh water fish from the area; this is not acceptable. I am vehemently against this plan……..Scott Anders; 1730 Surfside CT; Discover Bay CA 94505.

Harrison, Katrina <kharrison@usbr.gov>

Comment on efforts to maximize Central Valley Project deliveries

Sean O'Rourke <smorourke@ucdavis.edu> Thu, Feb 1, 2018 at 12:45 PM
To: kharrison@usbr.gov

Hello Katrina,

I study salmonid fish at UC Davis. The Sacramento river contains four distinct types of Chinook salmon: spring run, fall run, late fall run and winter run. The spring run fish are listed as threatened and the winter run are critically endangered. Steelhead are also present in the Sacramento river and are listed as threatened.

Because there are salmonid fish (both adults and juveniles) in the river everyday of the year, we cannot afford to increase water deliveries at all. Our fish are already at very reduced abundance due to water exports and any additional exports will have negative consequences. Please keep this in mind.

Thank you,

--
Dr. Sean O'Rourke
Assistant Project Scientist
One Shields Avenue
Department of Animal Science 2251 Meyer Hall
University of California, Davis
Davis, CA 95616
Phone: 530-304-5339

Harrison, Katrina <kharrison@usbr.gov>

Improvement to the Central Valley Project for a more stable and reliable water supply

Stacia Olivera <sholivera@aol.com> Thu, Feb 1, 2018 at 10:37 AM
To: kharrison@usbr.gov

2/1/18

Katrina Harrison

Project Manager, Bureau of Reclamation, Bay-Delta Office,

801 I Street, Suite 140,

Sacramento, CA 95814–2536

Dear Ms. Harrison:

I strongly support the Bureau of Reclamation (Bureau) efforts to improve the operation of the Central Valley Project (CVP) and provide a more robust and reliable water supply to communities South of the Delta as outlined in the Bureau "Notice of Intent To Prepare a Draft Environmental Impact Statement, Revisions to the Coordinated Long- Term Operation of the Central Valley Project and State Water Project, and Related Facilities."

The Bureau action is needed to study operations of the CVP water system in order to improve it's operation to meet a significant project goal of providing adequate and dependable water supplies to CVP contractors that rely on the system for irrigation water. We agree with the BOR's determination to evaluate alternatives that will increase storage capacity and optimize capabilities through the Delta, generate additional water or that improve the utilization of water such as desalinization, water conservation, or water reuse, modify operations of the CVP and State Water Project (SWP) to increase sharing of water, and improve the habitat and ecosystem to increase fish populations.

The Bureau process provides a much-needed operational review to ensure the coequal goals of water reliability and protecting, restoring, and enhancing the Delta ecosystem are met. Again, I support the process and look forward to the Bureau's success in achieving improvements to the current system.

Sincerely,

Stacia H. Olivera

Chief Financial Officer

Hammonds Ranch, Inc.

47375 West Dakota Ave.

Firebaugh, CA 93622

Harrison, Katrina <kharrison@usbr.gov>

Comments on the NOI to Prepare an EIS

Suzanne Womack <jsagwomack@gmail.com> Thu, Feb 1, 2018 at 3:52 PM
To: kharrison@usbr.gov

Suzanne Womack
Clifton Court, L.P.
3619 Land Park Drive
Sacramento, CA 95818

February 1, 2018

Dear Ms. Harrison,

Our family farm, Clifton Court, L.P. is the last remaining farm from the 1870's that still operates at Clifton Court. Our levees on Old River connect USBR's Tracy Fish Facility and DWR's State Water Project. Any changes in pumping at the Central Valley Project (CVP) will affect our farm and our levees.

We strongly oppose any increases in pumping. Both the CVP & the SWP were dropped into the south delta without an EIR or EIS. Already the area pumps over 15,000 cfs in an area where historically about 50 cfs was taken for farms at Clifton Court. Your pumping already causes damage to our levees and degrades our water quality. Your pumping has caused hundreds of thousands of dollars worth of damages to our pumps and levees. You have ignored our requests for compensation for damages. Before you begin any new projects, you need to fix and pay for the damages caused by the CVP. We need to decrease exports from the Delta and reduce the south state's reliance on delta water.

We strongly oppose any new gates, dams, or other obstructions in the Delta waterways . Projects such as 2-Gate Fish Protection Project violate the Rivers & Harbors Act.

USBR must maintain water quality standards and commit that any operational changes will not compromise the health and safety of the Delta water users. Quite simply, taking any more water south through the CVP is a bad idea.

Sincerely,
Suzanne Womack

Harrison, Katrina <kharrison@usbr.gov>

RE: to bureau of reclamation re maximizing water exports from the San Francisco Bay and Delta

Swanee Edwards <swanee@garlic.com> Thu, Feb 1, 2018 at 2:41 PM
To: agroecology@aol.com
Cc: kharrison@usbr.gov

Ms. Harrison,

I completely agree with the comment below! I think another consideration to think about before exporting any additional water to the Central Valley and urban/suburban Los Angeles, is the fact that during the most extreme time of drought a few years ago, the farmers and residents saved the least amount of water usage compared to what we conserved in Northern California and the Bay Area. In my small town of Morgan Hill, we saved, consistently in the range of 30 – 35 % of our water usage over a typical year in non drought seasons. The Southern region of California and the Greater Los Angeles area did not come close to those numbers. We should NOT consider sending additional water to these areas without having them demonstrate that they can conserve the water they have at levels of at least 25-30%.

Ever Onward,

Swanee Edwards

Morgan Hill, CA 95037

From: agroecology@aol.com [mailto:agroecology@aol.com]
Sent: Wednesday, January 31, 2018 4:48 PM
To: kharrison@usbr.gov
Subject: to bureau of reclamation re maximizing water exports from the San Francisco Bay and Delta

Submit comments on the EIS by February 1, 2018.

To: Katrina Harrison, Project Manager, Bureau of Reclamation

Efforts to maximize water exports from Bay/Delta ecosystems using megatunnel(s) are misguided on environmental and financial grounds. The water supply is finite. Insatiable demands on this finite resource continue without end. Corporate export agriculture in the Central Valley and urban/suburban Los Angeles have been demanding more and more water for decades. Please curtail additional water exports from the Bay/Delta to preserve the Bay/Delta's health and to protect overburdened taxpayers.

Sincerely Les Kishler Santa Clara County

Harrison, Katrina <kharrison@usbr.gov>

CVP operations

Tim Simonich <simcotfarms@yahoo.com> Thu, Feb 1, 2018 at 3:25 PM
To: kharrison@usbr.gov

Katrina Harrison, Project Manager
United States Bureau of Reclamation, Bay-Delta Office
801 I Street, Suite 140
Sacramento, CA 95814-2439

Dear: Ms. Harrison

I am writing in response to the Bureau's request for public comment about the operation of the Central Valley Project. The issue is not people over fish or visa-versa. Sound science is absolutely important, and sound science will not come from bureaucrats, agenda-driven environmental groups, lawyers, fellows, or distinguished professors. Real science with accurate data and truthful information should be regarded with utmost importance from the most qualified personnel in America. Any fraudulent activity with data collection or information should be prosecuted to the full extent of the law. In the same regard, predation, introduced species causing sterility, waste-water dumping, and possible excessive releases of water from dams must be considered in declining fish population numbers. This information should be used, confronted, and considered in the future operation of the CVP and SWP.

Environmental groups based in the Bay Area are neglectful, inconsistent, and contradictory in their relentless and successful attempt to send more water to the ocean. This decades-long practice has wasted millions upon millions of acre-feet of water, but it is not water from the Bay Area being sacrificed. Water delivered to the Bay Area from Hetch-Hetchy has been secure, and is never at risk in the same manner as the rest of the population in California.

On an annual average, 25 million acre-feet of water inflows to the Delta. Seventy-six percent of this water goes to the ocean. This percentage greatly increases during wet years when California should be storing for drier periods. Beneficial use of water should be viewed with a common-sense approach. Water is a necessity for all living things. Living things should be defined as a current population, current economies, and current ecosystems. The criminal act of sending millions of acre-feet of water to the ocean on an annual basis in order to restore an ecosystem that is no longer present, must stop. The Sacramento-San Joaquin Bay Delta plays a vital role for millions of people and millions of acres of farmland. Secured delivery of surface supplies of water to South of Delta Agriculture Contractors is not only important to the economy and future of California, but to the entire nation. Hundreds of crops grow in the Central Valley which feed this country, and a secure supply of surface water as contracted, is in fact a matter of national security.

The State government of California and its bureaucratic machine have only one answer under the current leadership. That answer is to manipulate, mismanage, and misinterpret, both law and intended purposes of the infrastructure in California. It is painfully obvious decisions are made with total disregard to the economy and the future of many lives within the Central Valley, most notably anyone south of the Delta. South of Delta storage should be a priority in order to secure a home-grown food source for the United States. While the State of California uses its Prop.1 money for water recycling and bottled water, the federal government should be concerned with real infrastructure to secure this nation. Projects such as the raising of Shasta Dam, expansion of the San Luis Reservoir, expansion of the Los Vaqueros Reservoir, Temperance Flat Dam, and Sites Reservoir must be the focus to protect our nation's breadbasket.

The Endangered Species Act, and all listings threatened or otherwise within the Delta and rivers it drains, should be reviewed. Updates and amendments with factual information should consider harm or hardships which burden people, industry, and economies, and place them as a priority. Policy and law should leave no room for assumptions, and any action taken which may effect delivery of water should be supported by hard, factual data. Infrastructure should be operated as such and pumping numbers prior to 1992 should be used as a guide.

The ability to block deliveries from Shasta because of water temperature in the Sacramento River, negates the original purpose of Shasta's construction. The USBR should not allow any action by the California SWRCB to impede deliveries from Shasta to the CVP. Biological Opinions which affect the delivery of water should be carefully reviewed, updated, or reformed to address our current ecosystem and its inhabitants. Bi Ops and other laws and policies such as the CVPIA are changing our ability to feed our nation. SGMA will contribute to this emergency with intrusive attacks on property rights. The San Joaquin River Settlement is likely to result in the retirement of over 90,000 acres within Friant Division alone

while hundreds of thousands of acres are at risk and or currently being retired throughout the west-side of the valley.

Ecosystems change, and our laws and policies should change concurrently to thwart the dangerous practice of wasting resources. CVP Contractors should be protected by the federal government. Contracts are for the delivery of surface water, and the USBR and all related federal agencies should restore contractual agreements to its customers while disallowing the State of California to effect those deliveries. Further, water used in the production of food, fiber, or dairy, should be a top priority second only to health and safety. This should be the case for both CVP and SWP surface deliveries to agriculture, and should absolutely be viewed and regarded as a national security issue by any federal administration. Environmental use of water should be regarded as a user of water in the same fashion as Agriculture, and Municipal and Industrial users. Environmental water should be metered and responsible agencies held accountable.

One fact we all know is that more environmental law obtained through politics or lawsuits, has resulted in continued decline of certain fish species. Following these procedures would return well over 2.5 million acre-feet of water to its rightful and beneficial users. The theft of this water has ruined local economies, damaged underground aquifers, damaged species and habitat, greatly increased unemployment, and put Americans at risk.
We waste millions of acre-feet of water in hopes of restoring species. In so doing, we are destroying industries, economies, towns, and the lives of people. It is time to restore the future of our country.

Sincerely,
Timothy A. Simonich
16596 Avenue 184
Strathmore, CA 93267
559-569-2833

RECEIVED
FEB 1 2018

1/28/2018
Katrina Harrison

Bureau of Reclamation

Dear Ms. Harrison

I am writing to comment on the proposal to maximize water deliveries to users at the southern end of the CVP. I think that instead of trying to get more water there, they should conserve what they are getting now as every year there are thousands of acres planted in new trees instead of other less water intensive crops. Also these unsustainable farming methods have resulted in draining the aquifer to the point that the ground is sinking many feet in certain areas and by sending more water down there would be supporting this waste.

The last five years of drought has certainly reduced the amount of water deliveries but it seems to me that the users of CVP water prefer to blame water left in river systems for environmental reasons as the problem rather than drought. At this time the amount of water taken from the San Joaquin Delta and shipped south is already way more than it should be as evidenced by the demise of species and the invasion of salt water in the Delta. Delta Smelt are almost extinct and the King Salmon fishery is on life support. Juvenile Salmon have to be trucked to the ocean to survive and there isn't enough flow in the rivers to guide the adults back to their natal stream to spawn.

Increasing flows in the CVP benefits water user groups and agri-business while threatening the livelihood of Commercial Fishermen, Fishing Guides, Boaters, Resort operators, Waterfowl enthusiasts and anyone that enjoys or farms in the San Joaquin Delta. Other than having unlimited funds and political connections what makes one group of users better than the other?

If the Bureau of Reclamation wants to improve the water distribution system in California it should partner with the State Water Resources Control Board and study how much water is needed in each river watershed to maintain the species native to it and release that percentage in a manner which replicates the natural flow that they require at the different times of the season. People have to get over the notion that water running through the Delta out to sea is wasted water, it is the lifeblood of the estuary. I live in the Delta and have personally seen the changes the CVP has brought to it, nothing good, as the fish have declined, the water is more polluted, the salt intrusion has increased and there is much more algae and invasive weeds in the system, all caused by insufficient flows. Maximizing water exports will only make these problems worse.

Sincerely, Victor Rosasco

1708 Woodsbro Rd.

Stockton, Ca. 95206

Victor Rosasco

RECLAMATION
Managing Water in the West

U.S. Department of the Interior
Bureau of Reclamation

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Comment Card for

EIS for the Revisions to the Coordinated ~~Long-Term~~ Operation of the Central Valley ~~Project and State Water~~ Project and Related Facilities

Thank you for your interest in providing information to consider for the Environmental Impact Statement for the Revisions to the Coordinated Long-term Operation of the Central Valley Project and State Water Project and Related Facilities

Name Virginia Phelps Phone Number 5305474903 Email edna@frontiernet.net
Organization Represented ———
Address 21778 Belmont Dr
City Palo Cedro State CA Zip 96073
Public Comment Will the revisions assure no more over-allocations? Why was ACID allowed to sell water while Clear Creek Community Service District & Tehama Colusa Canal were cut? How will the SF Bay ecosystem be supported with all the potential water sales - Bellibaka Club, McConnell Foundation, proposed Sites Reservoir.

How did you hear about this meeting? (Please check one)
☐ Newspaper Ad ☐ Reclamation Website ☑ Social Media ☐ Email Announcement ☐ Other: _____

Please leave this card in a drop box at the public scoping meeting or add postage and place the stapled, self-addressed mailer in any U.S. mailbox. Written comments will be accepted until close of business, Thursday, February 1, 2018.

Katrina Harrison
Bureau of Reclamation, Bay Delta Office
801 I Street, Suite 140
Sacramento, CA 95814-2536

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FEB 1 2018

Katrina Harrison
Bureau of Reclamation, Bay Delta Office
801 I Street, Suite 140
Sacramento, CA 95814-2536

4-253640

Revisions to the Coordinated Long-term Operation of the Central Valley Project and State Water Project and Related Facilities

RECLAMATION
Managing Water in the West

U.S. Department of the Interior
Bureau of Reclamation

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FEB 1 2018

Comment Card for

EIS for the Revisions to the Coordinated Long-Term Operation of the Central Valley Project and State Water Project and Related Facilities

Thank you for your interest in providing information to consider for the Environmental Impact Statement for the Revisions to the Coordinated Long-term Operation of the Central Valley Project and State Water Project and Related Facilities

Name Wilma Kirk **Phone Number** 530-533-3151 **Email** sufijas@gmail.com
Organization Represented resident
Address 2312 Oregon Gulch Rd
City Oroville **State** CA **Zip** 95965
Public Comment

Are we going to protect the right of people collecting/using rainwater?
How do we protect water for residents vs use by companies/businesses that do not contribute much to California in general vs a few.
Improve the ability of the dirt to hold water vs have it run off/dry off.
Decrease water contamination.
It is CA govt responsibility to supply clean water for all residents first. Before private/commercial enterprise.

How did you hear about this meeting? (Please check one)
☐ Newspaper Ad ☐ Reclamation Website ☐ Social Media ☐ Email Announcement ☒ Other: note on board at store

Please leave this card in a drop box at the public scoping meeting or add postage and place the stapled, self-addressed mailer in any U.S. mailbox. Written comments will be accepted until close of business, Thursday, February 1, 2018.

Prevent desertification? Owen Valley
Work towards not using water faster than nature provides. (Dig deeper) will not help
Think about snow pack/loss all the time).

The land cleans the water - filters it.
Water run off - clear cutting, dead soil, etc.

U.S. Department of the Interior
Bureau of Reclamation

Agua Alliance - Barbara
Sustainable Water Plan for CA.
Butte Yuba Sutter Water Project/Coalition - Quality
69% voted more water storage.

Revisions to the Coordinated Long-term Operation of the Central Valley Project and State Water Project and Related Facilities

Katrina Harrison
Bureau of Reclamation, Bay Delta Office
801 I Street, Suite 140
Sacramento, CA 95814-2536

Place Postage Here

Katrina Harrison
Bureau of Reclamation, Bay Delta Office
801 I Street, Suite 140
Sacramento, CA 95814-2536

To: Bureau of Reclamation
c/o Katrina Harrison

Jan 28, 2018

Re: Scoping Meeting for Revisions to Water Project, Chico Meeting.

Responsibility of government.

The number one purpose of the California government is to take care of the needs of its residents. This includes health in the form of clean drinking water and a healthy environment. These needs are not to be placed below the desires of business in the never ending quest for profit, much of will not help California at all.

Deeper wells and aquifer use are indicators of desertification.

We obviously need to be practical and have to work with what we are given. Deeper wells and sucking aquifers is temporary relief only and should be used as a measure of success or failure of water management practices only. The deserts happening in Sudan and Owen's Valley provide education as to the end result of unchecked bad practices.

Give water real value.

The value of water is underrated as we have become accustomed to its constant availability. Price seems to be one of the few things people understand when addressing the need for less waste and better efficiency. Examples are sprayers and flood irrigation. If carbon trading works, how about water trading.

Healthy soil holds water. (super easy water storage)

Less obvious but likely of more value is the ability of the soil to hold the water. Those who study soil health or practice permaculture have already demonstrated that healthy balanced soil can hold moisture much longer than land using pesticides, herbicides and fertilizers. The unbalanced soil then leads to molding and less nutritious plants.

We also need to address toxic runoff from ag or industry. If you

Return used water clean.

use and return water to the system, it needs to come back clean. The long term health affects will drain California's healthcare system and decrease an effective workforce. It's just practical.

Deep roots move water in soil.

Trees and other deep rooted plants also return water to the soil or help draw it up depending on the season. This also decreases soil erosion from water and wind.

Fracking just dumb.

We also need to address fracking. Unless the industry can prove its safety (with tests paid for by the opposition), it is just not practical. Earthquakes and water contamination are just not to be trifled with in California.

Returning deserts back into landscapes with water using rainfall.

Rainwater and greywater use should be encouraged. Do not waste those precious resources. In Sepp Holzer's book Desert or Paradise, you can learn how to restore landscapes using water management. Sepp has helped return large tracts of land (as in Spain and Portugal) that was heading to desert back into lakes and orchards through effective rainwater management. We need to change the culture of how "things are done" before we starve ourselves with deserts.

"the tunnels" Yikes.

Finally, we come to "the tunnels!" One man mentioned Standing Rock but I believe this will be bigger with millions in resistance. This would be the straw. I moved here in 1995 and have ~~watched~~ listened to the north against the south lawmakers who don't care. There's talk of splitting California and there's the State of Jefferson. It would not be hard to unite the forces with the common goal of "Protect Our Water." It would be unwise to underestimate the degree of unrest just under the surface. Need I say Trump, for example.

Thank you very much for your time.

Wilma Kirk.

Katrina,

Thank you for your efforts on this difficult issue.

Sincerely,
Wilma Kirk

Harrison, Katrina <kharrison@usbr.gov>

Central Valley Project

Jonah Platt <jmp1307@humboldt.edu> Fri, Feb 2, 2018 at 4:03 PM
To: kharrison@usbr.gov

Hello, I apolagize for giving this feedback a day past the due date for comments. I'm providing it anyways with the hope that it will be considered for the report.

Thank you,

Jonah Platt
Team Lead, Good Food Now Work Group
(707) 267-0995

I'm afraid that my comment isn't very bright or light hearted. Instead I'm going to remind whoever is listening that the people of the North West are opposed to any further water leaving our land. We recognize the atrocities that have occurred on these lands through genocide and forced assimilation among the indigenous people. That from that point on our culture has been destroying and abusing the Earth. I see the potential direction of this plan as a continuation of those harms. And the joke is on us.
The traumatic truth is that when the Earth is under immense pressure and it's resources are being consumed faster than it can restore itself, then the Earth fixes the problem. Just like how our bodies fight viruses and sickness, the Earth will also destroy human civilizations if it must. It sounds almost like I think the Earth is a living being, and I do, but that's besides the point.
One can look at the research of Professor Sing Chew at Humboldt State University, in his book of World Ecological Degradation to see the research he has conducted that shows evidence of past civilizations being nearly wiped out following the intensive exploitative of the environment.
If we choose to learn from what history has to teach us, we will allow the Earth to exist without being controlled. We will allow rivers to run, without dumping toxins into them, we won't dam them or should I say "damn" them, we won't build tunnels to ship water into desserts, we wouldn't privatize this natural substance as a commodity, but it would be free for the animals and people to consume.
I'm highly concerned about the actions that may be taken by people like you. And I have a warning for people like you. That either you put us on the track for ecological wellness or your plans in Northern California will be challenged every step, people like me will take over positions of power as policy makers and change the way we've been doing things, and ultimately I believe that even if you are ignorant to the real war that is going on here, you are still responsible for your actions and will be punished by your own means.

Harrison, Katrina <kharrison@usbr.gov>

Comments on the NOI to Prepare an EIS

Lyn Hall <mrscoldduck@sbcglobal.net> Fri, Feb 2, 2018 at 5:06 PM
To: kharrison@usbr.gov

Please do not send more water from the delta endangering wildlife and fisheries. Linda hall Discovery Bay, Ca
Thank you Linda hall
Sent from Mrs Cold Duck

Water plan

Meg Simmons Stofsky <mstofsky87@gmail.com> Fri, Feb 2, 2018 at 3:59 PM
To: kharrison@usbr.gov

Please stop planning to take water from Northern river to solve Central Valley water for farming problems. The rivers you want fo maximize taking from are already unhealthy due to damming and its effects. The current state of rivers seriously impacts Native way of life and agreements. Farmers have to begin to act like they have to solve thwie own problems and not look to tribes for relief!
Sincerely,
Margaret Stofsky
Eureka, CA 95503

January 25, 2018

TO: Katrina Harrison, Project Manager
Bureau of Reclamation, Bay-Delta Office
801 "I" Street, Suite 140
Sacramento, CA 95814-2536
Email: kharrison@usbr.gov

FROM: William A. Koch, PhD
A citizen of Trinity County, CA for 17 years
PO Box 793
Lewiston, CA 96052
Email: pepsikoch2013@gmail.com

NOTE: When you receive this letter please respond of your receipt of same

Dear Ms. Harrison,

I'm of the understanding that the Bureau of Reclamation [BOR] has announced it will conduct an "…environmental analysis of potential modification to the operation of the Central Valley Project, in coordination with California's State Water Project [CVP], to maximize water deliveries and optimize marketable power generation. Trinity and Lewiston lakes are part of the CVP."

I apologize for possibly missing the return date of my letter. I have had medical issues of late. I would appreciate your adding my comments.

First, Trinity is the *County of Origin* for ALL drainage water into the Trinity Lake.

Second, please provide a copy of ALL documents giving authority that a portion of water can be diverted.

Third, ALL diverted water from Trinity Lake should be agreed to by Trinity County residents.

Fourth, if agreed, then Trinity County should be reimbursed for the diverted water from Trinity Lake.

Please alert me of the time and place of ANY meeting(s) that may occur regarding the Trinity Lake diverted water.

Thank you very much,

William A. Koch, Ph.D.—Lewiston, CA

January 25, 2018

TO: Katrina Harrison, Project Manager
Bureau of Reclamation, Bay-Delta Office
801 "I" Street, Suite 140
Sacramento, CA 95814-2536
Email: kharrison@usbr.gov

FROM: William A. Koch, PhD
A citizen of Trinity County, CA for 17 years
PO Box 793
Lewiston, CA 96052
Email: pepsikoch2013@gmail.com

NOTE: When you receive this letter please respond of your receipt of same

Dear Ms. Harrison,

I'm of the understanding that the Bureau of Reclamation [BOR] has announced it will conduct an "…environmental analysis of potential modification to the operation of the Central Valley Project, in coordination with California's State Water Project [CVP], to maximize water deliveries and optimize marketable power generation. Trinity and Lewiston lakes are part of the CVP."

I apologize for possibly missing the return date of my letter. I have had medical issues of late. I would appreciate your adding my comments.

First, Trinity is the *County of Origin* for ALL drainage water into the Trinity Lake.

Second, please provide a copy of ALL documents giving authority that a portion of water can be diverted.

Third, ALL diverted water from Trinity Lake should be agreed to by Trinity County residents.

Fourth, if agreed, then Trinity County should be reimbursed for the diverted water from Trinity Lake.

Please alert me of the time and place of ANY meeting(s) that may occur regarding the Trinity Lake diverted water.

Thank you very much,

William A. Koch, Ph.D.—Lewiston, CA

Harrison, Katrina <kharrison@usbr.gov>

CVP and State Water Project

Lauretta Laura Aldridge <laldridge39999@gmail.com> Wed, Feb 7, 2018 at 7:48 AM
To: kharrison@usbr.gov

Ms. Harrison,

Though the February 1, 2018 deadline has passed for comments regarding revisions to the Coordinated Long-term operation of the CVP and State Water Project, here are my comments.

No, to the twin tunnel project. I support the WEST Act put forward by Jerry McNerney.

Yes, to more habitat restoration and ecosystem improvement projects as land becomes available--no eminent domain, please. Inform and encourage property owners of the benefits rather than force compliance.

Yes to reducing the impacts on listed species to give them a chance at recovering.

Sincerely,
Lauretta Aldridge
PO Box 1448/ 3043 Mills Dr
Brentwood, CA 94513
510/304-7552

U.S. Bureau of Reclamation

Mar. 5, 2018

Delta Water Tunnels

An ecological/economical disaster plan

2018 MAR -9 PM 4:04

Years ago When I learned of Governor Brown's plan to divert Sacramento River water southward via two large pipelines, one 33 feet in diameter, the other 37 feet in diameter, 150 feet below the river bottom and 35 miles long, I was filled with dread and disbelief. The future of the Sacramento-San Joaquin Delta and California looks grim if this plan is implemented. The water, fish, birdlife, vegetation and people will be negatively impacted in a big way. This water diversion plan would sell out local Delta habitat for big money interests in central and southern California. Our state will be on its way to ruin if these pipelines are laid. We already tap too much water from the Delta into two large existing canals filled to the brim flowing to central and southern California locations. Salt water intrusion has been a big problem for the Delta for many years due to the current rate of water taken from the Delta and pumped into these two canals. The quality of the water in the Delta has already been degraded. If the water diversion tunnels are built, the amount of fresh water running down the Delta would be a fraction of its current flow resulting in less water flowing and lower water quality. Instead of more water diversion we need

more water regulation. We all need to use water more conservatively in our homes, yards, gardens, farms, and businesses, etc. in every way we can think of. Water diversion tunnels will encourage overuse and waste of this precious resource.

The cost of building and maintaining water diversion tunnels would be an enormous burden falling on the backs of all Californians now and for generations to come. Whatever construction estimates is agreed upon will only be a small fraction of the actual cost we pay. The potential for devastating environmental damage during the course of construction and after completion would be a high risk. The Sacramento-San Joaquin Delta ecosystem and all living components within it would be negatively compromised. The Sacramento River Diversion Tunnel is a bad idea economically and environmentally for everyone.

Sincerely

John Minnehan
541 S. Rose Street
Lodi, CA 95240
~~209-368-3164~~ 781 301-1802
byjohnalden@gmail.com

P.S. The Sacramento/San Joaquin River is the life blood and jewel of California in its current, natural state. Please do not allow it to be destroyed with tunnels. Preserve, maintain, and regulate this precious waterway in its current state.

Harrison, Katrina <kharrison@usbr.gov>

USBR's 12-29-17 Notice of Intent to increase pumping from the Sacramento River Delta

Alex Michael <alex_michael@fastmail.com> Wed, Jan 10, 2018 at 2:18 PM
To: kharrison@usbr.gov

Dear Ms Harrison,

I am writing to express my opposition to USBR's proposed pumping increase. Salmon in the river are already close to extinction due to the diversion of the river's natural flows over a period of decades. As a native Californian I am deeply distressed to see the Delta in its present state, so diminished from the size and vitality I remember from my youth. I urge USBR to reconsider this ill-conceived plan and instead do the right thing for California and our natural heritage.

Sincerely
Alex Michael
12680 Brookglen Court
Saratoga CA 95070
alex_michael@fastmail.com
408-218-3308

Harrison, Katrina <kharrison@usbr.gov>

Comment: Delta water environmental studies NOI, CA Water agencies, USBR

LJ Laurent <ljlaurent@att.net> Wed, Jan 10, 2018 at 8:36 AM
Reply-To: LJ Laurent <ljlaurent@att.net>
To: "kharrison@usbr.gov" <kharrison@usbr.gov>, "Karen.Enstrom@water.ca.gov" <Karen.Enstrom@water.ca.gov>, "bcnelson@usbr.gov" <bcnelson@usbr.gov>

To: USBR, CA Water Authorities
From: LJ Laurent
Jan 10, 2018

Re: State and federal environmental studies of Delta water

Current federal administration demonstrates no knowledge of how to protect environment & public water WOTUS.
CA Water Agencies have also stretched their credibility in operation of CA State Water Project.

In other words, it is imperative to use objective biological data, not political bents, nor social-media politicking. To protect our water supplies, we must use biological data as "canaries" in the coal mine(s). The handwriting is on the wall: **there are other parts of the country which can produce food -- but only a few California water sources and only a few periods of sufficient precipitation to provide survival water.**

Also it is time for the West to establish rain-water retention and detention ponds throughout the state. Oroville Dam teaches us dirt-dams up north are a bum decision for SoCal water supplies.

It was nearly impossible to find a clear data statement in your documents, in which Preservation of environment, flora, fauna, and fish were identified under several different scenarios.

I agree with the statement below:

water grab of Northern California and Delta water by Trump administration and San Joaquin Valley growers. comments due February 1, 2018. On December 29, the Bureau of Reclamation announced it will conduct an environmental analysis of potential modifications to the operation of the Central Valley Project (CVP), in coordination with California's State Water Project, to "maximize water deliveries" and "optimize marketable power generation."
Trump administration wants to increase water exports to agribusiness interests, San Joaquin Valley, when the Delta smelt are near extinction; winter and spring-run Chinook salmon, Central Valley steelhead, longfin smelt, green sturgeon and other fish species are struggling to survive after decades of massive water deliveries.

https://www.usbr.gov/mp/nepa/nepa_project_details.php?Project_ID=30484

Harrison, Katrina <kharrison@usbr.gov>

We need a meeting in Chico!

Mharia Ross-Walcott <mwalcott@bcoe.org> Wed, Jan 10, 2018 at 12:44 PM
To: "kharrison@usbr.gov" <kharrison@usbr.gov>

Hello Katrina,

I would like to see the USBR hold a public meeting in the Northern Sacramento Valley in Chico. We as the community members would like to share our concerns about how North State Salmon Water is being marketed at the expense of our environment and the life forms that it supports, which includes us! In my Middle School classes we have been working with the EEI unit called *Liquid Gold: California's Water*, looking at the sources and uses as well as the benefits and risks of transporting water from one place to another in our state.

Thank you so much for your consideration.

Mharia Ross-Walcott

Teacher/Educator

Hearthstone School

Oroville, CA

(530)532-5848 X162

mwalcott@bcoe.org

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Harrison, Katrina <kharrison@usbr.gov>

Meeting in Chico about water transfers

bsmith1236@aol.com <bsmith1236@aol.com> Thu, Jan 11, 2018 at 9:40 AM
To: kharrison@usbr.gov

USBR

I am concerned about water transfers and want a public meeting in Chico to address concerns.

Bruce Smith
1334 Arbutus Avenue
Chico, California

Harrison, Katrina <kharrison@usbr.gov>

Comments on the Scope of the EIS, Revisions to the Coordinated Long-Term Operations of the Central Valley Project and State Water Project and Related Facilities (FR NOI December 29, 2017)

Richard Morat <rjmorat@gmail.com> Thu, Jan 11, 2018 at 6:52 PM
To: Katrina Harrison <kharrison@usbr.gov>

January 11, 2018

Via email

Katrina Harrison, Project Manager

Bureau of Reclamation - Bay Delta Office

801 I Street, Suite 140

Sacramento, CA 95814-2425

Re Comments on the Scope of the EIS, Revisions to the Coordinated Long-Term Operations of the Central Valley Project and State Water Project and Related Facilities (FR NOI December 29, 2017)

Ms. Harrison:

The scope of the analysis and document must address:

1) Climate change and all the uncertainty that accompanies it in precipitation, snow pack, storage, atmospheric temperatures, and project operations;

2) Water temperature analysis and reliable and fishery-useful projections from the Shasta, Trinity and American River projects under with- and without-the-action alternatives;

3) Implementation of the San Joaquin River Salmon Restoration;

4) Water transfers, long term and temporary urgency change petitions;

5) All analysis must compare without-the-action conditions against with-the-action conditions on an absolute basis/metric (flow rates - CFS, storage volumes - elevations and acre-feet, temperatures of water released from reservoirs - degrees C or F), and the differences found is the basis for a statement of environmental impact. Comparing any environmental condition to a regulatory standard (e.g., meets or complies with some prescribed metric) is inappropriate and misleading;

6) Address any incremental and/or cumulative effects of all operational changes brought about directly or indirectly by the resulting action by any and all water project operators affected or influenced by a proposed change on the part of the CVP; and,

7) The geographic scope of the required analysis is the Central Valley watershed including the entire estuary and all water service areas.

The problem with insatiable demand for water is that the injury to aquatic resources increases to the extreme while the incremental water supply increases approach negligible. Great damage is incurred for negligible accomplishments. This has already occurred in the last few decades and has been especially damaging during drought conditions. The Pelagic Organism Decline, the current state of the ecosystem, the serious decline in all salmonids, but especially wild salmonids, and the virtual disappearance of delta smelt from the estuary attest to the damage to aquatic resources from past water project operations, of which the CVP has been a big contributor.

The complexity of environmental analysis with such an undertaking as is being proposed is extreme. The costs for robust and truthful analysis will be exorbitant. The results contested and subject to suit. The process in place and currently operating is indicating that increasing delivery of water from the surface flows of the Central Valley streams and estuary are exceeding capability. Increasing storage of flows truly surplus to the streams and estuary is possible but not economically feasible as the remaining storage sites are poorly suited, surface evaporation excessive relative to delivery capabilities, and the frequency of surplus flow availability almost non existent resulting in extreme costs and negligible yield resulting in unacceptable benefit to cost ratios. This economic situation is why essentially no new surface storage facilities have been built in the last several decades.

The only viable alternatives are desalinization and the fallowing of agricultural uses that don't make sense today.

When this analysis is all over it is only imaginable that this will be a costly and wasteful exercise already answered in history by several decades of similar attempts.

Sincerely,

Richard Morat

2821 Berkshire Way

Sacramento, CA 95864

rjmorat@gmail.com

Comment Card for

EIS for the Revisions to the Coordinated Long-Term Operation of the Central Valley Project and State Water Project and Related Facilities

Thank you for your interest in providing information to consider for the Environmental Impact Statement for the Revisions to the Coordinated Long-term Operation of the Central Valley Project and State Water Project and Related Facilities

Name Caroline Hill **Phone Number** 415 845 3855 **Email** carhill95@gmail.com
Organization Represented _____
Address 59 Granada Vista
City Novato **State** CA **Zip** 94947
Public Comment As a 8th generation californian I am ashamed and frightened by the intention to maximize pumping and power generation. These actions will increase water temperature (while climate change is doing the same), degrade water quality, and reduce flows. This would devestate already suffering endangered species, degrade prized recreation in the Delta and Northern CA, and cause salt water intrusion. The economic impact this would have would be devestating to Coastal and Northern Californian communities. Commercial fishing cannot continue without fish. Small farms cannot provide for the nation without access to their northern california water. Our Northern CA cities cannot exist while clean, fresh water is being pumped south to Big Agriculture. DO NOT increase, let alone maximize, pumping from the Sacramento

How did you hear about this meeting? (Please check one)
☐ **Newspaper Ad** ☐ **Reclamation Website** ☒ **Social Media** ☐ **Email Announcement** ☐ **Other:** _____

Please leave this card in a drop box at the public scoping meeting or add postage and place the stapled, self-addressed mailer in any U.S. mailbox. Written comments will be accepted until close of business, Thursday, February 1, 2018.

Comment Card for

EIS for the Revisions to the Coordinated Long-Term Operation of the Central Valley Project and State Water Project and Related Facilities

Thank you for your interest in providing information to consider for the Environmental Impact Statement for the Revisions to the Coordinated Long-term Operation of the Central Valley Project and State Water Project and Related Facilities

Name DJ VALA **Phone Number** 562-595-3096 **Email** djvala@gmail.com

Organization Represented _____

Address _____

City _____ **State** _____ **Zip** _____

Public Comment The CVP should ....

- Better water transfer between districts
- Better forecasting of water allocations
- Increase communication with Water users
- Small farmers need help from Reclamation to stay farming by providing relablibe water supply

How did you hear about this meeting? (Please check one)

☐ Newspaper Ad ☐ Reclamation Website ☐ Social Media ☐ Email Announcement ☐ Other: _____

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Thank you for your interest in providing information to consider for the Environmental Impact Statement for the Revisions to the Coordinated Long-term Operation of the Central Valley Project and State Water Project and Related Facilities

Name Anna M. Meehan **Phone Number** 530-521-2571 **Email** annameehan@gmail.com
Organization Represented AquAlliance · Friend of the Winnemum Wintu tribe
Address 1090 E. 8th St.
City Chico **State** CA **Zip** 95928
Public Comment We need to let the rivers & creeks flow to the ocean to restore natural habitats & to let the salmon swim back upstreams to their natural spawning homes.

DO NOT Raise the Shasta Dam. It would flood sacred ceremonial sites. The Dam itself flooded Winnemum Wintu homes/homeland. I'd prefer that the Dam is lowered/taken down so that the river can flow again & the salmon can come home. Also, Winnemum Wintu land (under the Lake) should be returned to Native people of the Winnemum Wintu tribe.
Thank you.

How did you hear about this meeting? (Please check one)
☐ Newspaper Ad ☐ Reclamation Website ☐ Social Media ☑ Email Announcement ☒ Other: "Upcoming Salmon Runs"

Please leave this card in a drop box at the public scoping meeting or add postage and place the stapled, self-addressed mailer in any U.S. mailbox. Written comments will be accepted until close of business, Thursday, February 1, 2018.

Comment Card for

EIS for the Revisions to the Coordinated Long-Term Operation of the Central Valley Project and State Water Project and Related Facilities

Thank you for your interest in providing information to consider for the Environmental Impact Statement for the Revisions to the Coordinated Long-term Operation of the Central Valley Project and State Water Project and Related Facilities

Name Susan Tchudi **Phone Number** 530-781-4122 **Email** susantchudi@gmail.com
Organization Represented citizen farmer
Address 10846 Nelson Bar Road
City Oroville **State** CA **Zip** 95965
Public Comment (1) We do not need more dams. (2) There needs to be huge attention to ground water subsidence. (3) Water should not be sent/sold south for crops to be grown in the desert ie almonds? (4) Water should not be over allocated. (5) Loss of fish & other habitat needs to be a high priority. (6) There need to be greater water restrictions of farmers & corporations. We need to recognize that there are huge stresses on our environment and everything is interconnected. We / you must have a larger vision —

How did you hear about this meeting? (Please check one)
☐ Newspaper Ad ☐ Reclamation Website ☐ Social Media ☑ Email Announcement ☐ Other: _____

Please leave this card in a drop box at the public scoping meeting or add postage and place the stapled, self-addressed mailer in any U.S. mailbox. Written comments will be accepted until close of business, Thursday, February 1, 2018.

You need to stand up to power for the greater good — It's not just about North State Water. We need to look at the whole system — and know how survival for the North State is connected to all survival. Your goal is not to get water to S. Cal. Your goal is to maintain the health of the state's ecosystem.

Comment Card for

EIS for the Revisions to the Coordinated Long-Term Operation of the Central Valley Project and State Water Project and Related Facilities

Thank you for your interest in providing information to consider for the Environmental Impact Statement for the Revisions to the Coordinated Long-term Operation of the Central Valley Project and State Water Project and Related Facilities

Name William Huber **Phone Number** 530 321-5579 **Email** wmscothuber@gmail.com
Organization Represented Altacal Audubon Society.
Address 2133 Floral Ave.
City Chico **State** Ca. **Zip** 95926
Public Comment

"Addressing the status of Endangered and threatened species" must include:
Creating a restoration plan that includes publicly vetted and agreed to benchmarks for the recovery of the species in question.

How did you hear about this meeting? (Please check one)
☐ Newspaper Ad ☐ Reclamation Website ☒ Social Media ☐ Email Announcement ☐ Other: _____

Please leave this card in a drop box at the public scoping meeting or add postage and place the stapled, self-addressed mailer in any U.S. mailbox. Written comments will be accepted until close of business, Thursday, February 1, 2018.

Comment Card for

EIS for the Revisions to the Coordinated Long-Term Operation of the Central Valley Project and State Water Project and Related Facilities

Thank you for your interest in providing information to consider for the Environmental Impact Statement for the Revisions to the Coordinated Long-term Operation of the Central Valley Project and State Water Project and Related Facilities

Name Emily Alma **Phone Number** 864-0714 **Email** earthstar6208@att.net
Organization Represented Friends of Cottonwood Creek Greenway
Address 7300 Estes Rd
City Chico **State** CA **Zip** 95928
Public Comment
gave statement to court recorder

How did you hear about this meeting? (Please check one)
☐ Newspaper Ad ☐ Reclamation Website ☐ Social Media ☒ Email Announcement ☐ Other: from Ag Alliance

Please leave this card in a drop box at the public scoping meeting or add postage and place the stapled, self-addressed mailer in any U.S. mailbox. Written comments will be accepted until close of business, Thursday, February 1, 2018.

Comment Card for

EIS for the Revisions to the Coordinated Long-Term Operation of the Central Valley Project and State Water Project and Related Facilities

Thank you for your interest in providing information to consider for the Environmental Impact Statement for the Revisions to the Coordinated Long-term Operation of the Central Valley Project and State Water Project and Related Facilities

Name Chris Nelson **Phone Number** 530.345-7590 **Email** chris4pax@gmail.com
Organization Represented Riparia Farm LLC
Address 2300 Estes Rd
City Chico **State** Ca **Zip** 95928
Public Comment

During the drought* both of our water wells which we depend on for home use & market crops (12 acres organic produce) became dangerously low. We are on the Tuscan Aquifer which has not been well categorized. At that time water transfers in Glenn Co a few miles away continued and put salmon at risk due to ↑ water temps. Those with water rights were double dipping selling water South + using gd water to farm. We want management to monitor + protect groundwater + to stop orchard use (that do not allow fallowing in drought years) in So. California. We do not want ↑ H2O transfer south. We do not want Sites, centered on raising of Shasta Dam. No State Ag matters as do Salmon fisheries + the sacred sites of the Winnemem Wintu people.

How did you hear about this meeting? (Please check one)
☐ Newspaper Ad ☐ Reclamation Website ☑ Social Media ☐ Email Announcement ☐ Other: _____

Please leave this card in a drop box at the public scoping meeting or add postage and place the stapled, self-addressed mailer in any U.S. mailbox. Written comments will be accepted until close of business, Thursday, February 1, 2018.

* global warming increases risk of drought.
↓ clear cutting, road bldg + development in the Sierra / Cascades will help water sequestration + controlling types of crop to those less water demanding would be a better use of water management.

Comment Card for

EIS for the Revisions to the Coordinated Long-Term Operation of the Central Valley Project and State Water Project and Related Facilities

Thank you for your interest in providing information to consider for the Environmental Impact Statement for the Revisions to the Coordinated Long-term Operation of the Central Valley Project and State Water Project and Related Facilities

Name Bruce Lomastl Phone Number 530-774-6534 Email bsmith1236@aol.com
Organization Represented Chico Resident
Address 1334 Arbutus Avenue
City Chico State Calif Zip 95926
Public Comment

Ignoring infrastructure like Oroville Dam will result in disastrous consequences

How did you hear about this meeting? (Please check one)
☐ Newspaper Ad ☐ Reclamation Website ☐ Social Media ☐ Email Announcement ☐ Other: Agriculture

Please leave this card in a drop box at the public scoping meeting or add postage and place the stapled, self-addressed mailer in any U.S. mailbox. Written comments will be accepted until close of business, Thursday, February 1, 2018.

Table Mountain Institute

Opportunity Bulletin

Volume I, Issue Number 38 | Butte County Edition | January 8, 1998

California Water - Politics vs. Technology

By: Robert E. Boyden

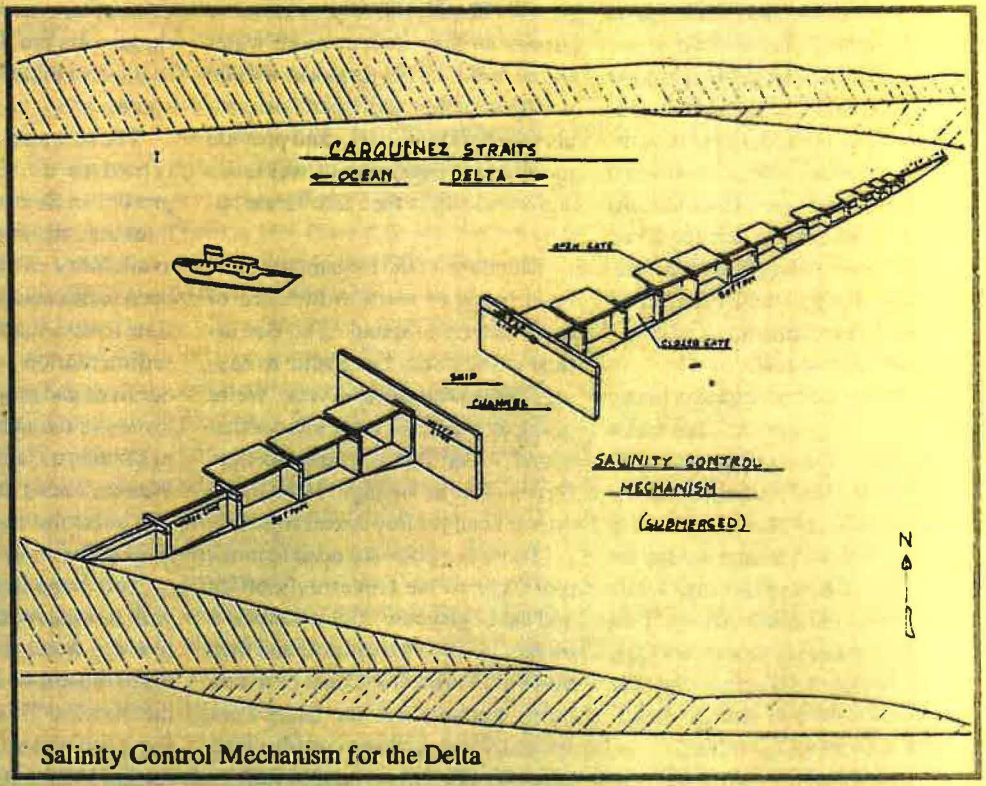
(Editor's Note: Mr. Boyden is a long-time Oroville resident. He received his Engineering education from the University of California, Berkeley. Mr. Boyden is retired after enjoying a twenty-seven year career as an engineer. His engineering experience includes private consulting and several years with the Army Corps of Engineers. We welcome his contribution and suggest our readers seriously consider these views.)

California Water Background

Mulholland still lives today. His legacy is the story of California water. He spent half a life-time buying land that controlled fresh water, drained two northern lakes, build a huge aqueduct, built reservoirs, a dam that broke and he pulled water from the Colorado River. Mr. Mulholland did all this to promote the biggest real estate development in the State of California which we now know as metropolitan Los Angeles and areas south. These areas are still growing.

The very early California population growth started around San Francisco and the Bay. After the Gold Rush in 1849, population centers started building in the southern part of the state. Soon, growth in the southern part of the state exceeded that in the northern part of the state, a pattern which has continued to the present. Agricultural development followed the population growth and, today, the southern California population, and its demand for water, far exceeds the north by a large factor.

The demand for water is now extending beyond the Los Angeles area. The great Imperial Valley, starting at Palm Springs and extending to San Diego, is being planted in all manner of crops. The Los Angeles Metropolitan Water District is re-selling northern water in that area. About 85% of California water is used for agricultural purposes. There is even a latent political pressure to divide California into two states that is primarily motivated by water demands.



Salinity Control Mechanism for the Delta

Contrary to the patterns of population growth, most of all California water comes from rivers and creeks in the north. Approximately 75% of all California water sources lie north of Sacramento. The major rivers include the McCloud, the Feather, the Yuba, the Bear, the American, the Consumnes, the Mokelumne, the Sacramento and the San Joaquin. These rivers and their tributaries all eventually flow into the Sacramento delta,

See WATER – page 12

WATER – from page 1

through the Carquinez Straits, into San Francisco Bay and into the Pacific through the Golden Gate.

In the 1930's, the state and federal governments created the Central Valley Project to deliver northern water to southern water users. In the 1960's, the State of California responded to ever-increasing demands for more water by building the State Water Project. Oroville Dam is the keystone reservoir for the State Water Project which includes the huge pumps at Tracy which pump water out of the Sacramento delta at Clifton Court forebay and into the California Aqueduct for shipment south.

The California Department of Water Resources manages the California Water Project which now includes several storage reservoirs, power generation facilities and hundreds of miles of canals.

Facts About Northern California Water

The Delta is below sea level from the Carquinez Straits to near Sacramento. Increasing quantities of fresh water must be released from northern reservoirs to push back the tidal inflow and the salt that comes with it. Science has not yet developed a practical method of removing salts from fresh water.

A study made by the Department of Water Resources in the 60's showed that from one-third to one-half of all the northern California fresh water that flowed into the Delta was wasted into the ocean for the sole purpose of holding back the tidal inflow.

The Development of the Peripheral Canal Proposal

During our drought periods (about every seven years) the inflow of salt water into the Delta increases. A key requirement for the State Water Project is to deliver water which is as fresh as possible to agricultural and residential users in the south. During low flows of fresh water through the Delta in dry years, this task became more difficult.

In order to meet the task, the Department of Water Resources came up with a plan called the Peripheral Canal. The plan originally consisted of a huge ditch about 400 feet wide by 50 feet deep and forty miles long. With the help of new pumps, it would lift fresh water from the Sacramento River at a small town called Hood which is approximately ten miles south of Sacramento. At this point on the Sacramento River, the salt content of the water is minimal. The Peripheral Canal would take large amounts of very fresh water around the Delta to even larger pumps at Tracy for delivery to the south. The construction of the Peripheral Canal was widely estimated at $2 - $4 billion dollars. A bond issue was put on the ballot for voter approval of the cost of construction. The public, here wiser than the water "experts" at DWR, voted down the bond issue.

Following its defeat at the ballot box, DWR approached the Legislature with alternatives. Their first effort reduced the size of the canal and labeled it a "Mini-Canal". With opposition from the Governor's office, this idea failed. Not to be deterred, DWR again modified the plan and renamed it the "New Hope Canal". This plan turned out to be the upper half of the Peripheral Canal and included some vague changes in the lower Delta. Again, this measure failed to secure Legislative approval in the face of opposition from the Governors office.

From a technical point of view, one has to wonder why DWR would push to develop these alternatives to the Peripheral Canal in total disregard of the fact that the upstream diversion of fresh water would remove fresh water needed to hold back tidal intrusions. If, under current circumstances, large quantities of fresh water were to be removed from the system at or near Hood, the whole of the Delta would be salinized unless more available fresh water was found and introduced into the system to replace the upstream withdrawals. Salinizing the Delta would destroy thousands of acres of farm land as well as pollute the water supply system for a number of communities upstream from the Delta pumping plant.

A Better Idea - A Salinity Control Mechanism

Following the defeat of the Peripheral Canal proposal by voters, a volunteer committee was formed to come up with a different approach to supply more fresh water south without damaging the Delta or northern California's essential water supplies. The committee's approach was premised upon saving now-wasted fresh water. The committee members, who had extensive experience in engineering and water management, had the additional support of and Army Corps Engineer who manages the Army Delta-Bay Model in Sausalito. This model is a 1000-1 scale model of the entire Delta and can accurately predict results of a variety of actions taken in the Delta.

The greatest enemy of fresh water in California is SALT. Salt originates from ocean intrusion and from agricultural run-off. There are only two actions that now prevent the salinization of the Delta which would render it useless for any delivery of water south.

The first action is the current method of relying on massive amounts of fresh water (1/3 to 1/2 of all California water) in the form of free flows or releases from northern reservoirs to hold back the tidal intrusion.

The second action is to make use of the constrictive action against tidal inflow provided by a narrow neck of water between the Bay and the Delta known as the Carquinez Straits. This neck of water averages 1/3 mile wide, is about 50 feet deep and is about 8 miles long. This narrow channel acts as a natural barrier to tidal intrusion.

In order to take advantage of this natural feature, the committee developed a Salinity Control Mechanism. This consists of about 20 nearly submerged gates across the Straits which are hinged near the top at water level and will operate like a check valve. The gates swing open when the tide goes out and close to form a sea barrier when the tide comes in. The movement of water through the Straits would provide all the force needed to move the gates from one position to another. A ship channel would be included in the Salinity Control Mechanism to enable shipping to continue in the Delta.

After numerous tide reversals, the Delta would be effectively desalinized. The relatively small amount of salt water that would flow through the mechanism would provide an appropriate climatizing zone for anadromous fish and the passage of fish through the facility would not be impaired. The benefit to be enjoyed would be the fact that the man-made barrier, combining forces with the natural barrier of the narrowness of the Strait, would replace the volume of fresh water formerly needed to restrict tidal inflows. The Salinity Control Mechanism would provide the additional benefit of blocking high tides which worsen flooding during heavy winter runoffs from the river systems.

Presentation of the Plan

This plan was presented to the combined water committees of the California Senate and the Assembly in 1982. The Chairman of the Combined Committees instructed the Department of Water Resources, in the person of Director David Kennedy who is still today the Director of this agency, to study the plan in depth.

Subsequent meetings were held with DWR staff and Director Kennedy. Two engineering firms were hired by DWR to independently study the plan. The engineering firms were CH2M Hill Co. and the Dutch Delft Laboratories in Seattle. Both firms issued reports concluding that the plan was feasible and showed merit. The engineering reports recommended that the Salinity Control Mechanism be installed on the Army Corps test model in Sausalito for further testing. The Hill Co. report estimated that the Salinity Control Mechanism would cost about one-fourth the proposed cost of the Peripheral Canal.

A fifteen-day test plan was developed for the Delta-Bay model at the Army Corps of Engineers site in Sausalito. A suitable location in the straits was selected and an approximate start date was scheduled. Shortly thereafter, the Director of DWR issued a letter canceling the entire modeling test. In his letter, Mr. Kennedy claimed that the mechanism would raise the water level in San Francisco Bay by four feet. No one who understands water flow, the Bay, or the ocean could make such a ridiculous statement. Tides find approximately a uniform level regardless of the locations of restrictions.

However, with DWR pulling the plug on even testing our model, the project died. Over the years, DWR continued to pursue one version or another of the Peripheral Canal without success and things essentially remained in stalemate.

The Peripheral Canal Again Becomes the Political Choice

Now in 1997, we have a political program called Cal-Fed. This group was started in the Governor's office, reportedly to provide an oversight of the Bay and the Delta to provide solutions for better water use. Although public meeting have been held around the state to present ideas and gather views, the only findings to be published are a group of ten so-called solutions which explain very little. The written description of one proposed solution almost exactly describes the old Peripheral Canal with another change of name. The new name for the Peripheral Canal is an "Isolated Conveyance". Of the ten initial proposed solutions, the list was reduced to three which includes the "Isolated Conveyance" solution.

The Cal-Fed program is the beneficiary of a proposition placed on the 1996 November ballot called the "Clean Water Act". (And who can be against "Clean Water"?) Under the Act, Cal-Fed received the right to issue bonds up to nearly $1 billion to provide various "solutions" for undefined projects involving water flows, fish benefits and wastelands. A billion dollars won't build the Peripheral Canal but it will go a long ways toward building political support.

Who is monitoring these expenditures?

It is interesting to note that all of the principles in this scenario are from Southern California. Our Governor is from San Diego. His key appointees, the Director of DWR and the Resources Secretary are all from Southern California.

The conclusion which may easily be drawn is that our State Water Agencies are determined to build the Peripheral Canal, under a disguised name, regardless of the damage such a project would cause the Delta and the north.

We Can Learn From Others

A similar example of saving fresh water by restricting the tide has, as recently as 1978, been successfully accomplished by our friends in Holland. By similar methods to our proposal for a Salinity Control Mechanism, the Dutch have not only created fresh water lakes from former salt-water estuaries but have also converted the entire Rhine River to fresh water. Before the Dutch acted in 1978, the Rhine had salt-water intrusions far into the river system as it extended into Europe.

The Dutch had to surmount far more difficult problems than we face here in California. The North Sea has a far greater rise and fall of the tides than we face in San Francisco Bay. In Holland, engineers had to deal with a tide range of 15 feet, three times the range of five feet that we find in San Francisco Bay. The stormy North Sea likewise presented challenges that do not exist in our Bay.

If technical problems were to be met with technical, rather than political, solutions, California would be a leader in this type of technology. As it is, we are not even learners.

The Choice

It behooves every Californian to defeat current efforts to send more fresh water south as are currently being proposed. The Salinity Control Mechanism is the only plan which has been proposed which would save fresh water for use instead of wasting it in an unnecessary battle with tidal intrusions. The Salinity Control Mechanism is, by far, a less expensive solution to the desire to make more water available for the dry areas of our state.

If the current proposals which include the Peripheral Canal are adopted, northern California can expect more assaults on local water resources. The next step is to come after local ground water sources in force. With a Peripheral Canal in place and operational, it will be essential to replace water shipped from Hood to Southern California with new and additional sources of Northern California water if the Delta is to survive.

We have a technical problem that has a technical solution. Choosing political solutions over proven technical choices is bad policy.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Achilles Aiken (aiken21@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 9:30 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Achilles Aiken
5439 Adele Ave
Whittier, CA 90601
aiken21@gmail.com
(562) 556-8822

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Adam Steckley (adamsteckley@msn.com) Sent You a Personal Message Tue, Jan 30, 2018 at 11:55 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Adam Steckley
4145 Portola Dr Apt 201
Santa Cruz, CA 95062
adamsteckley@msn.com
(305) 984-5074

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Aidan Humrich (aidanclare81@hotmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 7:59 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Aidan Humrich
304 Burton Ct
Rohnert Park, CA 94928
aidanclare81@hotmail.com
(415) 386-2801

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Aimee Wyatt (photochk1@aol.com) Sent You a Personal Message Tue, Jan 30, 2018 at 3:24 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Aimee Wyatt
105 S Lucia Ave # A
Redondo Beach, CA 90277
photochk1@aol.com
(562) 606-9914

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Alexa Mcmahan (irishlady86@yahoo.com) Sent You a Personal Message Tue, Jan 30, 2018 at 9:46 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Alexa Mcmahan
4892 Maui Cir
Huntington Beach, CA 92649
irishlady86@yahoo.com
(714) 382-5968

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Alice Kelly (alicemarykelly@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 7:28 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Alice Kelly
6493 Cooper St
Felton, CA 95018
alicemarykelly@gmail.com
(831) 335-0566

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Alice Lewis (lewisalice090@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 9:11 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Alice Lewis
58 Waford Rd
Bishop, CA 93514
lewisalice090@gmail.com
(760) 873-5288

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Alison Hill (alisonrhill@comcast.net) Sent You a Personal Message Tue, Jan 30, 2018 at 11:06 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Alison Hill
932 Hawthorn Drive
Lafayette, CA 94549
alisonrhill@comcast.net
(925) 283-6696

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Andrea Eitelman (eiteak@fusd.net) Sent You a Personal Message Tue, Jan 30, 2018 at 8:54 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Andrea Eitelman
9116 Encinitas Ave
Fontana, CA 92335
eiteak@fusd.net
(909) 822-5149

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Andrea Ferrari (andreaferraripugs@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 8:32 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Andrea Ferrari
4573 Westridge Dr
Oceanside, CA 92056
andreaferraripugs@gmail.com
(760) 828-2698

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Andy Hou (aidi.hou@gmail.com) Sent You a Personal Message <automail@knowwho.com> Tue, Jan 30, 2018 at 9:20 AM
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Andy Hou
15256 Carmelita Ave
Chino Hills, CA 91709
aidi.hou@gmail.com
(909) 228-8907

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Angel VanDerveer (angelvanderveer@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 6:04 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Angel VanDerveer
2320 N Sunrise Way
Palm Springs, CA 92262
angelvanderveer@gmail.com
(760) 322-8618

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Annamarta Dostourian (annarradha17@aol.com) Sent You a Personal Message Tue, Jan 30, 2018 at 12:07 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Annamarta Dostourian
1970 San Pablo Ave Apt 16
Berkeley, CA 94702
annarradha17@aol.com
(510) 910-7148

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Ann Bein (abein@ucla.edu) Sent You a Personal Message <automail@knowwho.com> Tue, Jan 30, 2018 at 1:34 PM
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Ann Bein
2216 Overland Ave
Los Angeles, CA 90064
abein@ucla.edu
(555) 555-5555

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Annette Cadosi Wilson (acadosi@earthlink.net) Sent You a Personal Message Tue, Jan 30, 2018 at 6:17 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

Leave the water where it belongs!

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, fewer exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Annette Cadosi Wilson
1421 W Dry Creek Rd
Healdsburg, CA 95448
acadosi@earthlink.net
(707) 481-1958

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Annette Raible (amraible@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 12:13 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Annette Raible
6163 Bodega Ave
Petaluma, CA 94952
amraible@gmail.com
(555) 555-5555

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Anne Veraldi (anneveraldi@hotmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 1:02 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Anne Veraldi
21 Lapidge St
San Francisco, CA 94110
anneveraldi@hotmail.com
(415) 553-6917

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Ann Gallon (ann@atginternet.com) Sent You a Personal Message Tue, Jan 30, 2018 at 12:40 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Ann Gallon
3340 Jenkins Rd
Bakersfield, CA 93314
ann@atginternet.com
(661) 203-2770

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Ann Rennacker (annxpress@live.com) Sent You a Personal Message Tue, Jan 30, 2018 at 11:00 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Ann Rennacker
31200 Sherwood Rd
Fort Bragg, CA 95437
annxpress@live.com
(707) 961-1420

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Arthur Allen (awmikeallen@yahoo.com) Sent You a Personal Message Tue, Jan 30, 2018 at 7:21 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Arthur Allen
340 Madrone Ave
Larkspur, CA 94939
awmikeallen@yahoo.com
(415) 927-1380

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Arthur Bierman (abierman@sfsu.edu) Sent You a Personal Message Tue, Jan 30, 2018 at 9:30 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Arthur Bierman
1936 Leavenworth St
San Francisco, CA 94133
abierman@sfsu.edu
(415) 673-6361

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Arthur Gregorian (raffi_g@yahoo.com) Sent You a Personal Message Tue, Jan 30, 2018 at 7:50 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Arthur Gregorian
3906 Linwood Ave
Oakland, CA 94602
raffi_g@yahoo.com
(510) 981-6117

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Ashley Lewis (muse.akl@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 3:58 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Ashley Lewis
150 Porteous Ave
Fairfax, CA 94930
muse.akl@gmail.com
(415) 370-5861

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Barry Weinzveg (bweinzveg@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 12:35 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Barry Weinzveg
4444 Roblar Rd
Petaluma, CA 94952
bweinzveg@gmail.com
(707) 795-2247

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Beverly Poncia (bmp1950@mchsi.com) Sent You a Personal Message Tue, Jan 30, 2018 at 8:19 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Beverly Poncia
PO Box 971
Lower Lake, CA 95457
bmp1950@mchsi.com
(707) 995-2047

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Bill Lawson (blawson8@verizon.net) Sent You a Personal Message Tue, Jan 30, 2018 at 8:20 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Bill Lawson
401 Ponderosa Trl
Calimesa, CA 92320
blawson8@verizon.net
(909) 795-4759

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Bita Edwards (greenbee79@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 10:01 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Bita Edwards
PO Box 122
Woodacre, CA 94973
greenbee79@gmail.com
(415) 236-8901

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Bonnie Strand (nelsdotter@sbcobal.net) Sent You a Personal Message Tue, Jan 30, 2018 at 9:45 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Bonnie Strand
1210 N Kenilworth Ave
Glendale, CA 91202
nelsdotter@sbcobal.net
(818) 247-6398

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Bo Svensson (bophoto@sonic.net) Sent You a Personal Message Tue, Jan 30, 2018 at 4:03 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.
Please leave a legacy that all the future generations of your family can really be proud of you for !!

Thank you for your consideration.

Sincerely,

Bo Svensson
63 Westgate Cir
Santa Rosa, CA 95401
bophoto@sonic.net
(707) 528-2485

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Brandon Gregg (bgggobears@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 12:32 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Brandon Gregg
1477 Floribunda Ave
Burlingame, CA 94010
bgggobears@gmail.com
(650) 344-3672

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Brenda Hattisburg (brendahattisburg@att.net) Sent You a Personal Message Tue, Jan 30, 2018 at 11:02 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Brenda Hattisburg
15335 Washington Ave Apt 102
San Leandro, CA 94579
brendahattisburg@att.net
(510) 219-9616

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Brenda Wallace (bren2699@netscape.net) Sent You a Personal Message Tue, Jan 30, 2018 at 8:49 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Brenda Wallace
452 Boynton Ave
Berkeley, CA 94707
bren2699@netscape.net
(510) 847-9940

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Brian Gray (bgraystar@sbcglobal.net) Sent You a Personal Message Tue, Jan 30, 2018 at 2:22 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Brian Gray
7776 Palmyra Dr
Fair Oaks, CA 95628
bgraystar@sbcglobal.net
(916) 849-9369

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Burnett Dougherty (hapster32@hotmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 7:40 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Burnett Dougherty
609 Sage Ct
Pacific Grove, CA 93950
hapster32@hotmail.com
(831) 644-9528

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Candace Johnson (fudgecandi@yahoo.com) Sent You a Personal Message Tue, Jan 30, 2018 at 12:39 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Candace Johnson
1001 E 45th Way
Long Beach, CA 90807
fudgecandi@yahoo.com
(562) 984-1257

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Cara Wahl (lavignetoo@comcast.net) Sent You a Personal Message Tue, Jan 30, 2018 at 12:11 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Cara Wahl
754 Azores Cir
Bay Point, CA 94565
lavignetoo@comcast.net
(925) 890-5148

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Carole Gonsalves (carolejg@mac.com) Sent You a Personal Message Tue, Jan 30, 2018 at 11:33 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Carole Gonsalves
1497 Los Rios Dr
San Jose, CA 95120
carolejg@mac.com
(408) 268-3432

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Carol Hyndman (countrycattery@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 6:21 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Carol Hyndman
14740 Orzalli Rd
Grass Valley, CA 95945
countrycattery@gmail.com
(530) 477-0693

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Caroline Takahashi (caroline.takahashi@sbcglobal.net) Sent You a Personal Message Tue, Jan 30, 2018 at 5:42 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Caroline Takahashi
926 Ruby St
Redwood City, CA 94061
caroline.takahashi@sbcglobal.net
(650) 364-5022

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Carolyn Seeman (nracms@aol.com) Sent You a Personal Message Tue, Jan 30, 2018 at 10:00 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Carolyn Seeman
11747 Otsego St
Valley Village, CA 91607
nracms@aol.com
(818) 766-4889

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Cary Frazee (cxfrazee@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 10:35 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Cary Frazee
499 Redmond Rd
Eureka, CA 95503
cxfrazee@gmail.com
(707) 443-0023

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Catherine Macan (catherinemacan707@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 8:46 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Catherine Macan
1812 16th St
Eureka, CA 95501
catherinemacan707@gmail.com
(707) 441-1292

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Charles Bailey, Jr. (zeldasgrampy@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 9:41 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Charles Bailey, Jr.
3 Cliffside Dr
Daly City, CA 94015
zeldasgrampy@gmail.com
(650) 757-1714

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Charles Heinrichs (cwheinrichs@hotmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 6:00 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Charles Heinrichs
2614 Minna Ave
Oakland, CA 94619
cwheinrichs@hotmail.com
(510) 363-0124

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Charles Hough (clhoughjr@yahoo.com) Sent You a Personal Message Tue, Jan 30, 2018 at 9:18 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Charles Hough
11866 Lotus Ave
Fountain Valley, CA 92708
clhoughjr@yahoo.com
(714) 277-5315

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Charles And Rita Rossmann (chas-mann@earthlink.net) Sent You a Personal Message Tue, Jan 30, 2018 at 10:09 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Charles And Rita Rossmann
916 Dyer Ln
Modesto, CA 95350
chas-mann@earthlink.net
(209) 527-4102

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Cheri Michalak (cherim2@cox.net) Sent You a Personal Message Tue, Jan 30, 2018 at 11:53 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Cheri Michalak
525 W El Norte Pkwy Spc 213
Escondido, CA 92026
cherim2@cox.net
(760) 735-8992

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Christian Colvin (cyrothendymion@yahoo.com) Sent You a Personal Message Tue, Jan 30, 2018 at 11:00 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Christian Colvin
199 Fremont St
San Francisco, CA 94105
cyrothendymion@yahoo.com
(510) 585-3517

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Christine Hayes (hayescb@hotmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 4:24 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Christine Hayes
1534 Fairwood Way
Upland, CA 91786
hayescb@hotmail.com
(909) 985-7807

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Christopher Barnickel (topperrx@hotmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 1:47 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Christopher Barnickel
1213 Laguna Ln
San Luis Obispo, CA 93405
topperrx@hotmail.com
(816) 547-0222

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Christopher Lish (lishchris@yahoo.com) Sent You a Personal Message Tue, Jan 30, 2018 at 6:43 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Christopher Lish
1004 Los Gamos Road Apt. D
San Rafael, CA 94903
lishchris@yahoo.com
(415) 785-8914

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Christopher Ware (cmdubb@yahoo.com) Sent You a Personal Message Tue, Jan 30, 2018 at 9:33 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Christopher Ware
45746 Bridgeport Dr
Fremont, CA 94539
cmdubb@yahoo.com
(510) 996-2324

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Chrysanthi Lawrence (chrysanthil@aol.com) Sent You a Personal Message Tue, Jan 30, 2018 at 5:35 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Chrysanthi Lawrence
2660 Mira Vista Dr
Richmond, CA 94805
chrysanthil@aol.com
(510) 232-3905

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Clark Crandall (clark_crandall@dot.ca.gov) Sent You a Personal Message Tue, Jan 30, 2018 at 6:35 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Clark Crandall
598 King Ave
Yuba City, CA 95991
clark_crandall@dot.ca.gov
(530) 713-3156

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Colleen Harrison (cpharr1988@sbcglobal.net) Sent You a Personal Message Tue, Jan 30, 2018 at 10:10 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Colleen Harrison
2264 Windward Ln
Rancho Cordova, CA 95670
cpharr1988@sbcglobal.net
(916) 631-9268

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Connie Day (one_sunny_day@hotmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 5:40 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Connie Day
1650 Maring Way
Sacramento, CA 95835
one_sunny_day@hotmail.com
(916) 743-2123

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Cooper Holland (alisonholland@cox.net) Sent You a Personal Message Tue, Jan 30, 2018 at 7:53 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Cooper Holland
4636 Adair St
San Diego, CA 92107
alisonholland@cox.net
(619) 818-1733

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Dagfinn Kvale (edkvalitet@comcast.net) Sent You a Personal Message Tue, Jan 30, 2018 at 8:02 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Dagfinn Kvale
15 Berkeley Ave
San Anselmo, CA 94960
edkvalitet@comcast.net
(415) 456-4076

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Dale Hillard (hillard@salinas.net) Sent You a Personal Message
<automail@knowwho.com>
To: kharrison@usbr.gov

Tue, Jan 30, 2018 at 8:53 AM

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Dale Hillard
830 River Road
Salinas, CA 93908
hillard@salinas.net
(831) 455-2404

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Dale Wright (dwramona@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 7:00 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Dale Wright
17134 Woodson View Ln
Ramona, CA 92065
dwramona@gmail.com
(619) 789-8535

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Daniel Dowdle (daniel_dowdle@hotmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 7:22 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Daniel Dowdle
3755 1/2 4th Ave
San Diego, CA 92103
daniel_dowdle@hotmail.com
(619) 291-0945

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Daniele Martarelli (lost0108@alice.it) Sent You a Personal Message Tue, Jan 30, 2018 at 6:10 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Daniele Martarelli
1236 W Sunset Blvd
Los Angeles, CA 90026
lost0108@alice.it
(245) 636-9478

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Dan Kittredge (dan.kittredge@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 4:23 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Dan Kittredge
7620 Eastridge Dr
La Mesa, CA 91941
dan.kittredge@gmail.com
(619) 825-9280

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Dave and Bonnie Etz (banddetz@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 8:06 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Dave and Bonnie Etz
3620 Patricks Point Dr
Trinidad, CA 95570
banddetz@gmail.com
(707) 601-1840

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

David Kaskowitz (dkasko@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 9:06 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

David Kaskowitz
306 Park St
San Francisco, CA 94110
dkasko@gmail.com
(415) 826-6105

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

David Osteraas (eosteraas@earthlink.net) Sent You a Personal Message Tue, Jan 30, 2018 at 8:40 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am totally opposed to any attempts to increase water exports from the San Francisco Bay Delta. Instead, we should support less exports to save the Delta and its species. Our salmon runs and the Delta Smelt are in extreme danger of disappearing.

We need to plan innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau needs to look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

David Osteraas
PO Box 1178
Gualala, CA 95445
eosteraas@earthlink.net
(707) 785-9633

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Debbie Mendelson (sodblitz@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 6:56 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Debbie Mendelson
145 Sheridan Way
Woodside, CA 94062
sodblitz@gmail.com
(650) 365-0731

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Deborah Childers (dachilders@csustan.edu) Sent You a Personal Message Tue, Jan 30, 2018 at 7:49 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Deborah Childers
1302 Theo Ave
Modesto, CA 95350
dachilders@csustan.edu
(209) 605-9945

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Denise Cugini (dcugini1@yahoo.com) Sent You a Personal Message Tue, Jan 30, 2018 at 9:15 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Denise Cugini
405 Lakeville Cir
Petaluma, CA 94954
dcugini1@yahoo.com
(707) 364-9152

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Dennis and Jan Ruby (todmruby@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 12:11 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Dennis and Jan Ruby
13260 Skyline Blvd
Woodside, CA 94062
todmruby@gmail.com
(650) 851-2111

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Dennis Lynch (7lynch@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 10:29 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Dennis Lynch
11891 Lake Blvd
Felton, CA 95018
7lynch@gmail.com
(831) 335-4682

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Diana Duncan (diana@styledetective.com) Sent You a Personal Message Tue, Jan 30, 2018 at 7:20 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Diana Duncan
828 10th St Apt 9
Santa Monica, CA 90403
diana@styledetective.com
(310) 395-0686

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Diana Hall (dianahall39@yahoo.com) Sent You a Personal Message Tue, Jan 30, 2018 at 11:33 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Diana Hall
812 Calderon Ave
Mountain View, CA 94041
dianahall39@yahoo.com
(650) 969-0748

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Diana Somps (dsomps@verizon.net) Sent You a Personal Message Tue, Jan 30, 2018 at 6:10 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Diana Somps
100 Iolanthus Ave
Novato, CA 94945
dsomps@verizon.net
(415) 893-9994

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Dianne Busse (diannebusse@hotmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 3:00 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Dianne Busse
2918 Ransford Avenue
PACIFIC gROVE, CA 93950
diannebusse@hotmail.com
(831) 649-8568

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Dina Bianco (dinabianco@hotmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 12:52 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Dina Bianco
121 7th Street
Los Angeles, CA 90014
dinabianco@hotmail.com
(818) 634-3480

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Dixie Coutant (digidix@yahoo.com) Sent You a Personal Message Tue, Jan 30, 2018 at 6:17 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Dixie Coutant
21181 Old Town Rd
Tehachapi, CA 93561
digidix@yahoo.com
(626) 355-4908

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Donna Carr, M.D. (donnacarrmd@aol.com) Sent You a Personal Message Tue, Jan 30, 2018 at 3:23 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Donna Carr, M.D.
1201 Sidonia St
Encinitas, CA 92024
donnacarrmd@aol.com
(760) 436-7836

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Donna Erie (derie@lawa.org) Sent You a Personal Message <automail@knowwho.com> Tue, Jan 30, 2018 at 6:27 AM
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Donna Erie
1321 E Grand Ave Unit D
El Segundo, CA 90245
derie@lawa.org
(310) 765-3457

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Doris Overmyer (deovermyer@mindspring.com) Sent You a Personal Message Tue, Jan 30, 2018 at 3:17 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Doris Overmyer
750 Appleberry Dr
San Rafael, CA 94903
deovermyer@mindspring.com
(415) 479-8918

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Douglas Dyakon (douglasdyakon@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 7:30 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Douglas Dyakon
1835 Sunset Plaza Dr
Los Angeles, CA 90069
douglasdyakon@gmail.com
(310) 555-1212

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Douglas Estes (dce005@yahoo.com) Sent You a Personal Message Tue, Jan 30, 2018 at 12:25 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Douglas Estes
629 Arguello Blvd Apt 303
San Francisco, CA 94118
dce005@yahoo.com
(415) 845-6018

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Eddie Bartley (noreen@naturetrip.com) Sent You a Personal Message Tue, Jan 30, 2018 at 2:56 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Eddie Bartley
493 Vermont St
San Francisco, CA 94107
noreen@naturetrip.com
(415) 252-1039

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Edward Sullivan (efsullyjr@aol.com) Sent You a Personal Message Tue, Jan 30, 2018 at 11:05 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Edward Sullivan
2448 Great Hwy Apt 14
San Francisco, CA 94116
efsullyjr@aol.com
(415) 665-1463

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Eleanor Lewis (eleanor_lewis@stanfordalumni.org) Sent You a Personal Message Tue, Jan 30, 2018 at 10:08 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

How can my children inherit the California they deserve if we do not take steps to protect it now? This is a moral imperative and must be given the highest priority during decision making.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Eleanor Lewis
141 24th Ave Apt 1
San Mateo, CA 94403
eleanor_lewis@stanfordalumni.org
(510) 209-7377

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Elise di Donato (elisedi@sbcglobal.net) Sent You a Personal Message Tue, Jan 30, 2018 at 11:22 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Elise di Donato
285 S 14th St
San Jose, CA 95112
elisedi@sbcglobal.net
(408) 967-7312

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Elizabeth Stocks (estocks@cox.net) Sent You a Personal Message Tue, Jan 30, 2018 at 9:55 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Elizabeth Stocks
31102 Via El Rosario
San Juan Capo, CA 92675
estocks@cox.net
(949) 493-9320

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Ellen Dollar (dddollar@yahoo.com) Sent You a Personal Message Tue, Jan 30, 2018 at 4:15 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Ellen Dollar
2357 Banderola Ct
San Luis Obispo, CA 93401
dddollar@yahoo.com
(805) 771-0118

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Ellen Frank (elljoe@earthlink.net) Sent You a Personal Message Tue, Jan 30, 2018 at 11:04 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I and my many friends and family are outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Ellen Frank
243 Holyoke St
San Francisco, CA 94134
elljoe@earthlink.net
(415) 999-9999

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Ellen Phillips (parrotfreak@att.net) Sent You a Personal Message Tue, Jan 30, 2018 at 6:15 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Ellen Phillips
2550 Dana St Apt 3C
Berkeley, CA 94704
parrotfreak@att.net
(707) 333-8318

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Erica Stanojevic (ericast@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 9:53 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Erica Stanojevic
611 Centennial St
Santa Cruz, CA 95060
ericast@gmail.com
(408) 202-6430

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Ernie Looney (earthling109@msn.com) Sent You a Personal Message Tue, Jan 30, 2018 at 9:06 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Ernie Looney
PO Box 800302
Santa Clarita, CA 91380
earthling109@msn.com
(818) 813-9980

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Ernie Walters (ernwalt@aol.com) Sent You a Personal Message
<automail@knowwho.com>
To: kharrison@usbr.gov

Tue, Jan 30, 2018 at 9:06 AM

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Ernie Walters
2437 Tartarian Way
Union City, CA 94587
ernwalt@aol.com
(510) 579-2851

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Estelle Delgado (ebthin@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 6:36 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Estelle Delgado
14123 Liberty Way
Victorville, CA 92392
ebthin@gmail.com
(408) 728-1258

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Ethel Ruymaker (ethelruymaker@yahoo.com) Sent You a Personal Message Tue, Jan 30, 2018 at 9:21 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Ethel Ruymaker
6385 Hillegass Ave
Oakland, CA 94618
ethelruymaker@yahoo.com
(510) 658-3912

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Eva Thomas (allanandeva@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 8:44 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Eva Thomas
100 Laughing Cow Rd
Woodside, CA 94062
allanandeva@gmail.com
(650) 851-8641

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Faith Herschler (fherschler@sbcglobal.net) Sent You a Personal Message Tue, Jan 30, 2018 at 3:48 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Faith Herschler
10347 W Briar Oaks Dr Apt D
Stanton, CA 90680
fherschler@sbcglobal.net
(714) 821-4067

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Ferdinand Brislawn (fplb@flash.net) Sent You a Personal Message Tue, Jan 30, 2018 at 3:18 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Ferdinand Brislawn
8 Fairview Ave
Piedmont, CA 94610
fplb@flash.net
(510) 658-6064

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Frances Larson (fran.m.larson@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 11:50 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Frances Larson
1060 Terra Nova Blvd 112A
Pacifica, CA 94044
fran.m.larson@gmail.com
(650) 355-5046

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Gabriella Madriles (bvbbridesmaidgaby@hotmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 10:38 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Gabriella Madriles
7302 S San Pedro St Apt 206
Los Angeles, CA 90003
bvbbridesmaidgaby@hotmail.com
(323) 386-1959

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Gail Bedinger (ghbedinger@yahoo.com) Sent You a Personal Message Tue, Jan 30, 2018 at 8:29 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Gail Bedinger
1175 Vintage Dr
Rio Vista, CA 94571
ghbedinger@yahoo.com
(707) 374-2718

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

George Lloyd (ridgeboreal@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 1:42 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

George Lloyd
4924 Jensen Hollow Rd
Placerville, CA 95667
ridgeboreal@gmail.com
(530) 621-4070

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Gilda Fusilier (gfusilier@comcast.net) Sent You a Personal Message Tue, Jan 30, 2018 at 1:12 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Gilda Fusilier
955 43rd Ave
Sacramento, CA 95831
gfusilier@comcast.net
(916) 393-1028

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Gloria Novak (novak.gloria@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 2:07 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Gloria Novak
18430 Round Mountain Ranch Rd
Nevada City, CA 95959
novak.gloria@gmail.com
(530) 478-9608

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Grania Lindberg (twoaboard@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 8:06 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Grania Lindberg
1515 Laurel St
Napa, CA 94559
twoaboard@gmail.com
(707) 480-0174

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Grant Weseman (vayzamon@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 10:02 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Grant Weseman
4657 Branciforte Dr
Santa Cruz, CA 95065
vayzamon@gmail.com
(831) 426-4277

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Heidi Bean (h.bean@att.net) Sent You a Personal Message <automail@knowwho.com> Tue, Jan 30, 2018 at 6:13 AM
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Heidi Bean
100 Scholz Plz Apt 110
Newport Beach, CA 92663
h.bean@att.net
(949) 642-5457

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Henry Morgen (hjmla@sbcglobal.net) Sent You a Personal Message Tue, Jan 30, 2018 at 8:53 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Henry Morgen
1156 S Sierra Bonita Ave
Los Angeles, CA 90019
hjmla@sbcglobal.net
(323) 246-6241

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Hollace Wood (hwood@g.ucla.edu) Sent You a Personal Message Tue, Jan 30, 2018 at 2:25 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Hollace Wood
7137 Shoup Ave Unit 26
West Hills, CA 91307
hwood@g.ucla.edu
(818) 884-3262

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Ian Turner (ian.turner019@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 8:41 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Ian Turner
955 43rd Avenue, #112
Sacramento, CA 95831
ian.turner019@gmail.com
(916) 393-1028

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Iris Edinger (iris.n.edinger@my.csun.edu) Sent You a Personal Message Tue, Jan 30, 2018 at 7:49 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Iris Edinger
5534 Pattilar Ave
Woodland Hills, CA 91367
iris.n.edinger@my.csun.edu
(818) 883-4723

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Isabelle Du Soleil (isabelledusoleil@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 8:47 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Isabelle Du Soleil
2001 Venice Blvd
Los Angeles, CA 90006
isabelledusoleil@gmail.com
(310) 390-5150

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

James Masi (masi.james@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 9:21 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

James Masi
300 Berry St Unit 602
San Francisco, CA 94158
masi.james@gmail.com
(201) 914-2890

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

James True (broc.27@hotmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 8:32 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

James True
5283 Manila Ave
Oakland, CA 94618
broc.27@hotmail.com
(510) 658-4449

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Jamie Chen (lamia_kuei@yahoo.com) Sent You a Personal Message Tue, Jan 30, 2018 at 2:33 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Jamie Chen
10655 Lemon Ave Apt 3002
Rancho Cucamonga, CA 91737
lamia_kuei@yahoo.com
(858) 382-4781

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Jan Contreras (jcontreras@venable.com) Sent You a Personal Message Tue, Jan 30, 2018 at 7:39 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Jan Contreras
17124 Willard St
Lake Balboa, CA 91406
jcontreras@venable.com
(818) 996-9620

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Jane Coursin (importancia1@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 9:11 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Jane Coursin
360 Winamar Ave
La Jolla, CA 92037
importancia1@gmail.com
(858) 459-1544

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Jane MacFarlane (jane.macfarlane@sierraclub.org) Sent You a Personal Message Tue, Jan 30, 2018 at 9:55 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Jane MacFarlane
3250 Wilshire Blvd Ste 1106
Los Angeles, CA 90010
jane.macfarlane@sierraclub.org
(213) 387-4287

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Jay Jones (jjones@laverne.edu) Sent You a Personal Message
<automail@knowwho.com>
To: kharrison@usbr.gov

Tue, Jan 30, 2018 at 10:44 PM

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Jay Jones
1130 E Arrow Hwy
Upland, CA 91786
jjones@laverne.edu
(909) 912-4650

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Jay Rutherdale (jayr@csus.edu) Sent You a Personal Message <automail@knowwho.com> Tue, Jan 30, 2018 at 9:22 AM
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Jay Rutherdale
9166 Firelight Way
Sacramento, CA 95826
jayr@csus.edu
(916) 254-7190

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Jeanette Meeker (meekerjs@att.net) Sent You a Personal Message Tue, Jan 30, 2018 at 9:15 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Jeanette Meeker
223 Hartnell Pl
Sacramento, CA 95825
meekerjs@att.net
(916) 921-5327

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Jeanne Davenport (agwood1@yahoo.com) Sent You a Personal Message Tue, Jan 30, 2018 at 7:19 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Jeanne Davenport
6103 E Monlaco Rd
Long Beach, CA 90808
agwood1@yahoo.com
(562) 429-2762

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Jeb Pronto (jpronto@hotmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 8:27 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Jeb Pronto
PO Box 13
Weimar, CA 95736
jpronto@hotmail.com
(555) 555-5555

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Jeffery Dorer (jeffdorer2002@yahoo.com) Sent You a Personal Message Tue, Jan 30, 2018 at 11:46 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Jeffery Dorer
510 S Coronado St
Los Angeles, CA 90057
jeffdorer2002@yahoo.com
(555) 555-5555

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Jeff Hathaway (jeffchlic@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 9:50 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Jeff Hathaway
616 S Washington Ave
Fullerton, CA 92832
jeffchlic@gmail.com
(714) 305-3326

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Jennie Bloom (bloomjennie@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 7:32 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Jennie Bloom
1490 W Mission Blvd
Ontario, CA 91762
bloomjennie@gmail.com
(614) 229-0866

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Joanna Katz (joanna07@sonic.net) Sent You a Personal Message Tue, Jan 30, 2018 at 9:55 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Joanna Katz
1320 Addison St Apt A412
Berkeley, CA 94702
joanna07@sonic.net
(510) 647-3513

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Joan Teitler (elmacvetcl@aol.com) Sent You a Personal Message Tue, Jan 30, 2018 at 8:09 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Joan Teitler
11910 Van Allen Rd
Felton, CA 95018
elmacvetcl@aol.com
(831) 335-8496

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Joe Salazar (houseofsavoy2000@yahoo.com) Sent You a Personal Message Tue, Jan 30, 2018 at 10:31 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Joe Salazar
610 Cherrywood Dr
Santa Rosa, CA 95407
houseofsavoy2000@yahoo.com
(707) 546-8604

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

John Crahan (jscrahan@hotmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 6:59 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

John Crahan
6641 W 88th St
Los Angeles, CA 90045
jscrahan@hotmail.com
(310) 665-7600

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

John Garcia (garciajohng44@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 10:03 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

John Garcia
6771 Follette St
Carlsbad, CA 92011
garciajohng44@gmail.com
(619) 884-3701

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

John Gasperoni (gaspo@lmi.net) Sent You a Personal Message
<automail@knowwho.com>
To: kharrison@usbr.gov

Tue, Jan 30, 2018 at 8:09 AM

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

John Gasperoni
1830 Francisco St
Berkeley, CA 94703
gaspo@lmi.net
(510) 981-1873

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

John Harter (john.n.harter.civ@mail.mil) Sent You a Personal Message Tue, Jan 30, 2018 at 8:56 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

John Harter
1249 Bundage Ct
Marina, CA 93933
john.n.harter.civ@mail.mil
(831) 384-4916

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

John Livingston (livingstonjohn@att.net) Sent You a Personal Message Tue, Jan 30, 2018 at 9:23 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

John Livingston
2378 Waldon St
Redding, CA 96001
livingstonjohn@att.net
(530) 356-8847

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

John McGinnis (jwmcginnis@sbcglobal.net) Sent You a Personal Message Tue, Jan 30, 2018 at 4:59 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

John McGinnis
15 Sapporo Ct
Petaluma, CA 94954
jwmcginnis@sbcglobal.net
(707) 762-9380

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

John Mclaurin (knotundn416@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 8:23 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

John Mclaurin
179 Niblick Rd # 322
Paso Robles, CA 93446
knotundn416@gmail.com
(805) 712-1898

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Joie Winnick (joiewinnick@earthlink.net) Sent You a Personal Message Tue, Jan 30, 2018 at 5:01 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Joie Winnick
13911 Riverside Dr
Sherman Oaks, CA 91423
joiewinnick@earthlink.net
(818) 888-8888

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Joleen Siebert (jolsiebert@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 6:18 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Joleen Siebert
363 E Sycamore Ave
Reedley, CA 93654
jolsiebert@gmail.com
(559) 638-8931

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Jonathan Eden (edenjonathan@hotmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 7:31 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Jonathan Eden
494 Vincente Ave
Berkeley, CA 94707
edenjonathan@hotmail.com
(510) 898-8386

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Judith Joinville (blackbirdj95472@msn.com) Sent You a Personal Message Tue, Jan 30, 2018 at 5:21 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Judith Joinville
174 James Rd
American Canyon, CA 94503
blackbirdj95472@msn.com
(707) 775-1281

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Judith Madigan (judymadigan@yahoo.com) Sent You a Personal Message Tue, Jan 30, 2018 at 5:08 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Judith Madigan
PO Box 243
Loyalton, CA 96118
judymadigan@yahoo.com
(530) 993-4360

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Julianne Frizzell (julianneasla@sonic.net) Sent You a Personal Message Tue, Jan 30, 2018 at 9:11 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Julianne Frizzell
1175 Channing Ave
Palo Alto, CA 94301
julianneasla@sonic.net
(650) 325-0905

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Julie Spengler (j94306s@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 4:02 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Julie Spengler
899 Los Robles Ave
Palo Alto, CA 94306
j94306s@gmail.com
(650) 493-9151

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Kathleen Kaiser (kkaiser@csuchico.edu) Sent You a Personal Message Tue, Jan 30, 2018 at 1:55 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Kathleen Kaiser
1338 Marian Ave
Chico, CA 95928
kkaiser@csuchico.edu
(530) 343-3319

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Keith Bein (kjbein@ucdavis.edu) Sent You a Personal Message Tue, Jan 30, 2018 at 11:12 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Keith Bein
3046 Frye St
Oakland, CA 94602
kjbein@ucdavis.edu
(530) 755-4963

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Keith Hammond (keith@hammond.net) Sent You a Personal Message Tue, Jan 30, 2018 at 6:14 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

California salmon are devastated and in desperate need of restoration.

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Keith Hammond
1195 Halyard Dr
Santa Rosa, CA 95401
keith@hammond.net
(707) 478-2539

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Keith Rhinehart (kdragonfire@dslextreme.com) Sent You a Personal Message Tue, Jan 30, 2018 at 7:22 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Keith Rhinehart
418 Los Padres Blvd
Santa Clara, CA 95050
kdragonfire@dslextreme.com
(408) 985-1448

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Ken And Kathy Myers (myers95818@sbcglobal.net) Sent You a Personal Message Tue, Jan 30, 2018 at 9:18 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

We live in California and we're devoted to preserving its environment. We are especially concerned about attempts to increase water exports from the San Francisco Bay Delta. The old 20th century water "management" program has harmed the Delta environment and its wildlife.

We need to find new, creative solutions that reduce reliance on water from the Delta.....like conservation and recycling programs. Let's promote regional self-reliance.

Let's save our California Delta environment for people and animals.

Thank you.

Sincerely,

Ken And Kathy Myers
2456 Portola Way
Sacramento, CA 95818
myers95818@sbcglobal.net
(916) 457-6825

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Kim Nero (kimonic@knac.com) Sent You a Personal Message <automail@knowwho.com> Tue, Jan 30, 2018 at 9:10 AM
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Kim Nero
1927 Harbor Blvd
Costa Mesa, CA 92627
kimonic@knac.com
(818) 972-9833

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Kris Muller (krismuller@jong.com) Sent You a Personal Message Tue, Jan 30, 2018 at 4:52 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Kris Muller
2230 Stuart St
Berkeley, CA 94705
krismuller@jong.com
(510) 841-5804

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Krista Dana (k_puppy@hotmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 9:56 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Krista Dana
702 W Remington Dr
Sunnyvale, CA 94087
k_puppy@hotmail.com
(408) 732-6433

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Kristeene Knopp (kristeeneknopp@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 7:56 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Kristeene Knopp
822 57th St
Oakland, CA 94608
kristeeneknopp@gmail.com
(510) 912-1534

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Kristen Renton (klr@kristen-renton.com) Sent You a Personal Message Tue, Jan 30, 2018 at 12:51 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Kristen Renton
26503 Big Horn Way
Valencia, CA 91354
klr@kristen-renton.com
(424) 240-8884

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Larry Miller (larryelliotmiller@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 12:58 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Larry Miller
450 El Camino Dr
Beverly Hills, CA 90212
larryelliotmiller@gmail.com
(310) 275-0396

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Laura Dutton (lauradutton@earthlink.net) Sent You a Personal Message Tue, Jan 30, 2018 at 12:44 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Laura Dutton
143 N Lucerne Blvd
Los Angeles, CA 90004
lauradutton@earthlink.net
(323) 848-7860

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Laura Kielman (lkielman@att.net) Sent You a Personal Message
<automail@knowwho.com>
To: kharrison@usbr.gov

Tue, Jan 30, 2018 at 8:28 AM

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Laura Kielman
10346 Dolecetto Dr
Rancho Cordova, CA 95670
lkielman@att.net
(916) 736-2305

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Laura Lind (laurallind@msn.com) Sent You a Personal Message
<automail@knowwho.com>
To: kharrison@usbr.gov

Tue, Jan 30, 2018 at 9:39 AM

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Laura Lind
1427 3rd St
Manhattan Beach, CA 90266
laurallind@msn.com
(310) 374-6963

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Laura Newton (mrsnewt@dc.rr.com) Sent You a Personal Message Tue, Jan 30, 2018 at 7:53 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Laura Newton
37894 Melrose Dr
Cathedral City, CA 92234
mrsnewt@dc.rr.com
(760) 219-0679

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Lawrence Garwin (lawrencegarwin@yahoo.com) Sent You a Personal Message Tue, Jan 30, 2018 at 8:43 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Lawrence Garwin
1127 Middlefield Rd
Palo Alto, CA 94301
lawrencegarwin@yahoo.com
(650) 665-9349

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Lawrence Jensen (ljensen@ix.netcom.com) Sent You a Personal Message Tue, Jan 30, 2018 at 5:27 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Lawrence Jensen
3044 Wisconsin St
Oakland, CA 94602
ljensen@ix.netcom.com
(408) 899-2510

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Lawrence Maxwell (larmax@pacbell.net) Sent You a Personal Message Tue, Jan 30, 2018 at 8:44 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Lawrence Maxwell
1400 Geary Blvd Apt 2304
San Francisco, CA 94109
larmax@pacbell.net
(415) 440-2413

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

L Douglas (lldouglas0@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 9:17 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

L Douglas
PO Box 502
Penngrove, CA 94951
lldouglas0@gmail.com
(707) 326-6948

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Lee Baldwin (lbaldwin@jensonusa.com) Sent You a Personal Message Tue, Jan 30, 2018 at 8:56 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Lee Baldwin
11532 Liggett St
Norwalk, CA 90650
lbaldwin@jensonusa.com
(562) 864-0174

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Lesle Helgason (ladyv88@comcast.net) Sent You a Personal Message Tue, Jan 30, 2018 at 6:55 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Lesle Helgason
1319 Chamisal Way
Pebble Beach, CA 93953
ladyv88@comcast.net
(831) 915-9878

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Leslie Gardner-Lemus (lesliegardnerlemus@yahoo.com) Sent You a Personal Message Tue, Jan 30, 2018 at 8:08 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Leslie Gardner-Lemus
1943 Wickshire Ave
Hacienda Heights, CA 91745
lesliegardnerlemus@yahoo.com
(626) 968-5561

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Linda Weiner (lindawiner@aol.com) Sent You a Personal Message Tue, Jan 30, 2018 at 10:06 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Sincerely,

Linda Weiner
72 Gates St
San Francisco, CA 94110
lindawiner@aol.com
(415) 282-8871

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Lisa Rubin (inner_peace4all@yahoo.com) Sent You a Personal Message Tue, Jan 30, 2018 at 10:49 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Lisa Rubin
4856 Felton St
San Diego, CA 92116
inner_peace4all@yahoo.com
(714) 377-3008

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Lorie Frost (truckinontryg@sbcglobal.net) Sent You a Personal Message Tue, Jan 30, 2018 at 9:02 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Lorie Frost
423 Broadway St
Petaluma, CA 94952
truckinontryg@sbcglobal.net
(707) 781-7491

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Lori Kegler (lori.kegler@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 12:57 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Lori Kegler
810 W 27th St
San Pedro, CA 90731
lori.kegler@gmail.com
(310) 406-5232

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Lucymarie Ruth (lucymarieruth@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 9:53 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Lucymarie Ruth
3761 Park Boulevard Way Apt 301
Oakland, CA 94610
lucymarieruth@gmail.com
(510) 842-3399

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Lynn Elliott (lynnelliott1947@aol.com) Sent You a Personal Message Tue, Jan 30, 2018 at 8:40 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Lynn Elliott
24347 Gazebo Ct
Diamond Bar, CA 91765
lynnelliott1947@aol.com
(909) 860-3812

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Lynn Kouzel (lynnkouzel@yahoo.com) Sent You a Personal Message Tue, Jan 30, 2018 at 8:54 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Lynn Kouzel
3244 San Amadeo Unit
Laguna Woods, CA 92637
lynnkouzel@yahoo.com
(714) 222-2222

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Malcolm Groome (otorongo@earthlink.net) Sent You a Personal Message Tue, Jan 30, 2018 at 10:02 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Malcolm Groome
19688 Grand View Dr
Topanga, CA 90290
otorongo@earthlink.net
(310) 455-1457

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Marc Couacaud (mcouacaud@charter.net) Sent You a Personal Message Tue, Jan 30, 2018 at 10:45 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Marc Couacaud
253 Loma Bonita Dr
San Luis Obispo, CA 93401
mcouacaud@charter.net
(805) 235-3804

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Marc VEZIAN (mejv@hotmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 8:10 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Marc VEZIAN
1561 Hemmingway Rd
San Jose, CA 95132
mejv@hotmail.com
(408) 555-1212

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Maria Jaime (mjaime@spectrumchemical.com) Sent You a Personal Message Tue, Jan 30, 2018 at 9:25 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Maria Jaime
2703 Darwin Ave
Los Angeles, CA 90031
mjaime@spectrumchemical.com
(323) 533-1451

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Marilyn Siegel (zemeralds@yahoo.com) Sent You a Personal Message Tue, Jan 30, 2018 at 6:29 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Marilyn Siegel
1442A Walnut St
Berkeley, CA 94709
zemeralds@yahoo.com
(510) 612-8734

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Marinell Daniel (marinelldaniel@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 10:04 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Marinell Daniel
4070 La Colina Rd
El Sobrante, CA 94803
marinelldaniel@gmail.com
(510) 227-7514

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Marjorie Xavier (marjorie618@aol.com) Sent You a Personal Message Tue, Jan 30, 2018 at 11:42 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Marjorie Xavier
3252 Guillermo Pl
Hayward, CA 94542
marjorie618@aol.com
(510) 537-7550

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Marjory Keenan (marjkeenan44@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 11:58 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Marjory Keenan
1816 Vine St
Berkeley, CA 94703
marjkeenan44@gmail.com
(510) 525-2649

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Mark Foy (mfoy@vitalita.com) Sent You a Personal Message <automail@knowwho.com> Tue, Jan 30, 2018 at 9:52 AM
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Mark Foy
2150 Ashby Ave
Berkeley, CA 94705
mfoy@vitalita.com
(510) 542-9865

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Marshall Goldberg (mrgassociates@earthlink.net) Sent You a Personal Message Tue, Jan 30, 2018 at 5:54 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Marshall Goldberg
17935 Starduster Dr
Nevada City, CA 95959
mrgassociates@earthlink.net
(530) 432-9373

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Martin and Rachelle Mazar (mrmazar@comcast.net) Sent You a Personal Message Tue, Jan 30, 2018 at 7:24 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Martin and Rachelle Mazar
29 Pillon Real
Pleasant Hill, CA 94523
mrmazar@comcast.net
(925) 932-3516

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Maryan Infield (maryan.infield@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 3:49 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Maryan Infield
399 Corbett Canyon Rd
Arroyo Grande, CA 93420
maryan.infield@gmail.com
(805) 610-1137

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Mary Jane Cope (mjpiano@sbcglobal.net) Sent You a Personal Message Tue, Jan 30, 2018 at 8:07 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Mary Jane Cope
317 Nobel Dr
Santa Cruz, CA 95060
mjpiano@sbcglobal.net
(831) 423-2418

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Mary and John Rieger (mfpjrieger@cox.net) Sent You a Personal Message Tue, Jan 30, 2018 at 8:42 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Mary and John Rieger
2104 Crenshaw St
San Diego, CA 92105
mfpjrieger@cox.net
(619) 263-2712

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Mary Mcvey-Gill (marymcveygill@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 11:04 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Mary Mcvey-Gill
734 San Rafael Pl
Stanford, CA 94305
marymcveygill@gmail.com
(650) 857-0593

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Matthew Owen (mrdowen@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 6:23 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Matthew Owen
2065 Canyon Close Rd
Pasadena, CA 91107
mrdowen@gmail.com
(818) 333-1523

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Matthew Reid (matt.reid@att.net) Sent You a Personal Message <automail@knowwho.com>Tue, Jan 30, 2018 at 7:03 AM
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Matthew Reid
1311 Pine St
Calistoga, CA 94515
matt.reid@att.net
(707) 360-5419

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Melody Ross (melody_ross@cox.net) Sent You a Personal Message Tue, Jan 30, 2018 at 3:13 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Melody Ross
10445 Mast Blvd Apt 119
Santee, CA 92071
melody_ross@cox.net
(619) 449-9269

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Michael Abler (mabler@sbcglobal.net) Sent You a Personal Message Tue, Jan 30, 2018 at 9:19 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Michael Abler
99 Frederick St
Santa Cruz, CA 95062
mabler@sbcglobal.net
(831) 555-5555

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Michael Crane (drmcrane@msn.com) Sent You a Personal Message Tue, Jan 30, 2018 at 2:32 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Michael Crane
7777 Fox Tail Court
HIGHLAND, CA 92346
drmcrane@msn.com
(909) 864-1283

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Michael Gilgun (mgilgun@cox.net) Sent You a Personal Message Tue, Jan 30, 2018 at 4:27 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Michael Gilgun
925 Monterey Ct
Chula Vista, CA 91911
mgilgun@cox.net
(619) 422-3266

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Michael Gomel (unk4jazz@yahoo.com) Sent You a Personal Message Tue, Jan 30, 2018 at 2:47 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Michael Gomel
4321 52nd St Apt 321
San Diego, CA 92115
unk4jazz@yahoo.com
(619) 578-2558

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Michael Sarabia (shakydog808@sbcglobal.net) Sent You a Personal Message Tue, Jan 30, 2018 at 6:09 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Michael Sarabia
407 W Longview Ave
Stockton, CA 95207
shakydog808@sbcglobal.net
(209) 477-4729

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Michael Sheffield (mscoach@sonic.net) Sent You a Personal Message Tue, Jan 30, 2018 at 9:07 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Michael Sheffield
8099 Sonoma Hwy
Santa Rosa, CA 95409
mscoach@sonic.net
(707) 833-1214

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Michael Tong (freeronin@yahoo.com) Sent You a Personal Message Tue, Jan 30, 2018 at 10:37 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Michael Tong
2250 Fulton St
San Francisco, CA 94117
freeronin@yahoo.com
(415) 751-8160

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Michele Halligan (mahalligan1@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 8:45 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Michele Halligan
447 Park Blvd
Ukiah, CA 95482
mahalligan1@gmail.com
(530) 624-2671

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Michelle Cohen (mcohen@lawa.org) Sent You a Personal Message Tue, Jan 30, 2018 at 8:00 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Michelle Cohen
6309 Alviso Ave
Los Angeles, CA 90043
mcohen@lawa.org
(323) 294-6811

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Mignon Moskowitz (mignonsm@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 8:10 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Mignon Moskowitz
485 Mission Boulevard
Santa Rosa, CA 95409
mignonsm@gmail.com
(760) 937-0903

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Mona Tinoco (mtinoco26@yahoo.com) Sent You a Personal Message Tue, Jan 30, 2018 at 8:28 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Mona Tinoco
13719 Putnam St
Whittier, CA 90605
mtinoco26@yahoo.com
(562) 964-1101

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

M. Steere (msteere6@gmail.com) Sent You a Personal Message
<automail@knowwho.com>
To: kharrison@usbr.gov

Tue, Jan 30, 2018 at 4:38 PM

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

M. Steere
8195 Park Ave
Forestville, CA 95436
msteere6@gmail.com
(707) 887-6619

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Nadya Schmeder (nadyanapa@att.net) Sent You a Personal Message Tue, Jan 30, 2018 at 9:32 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Nadya Schmeder
1901 York St
Napa, CA 94559
nadyanapa@att.net
(707) 255-5830

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Nancy Mcginnis (mabelmcg@yahoo.com) Sent You a Personal Message Tue, Jan 30, 2018 at 6:40 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Nancy Mcginnis
38 Harper St
San Francisco, CA 94131
mabelmcg@yahoo.com
(415) 401-8005

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Nancy Sikes (sike2n@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 12:04 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Nancy Sikes
2409 Coffeeberry Rd
West Sacramento, CA 95691
sike2n@gmail.com
(916) 526-1845

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Nes Rocha (maxsubie@yahoo.com) Sent You a Personal Message Tue, Jan 30, 2018 at 5:33 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Nes Rocha
50834 Cedar Ridge Cir N
Oakhurst, CA 93644
maxsubie@yahoo.com
(559) 683-6109

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Nick Kerkhoff (nsk76@yahoo.com) Sent You a Personal Message Tue, Jan 30, 2018 at 2:14 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Nick Kerkhoff
121 Elm St
Santa Cruz, CA 95060
nsk76@yahoo.com
(555) 555-5555

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

N W (yadeolhc@live.com) Sent You a Personal Message <automail@knowwho.com> Tue, Jan 30, 2018 at 11:37 AM
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

N W
11154 Still Rd
Grass Valley, CA 95949
yadeolhc@live.com
(310) 936-3355

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Offir Thorne (offircita@aol.com) Sent You a Personal Message
<automail@knowwho.com>
To: kharrison@usbr.gov

Tue, Jan 30, 2018 at 11:47 AM

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Offir Thorne
3617 Brookline St
Modesto, CA 95356
offircita@aol.com
(209) 576-1367

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Pamela R Perls (pperls@comcast.net) Sent You a Personal Message Tue, Jan 30, 2018 at 10:17 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Pamela R Perls
3378 Springhill Rd
Lafayette, CA 94549
pperls@comcast.net
(925) 283-4533

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Pat Yoder (patyoder@gmail.com) Sent You a Personal Message
<automail@knowwho.com>
To: kharrison@usbr.gov

Tue, Jan 30, 2018 at 8:42 AM

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Pat Yoder
4932 Alameda Dr
Oceanside, CA 92056
patyoder@gmail.com
(760) 207-8122

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Paula Carrier (paula_carrier@yahoo.co.uk) Sent You a Personal Message Tue, Jan 30, 2018 at 8:54 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Paula Carrier
2401 5th ave
San Diego, CA 92101
paula_carrier@yahoo.co.uk
(335) 568-7932

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Paul Albert (got-art@charter.net) Sent You a Personal Message <automail@knowwho.com> Tue, Jan 30, 2018 at 2:51 PM
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Paul Albert
56 Buena Vista Dr
Freedom, CA 95019
got-art@charter.net
(831) 722-9902

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Peter Kerr (mycomya@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 11:00 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Peter Kerr
38341 Larue Way
Davis, CA 95616
mycomya@gmail.com
(530) 400-1456

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Peter Sullivan (peterbsullivan@yahoo.com) Sent You a Personal Message Tue, Jan 30, 2018 at 1:25 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Peter Sullivan
1549 Princeton St
Santa Monica, CA 90404
peterbsullivan@yahoo.com
(310) 453-3053

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Philip Rohr (primerib599@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 6:43 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Philip Rohr
3827 Valleybrink Rd
Los Angeles, CA 90039
primerib599@gmail.com
(323) 662-0880

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Qui Vuong (cwong8218@msn.com) Sent You a Personal Message Tue, Jan 30, 2018 at 9:34 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Qui Vuong
4 Pyramid Lake Ct
Rancho Mirage, CA 92270
cwong8218@msn.com
(760) 880-2238

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Rae Newman (dancingriver@hotmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 10:58 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Rae Newman
5507 Caminito Roberto
San Diego, CA 92111
dancingriver@hotmail.com
(858) 888-0975

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Randall Woodbury (rdw707@yahoo.com) Sent You a Personal Message Tue, Jan 30, 2018 at 10:06 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Randall Woodbury
1552 Cunningham Rd
Sebastopol, CA 95472
rdw707@yahoo.com
(707) 555-5555

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Randy Johnson (wallymax@sbcglobal.net) Sent You a Personal Message Tue, Jan 30, 2018 at 8:28 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Randy Johnson
7503 Elphick Rd
Sebastopol, CA 95472
wallymax@sbcglobal.net
(707) 555-1212

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Randy Myers (sulla1@charter.net) Sent You a Personal Message Tue, Jan 30, 2018 at 10:36 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Randy Myers
PO Box 3877
Crestline, CA 92325
sulla1@charter.net
(909) 338-7150

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Rebecca Frey (rebecca.frey@mac.com) Sent You a Personal Message Tue, Jan 30, 2018 at 11:39 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Rebecca Frey
181 Cherry St
Ukiah, CA 95482
rebecca.frey@mac.com
(707) 694-3845

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Rebecca Rogers (beckypaulson@hotmail.con) Sent You a Personal Message Tue, Jan 30, 2018 at 5:35 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Rebecca Rogers
831 38th Ave
San Francisco, CA 94121
beckypaulson@hotmail.con
(415) 235-1273

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Rich and Cynthia Royce-Kasbo (rlk_cr@cox.net) Sent You a Personal Message Tue, Jan 30, 2018 at 7:31 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Rich and Cynthia Royce-Kasbo
3245 Herman Ave
San Diego, CA 92104
rlk_cr@cox.net
(619) 584-6701

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Rick Edmondson (rickedmon@yahoo.com) Sent You a Personal Message Tue, Jan 30, 2018 at 8:07 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Rick Edmondson
638 Sheri Lane
Rick, CA 94526
rickedmon@yahoo.com
(925) 837-1999

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Robert Clay (frobertclay@yahoo.com) Sent You a Personal Message Tue, Jan 30, 2018 at 7:38 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Robert Clay
5851 Lord Cecil St
San Diego, CA 92122
frobertclay@yahoo.com
(858) 242-2758

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Robert Forsythe (forsite1@yahoo.com) Sent You a Personal Message Tue, Jan 30, 2018 at 5:03 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Robert Forsythe
2080 Benton St
Santa Clara, CA 95050
forsite1@yahoo.com
(408) 249-2222

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Robert Gibson (rdgibson@comcast.net) Sent You a Personal Message Tue, Jan 30, 2018 at 10:25 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Robert Gibson
365 Pearl Dr
Livermore, CA 94550
rdgibson@comcast.net
(925) 449-4494

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Robert Hicks (rahicks@charter.net) Sent You a Personal Message Tue, Jan 30, 2018 at 1:53 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Robert Hicks
2999 E Ocean Blvd Unit 1740
Long Beach, CA 90803
rahicks@charter.net
(562) 414-6724

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Robert Larsen (robertlarsen88@hotmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 11:57 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Robert Larsen
1491 Meadow Lane
Concord, CA 94520
robertlarsen88@hotmail.com
(925) 323-7174

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Robert Magarian (rdmagarian@yahoo.com) Sent You a Personal Message Tue, Jan 30, 2018 at 10:12 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Robert Magarian
PO Box 1126
Berkeley, CA 94701
rdmagarian@yahoo.com
(510) 848-2513

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Rob Gallinger (robgallinger@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 8:02 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Rob Gallinger
5053 Montezuma St
Los Angeles, CA 90042
robgallinger@gmail.com
(818) 326-3199

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Robin Reinhart (robinreinhart1@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 10:55 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Robin Reinhart
2626 29th St
San Diego, CA 92104
robinreinhart1@gmail.com
(619) 283-3139

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Roger Lema (rogerjlema@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 8:22 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Roger Lema
3312 Monika Ln
Hayward, CA 94541
rogerjlema@gmail.com
(510) 728-0712

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Roger Vaught (rvaught@hotmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 1:43 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Roger Vaught
2026 Kentucky St
Redwood City, CA 94061
rvaught@hotmail.com
(650) 368-8885

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Ronald and Donna Thompson (kitacoastdonna@charter.net) Sent You a Personal Message Tue, Jan 30, 2018 at 11:19 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Ronald and Donna Thompson
320 Napa St
Crescent City, CA 95531
kitacoastdonna@charter.net
(707) 464-5937

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Rosa Baeza (rosbaeza@aol.com) Sent You a Personal Message Tue, Jan 30, 2018 at 10:52 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Rosa Baeza
19556 Hart St
Reseda, CA 91335
rosbaeza@aol.com
(818) 996-0821

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Rosalind Bresnahan (rosalind568@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 3:24 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Rosalind Bresnahan
500 Edgerton Dr.
San Bernardino, CA 92405
rosalind568@gmail.com
(555) 555-5555

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Sally Howlett (sahowlett@lmi.net) Sent You a Personal Message Tue, Jan 30, 2018 at 6:01 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Sally Howlett
1836 Rose St
Berkeley, CA 94703
sahowlett@lmi.net
(510) 542-1203

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Sam Parsons (parsonssg@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 10:18 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Sam Parsons
8915 Trujillo Way
Sacramento, CA 95826
parsonssg@gmail.com
(916) 704-7608

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Sanda Logan (sandalogan@sbcglobal.net) Sent You a Personal Message Tue, Jan 30, 2018 at 8:58 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Sanda Logan
835 Bayview Way
Redwood City, CA 94062
sandalogan@sbcglobal.net
(650) 299-1000

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Sandra Gamble (sl.gamble@aol.com) Sent You a Personal Message Tue, Jan 30, 2018 at 4:16 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Sandra Gamble
914 W Perch Ave
Ridgecrest, CA 93555
sl.gamble@aol.com
(760) 375-7097

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Sandra Peterson (slp@realtalkworld.com) Sent You a Personal Message Tue, Jan 30, 2018 at 6:52 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Sandra Peterson
1540 W 3rd St
Santa Rosa, CA 95401
slp@realtalkworld.com
(707) 758-4960

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Sandy Commons (sandygatta454@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 8:51 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Sandy Commons
2703 Corabel Ln Apt 215
Sacramento, CA 95821
sandygatta454@gmail.com
(999) 999-9999

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

saundra holloway (email4saundra@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 6:52 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, and a registered voter, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

saundra holloway
785 Maplewood Way
el cajon, CA 92021
email4saundra@gmail.com
(775) 572-8643

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Shannon Mcentee (shannonrmcentee@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 8:42 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Shannon Mcentee
410 Sheridan Ave Apt 216
Palo Alto, CA 94306
shannonrmcentee@gmail.com
(650) 704-4674

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Sharon Lacy (earthhrt@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 1:05 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Sharon Lacy
536 S Main St
Sebastopol, CA 95472
earthhrt@gmail.com
(707) 823-5403

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Sherri Mellinkoff (s.mellinkoff@comcast.net) Sent You a Personal Message Tue, Jan 30, 2018 at 1:43 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Sherri Mellinkoff
5865 Morpeth St
Oakland, CA 94618
s.mellinkoff@comcast.net
(510) 547-0436

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Stacy Cornelius (stacycornelius@yahoo.com) Sent You a Personal Message Tue, Jan 30, 2018 at 10:42 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Stacy Cornelius
270 Cliff Dr Apt 9
Laguna Beach, CA 92651
stacycornelius@yahoo.com
(949) 813-5959

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Stephen Bohac (stephenbohac56@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 12:26 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Stephen Bohac
PO Box 1730
Twain Harte, CA 95383
stephenbohac56@gmail.com
(209) 586-7405

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Steve Hylton (hyltonsteve@rocketmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 10:04 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Steve Hylton
3971 Erskine Creek Rd
Lake Isabella, CA 93240
hyltonsteve@rocketmail.com
(760) 382-4221

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Steve Tyler (abc3dtd@gmail.com) Sent You a Personal Message
<automail@knowwho.com>
To: kharrison@usbr.gov

Tue, Jan 30, 2018 at 8:13 AM

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Steve Tyler
2564 N Franki St
Orange, CA 92865
abc3dtd@gmail.com
(714) 283-4404

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Sudi Mccollum (sudimccollum@earthlink.net) Sent You a Personal Message Tue, Jan 30, 2018 at 8:39 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Sudi Mccollum
3244 Cornwall Dr
Glendale, CA 91206
sudimccollum@earthlink.net
(818) 556-4677

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Sue Leskiw (sueleskiw1@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 12:09 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Sue Leskiw
155 Kara Ln
McKinleyville, CA 95519
sueleskiw1@gmail.com
(707) 442-5444

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Sue Wolfe (sands2257@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 9:17 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Sue Wolfe
2666 Lakewest Dr
Chico, CA 95928
sands2257@gmail.com
(530) 514-5910

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Susan Sanders (sanders471@sbcglobal.net) Sent You a Personal Message Tue, Jan 30, 2018 at 7:12 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Susan Sanders
471 Miller Creek Rd
San Rafael, CA 94903
sanders471@sbcglobal.net
(999) 999-9999

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Susan Watts (susanmwr@aol.com) Sent You a Personal Message Tue, Jan 30, 2018 at 8:47 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Susan Watts
16217 Sunset Trl
Riverside, CA 92506
susanmwr@aol.com
(951) 906-3067

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Suzanne Kunstman (tuti_on_ice@yahoo.com) Sent You a Personal Message Tue, Jan 30, 2018 at 4:38 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Suzanne Kunstman
28939 Poppy Meadow St
Canyon Country, CA 91387
tuti_on_ice@yahoo.com
(818) 660-3907

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Suzanne Murray (suzmurr@yahoo.com) Sent You a Personal Message Tue, Jan 30, 2018 at 7:05 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Suzanne Murray
PO Box 2162
Nevada City, CA 95959
suzmurr@yahoo.com
(707) 366-6777

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Tamara Goldsby (tlgoldsby@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 2:38 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Tamara Goldsby
4011 Burma Spur
Fallbrook, CA 92028
tlgoldsby@gmail.com
(555) 555-5555

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Tamar Diana Wilson (tamardiana@yahoo.com) Sent You a Personal Message Tue, Jan 30, 2018 at 11:30 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Tamar Diana Wilson
8585 Via Mallorca Unit 31
La Jolla, CA 92037
tamardiana@yahoo.com
(858) 457-3636

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Ted Rees (trees2296@gmail.com) Sent You a Personal Message
<automail@knowwho.com>
To: kharrison@usbr.gov

Tue, Jan 30, 2018 at 4:15 PM

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Ted Rees
2296 Sun Mor Ave
Mountain View, CA 94040
trees2296@gmail.com
(650) 965-4535

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Teri Lunn (terilunn@gmail.com) Sent You a Personal Message <automail@knowwho.com> Tue, Jan 30, 2018 at 6:12 AM
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Teri Lunn
120 Marvin Ct
Petaluma, CA 94954
terilunn@gmail.com
(415) 555-5555

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Thamar Wherrit (thamar@snowcrest.net) Sent You a Personal Message Tue, Jan 30, 2018 at 10:52 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

The environmental idiocy continues. Not one decision by this administration has shown any intelligence about the importance or relevance of environmental health. As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, fewer exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Thamar Wherrit
PO Box 708
Mount Shasta, CA 96067
thamar@snowcrest.net
(530) 495-8624

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Theodora White (tbwhite48@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 10:32 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Theodora White
6405 Monteverde Ln
Citrus Heights, CA 95621
tbwhite48@gmail.com
(559) 681-4759

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Therese Ryan (mandm2872@earthlink.net) Sent You a Personal Message Tue, Jan 30, 2018 at 9:14 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Therese Ryan
37310 36th St E
Palmdale, CA 93550
mandm2872@earthlink.net
(555) 555-5555

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Thomas Deetz (trdeetz7@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 12:47 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Thomas Deetz
244 Brodin Ln
Watsonville, CA 95076
trdeetz7@gmail.com
(831) 722-8512

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Do NOT drain the Delta.

T McColgin (tminfo1-email@yahoo.com) Sent You a Personal Message Tue, Jan 30, 2018 at 7:18 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

T McColgin
PO Box 1015
Forestville, CA 95436
tminfo1-email@yahoo.com
(707) 887-0000

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Tom Hazelleaf (cheapcruiser2003@yahoo.com) Sent You a Personal Message Tue, Jan 30, 2018 at 8:27 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of Seal Beach, California, I am outraged at attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you.

Sincerely,

Tom Hazelleaf
4656 Fir Ave
Seal Beach, CA 90740
cheapcruiser2003@yahoo.com
(562) 430-6237

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

Our economy needs more water in the estuary. Don't drain the Delta.

Tom Johnson (4321tj@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 8:47 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Tom Johnson
625 Glenloch Way
Emerald Hills, CA 94062
4321tj@gmail.com
(650) 368-7655

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Ursula Glick (uoglick@hotmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 5:12 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Ursula Glick
PO Box 223368
Carmel, CA 93922
uoglick@hotmail.com
(831) 747-0906

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Valerie Sanfilippo (vsanfi@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 1:26 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Valerie Sanfilippo
3246 Ashford St Unit M
San Diego, CA 92111
vsanfi@gmail.com
(858) 715-1849

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Vera Strader (strader@mlode.com) Sent You a Personal Message Tue, Jan 30, 2018 at 10:27 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Vera Strader
17275 Blackbird Ln
Sonora, CA 95370
strader@mlode.com
(209) 532-3388

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Vicki Hughes (vdh2810@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 11:07 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Vicki Hughes
2121 Alabama St Apt 2
Huntington Beach, CA 92648
vdh2810@gmail.com
(213) 399-7344

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Vincent Campisi (bogart661@earthlink.net) Sent You a Personal Message Tue, Jan 30, 2018 at 11:42 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Vincent Campisi
15386 Rhododendron Dr
Canyon Country, CA 91387
bogart661@earthlink.net
(661) 252-4292

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Vincent Shulda (v.shulda@cox.net) Sent You a Personal Message Tue, Jan 30, 2018 at 2:39 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Vincent Shulda
31342 W Nine Dr
Laguna Niguel, CA 92677
v.shulda@cox.net
(949) 240-6685

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

William Griswold (wggster@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 1:22 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

William Griswold
2769 Schenley Ter
San Diego, CA 92122
wggster@gmail.com
(858) 552-9264

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

William Modesitt (kylekai@mac.com) Sent You a Personal Message Tue, Jan 30, 2018 at 2:13 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

William Modesitt
4728 Mount La Platta Dr
San Diego, CA 92117
kylekai@mac.com
(858) 974-9850

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

William Tippets (billtippets@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 9:56 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

William Tippets
5850 Soledad Mountain Rd
La Jolla, CA 92037
billtippets@gmail.com
(619) 822-4323

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

William Weaver (siberians@hotmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 6:32 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

William Weaver
914 Heartwood St
Lincoln, CA 95648
siberians@hotmail.com
(555) 555-5555

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

William Wollner (bmwmcbill@msn.com) Sent You a Personal Message Tue, Jan 30, 2018 at 8:09 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

William Wollner
323 E Magnolia St
Stockton, CA 95202
bmwmcbill@msn.com
(209) 948-5918

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Xuan Pham (nammodidaphat@yahoo.com) Sent You a Personal Message Tue, Jan 30, 2018 at 7:18 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Xuan Pham
1648 Midfield Ave
San Jose, CA 95122
nammodidaphat@yahoo.com
(408) 821-4502

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Amanda Schmidt (amandahigleyschmidt@gmail.com) Sent You a Personal Message Wed, Jan 31, 2018 at 9:20 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Amanda Schmidt
4436 Montcurve Blvd
Fair Oaks, CA 95628
amandahigleyschmidt@gmail.com
(916) 962-1548

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Andy Tomsky (atomsky@yahoo.com) Sent You a Personal Message Tue, Jan 30, 2018 at 11:46 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Andy Tomsky
PO Box 683
San Marcos, CA 92079
atomsky@yahoo.com
(619) 795-7275

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Anna Kim (annaleakim@gmail.com) Sent You a Personal Message Wed, Jan 31, 2018 at 3:55 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Anna Kim
2908 Aulin Dr
San Jose, CA 95125
annaleakim@gmail.com
(408) 440-2462

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Curtis Barnett (curtilicious@gmail.com) Sent You a Personal Message Wed, Jan 31, 2018 at 8:23 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Curtis Barnett
221 Loma Ave, Apt. C, Apt. C
Long Beach, CA 90803
curtilicious@gmail.com
(562) 212-0563

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Dani DuHadway (dani.duhadway@gmail.com) Sent You a Personal Message Wed, Jan 31, 2018 at 12:06 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Dani DuHadway
2948 Exposition Blvd Apt 8
Santa Monica, CA 90404
dani.duhadway@gmail.com
(949) 230-3280

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Elizabeth Edinger (edingerea@gmail.com) Sent You a Personal Message Wed, Jan 31, 2018 at 6:30 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, fewer exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Elizabeth Edinger
10822 Magnolia Blvd Apt 36
North Hollywood, CA 91601
edingerea@gmail.com
(818) 762-1510

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Elizabeth Gioumousis (liznhenry@yahoo.com) Sent You a Personal Message Wed, Jan 31, 2018 at 4:36 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Elizabeth Gioumousis
1145 W Mc Kinley Ave
Sunnyvale, CA 94086
liznhenry@yahoo.com
(408) 830-9109

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Emily Damm (emily.damm@cdcr.ca.gov) Sent You a Personal Message Wed, Jan 31, 2018 at 8:25 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Emily Damm
5031 Karbet Way
Sacramento, CA 95822
emily.damm@cdcr.ca.gov
(916) 255-2662

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Esther McEgan (emcegan@mercywmw.org) Sent You a Personal Message Wed, Jan 31, 2018 at 9:26 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Esther McEgan
300 Arguello Blvd Apt 201
San Francisco, CA 94118
emcegan@mercywmw.org
(415) 387-8825

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Genevera Wells (wgenevera@hotmail.com) Sent You a Personal Message Wed, Jan 31, 2018 at 8:29 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Genevera Wells
145 Cielo Ln Apt 103
Novato, CA 94949
wgenevera@hotmail.com
(415) 328-8201

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Hansen Leclair (hansen.leclair@gmail.com) Sent You a Personal Message Wed, Jan 31, 2018 at 8:06 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Hansen Leclair
589 26th Ave
San Francisco, CA 94121
hansen.leclair@gmail.com
(530) 414-1799

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

James Richards (jimrichards000@yahoo.com) Sent You a Personal Message Wed, Jan 31, 2018 at 11:15 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

James Richards
1511 1/2 Jacobsen St
Antioch, CA 94509
jimrichards000@yahoo.com
(925) 757-8799

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Jerry Sullivan (luvnordic@yahoo.com) Sent You a Personal Message Wed, Jan 31, 2018 at 3:20 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Jerry Sullivan
1909 Eddy Cir
Mount Shasta, CA 96067
luvnordic@yahoo.com
(530) 859-1479

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Jessica Denham (gal.friday@yahoo.com) Sent You a Personal Message Wed, Jan 31, 2018 at 7:49 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Jessica Denham
360 the Vlg Unit 105
Redondo Beach, CA 90277
gal.friday@yahoo.com
(707) 486-8131

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Joanne Simmons (teetime33@msn.com) Sent You a Personal Message Wed, Jan 31, 2018 at 11:03 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Joanne Simmons
24225 Calle Artino
Murrieta, CA 92562
teetime33@msn.com
(951) 219-0207

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Joel Eisenberg (jeprops@gmail.com) Sent You a Personal Message Wed, Jan 31, 2018 at 10:12 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Joel Eisenberg
5940 Arlington Blvd
Richmond, CA 94805
jeprops@gmail.com
(510) 307-5454

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

John Cornish (jccornish@comcast.net) Sent You a Personal Message Tue, Jan 30, 2018 at 11:21 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

John Cornish
5501 Connecticut Dr
Concord, CA 94521
jccornish@comcast.net
(925) 672-2002

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

John Nowak (diver0013@gmail.com) Sent You a Personal Message Wed, Jan 31, 2018 at 12:26 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

John Nowak
1318 S Rita Way
Santa Ana, CA 92704
diver0013@gmail.com
(714) 597-2573

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Keiko M. (anoodlehead@gmail.com) Sent You a Personal Message Wed, Jan 31, 2018 at 8:49 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Keiko M.
9 Mayfair Dr
San Francisco, CA 94118
anoodlehead@gmail.com
(415) 216-6403

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Ken Ige (ken_ige@yahoo.com) Sent You a Personal Message <automail@knowwho.com> Wed, Jan 31, 2018 at 10:18 AM
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Ken Ige
493 Doral Ct
Brentwood, CA 94513
ken_ige@yahoo.com
(925) 437-2438

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Laura Saunders (tolsaunders@yahoo.com) Sent You a Personal Message Wed, Jan 31, 2018 at 7:26 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Laura Saunders
170 King St
San Francisco, CA 94107
tolsaunders@yahoo.com
(415) 821-1005

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Les Roberts (hobo17pollie@gmail.com) Sent You a Personal Message Wed, Jan 31, 2018 at 3:02 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Les Roberts
1134 E Lansing Way
Fresno, CA 93704
hobo17pollie@gmail.com
(559) 227-1076

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Linda Howie (lhowie890@gmail.com) Sent You a Personal Message Wed, Jan 31, 2018 at 8:24 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Linda Howie
23543 Via Boscana # K
Valencia, CA 91355
lhowie890@gmail.com
(555) 555-5555

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Linda Law (lindallaw@sbcglobal.net) Sent You a Personal Message Wed, Jan 31, 2018 at 8:55 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Linda Law
20 Live Oak Ln
Carmel Valley, CA 93924
lindallaw@sbcglobal.net
(831) 659-3574

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Matt Woodward (mattwoodward@hotmail.com) Sent You a Personal Message Wed, Jan 31, 2018 at 1:02 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Matt Woodward
127 11th St # B
Seal Beach, CA 90740
mattwoodward@hotmail.com
(207) 432-8500

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Melanie Zeller (mwzeller@gmail.com) Sent You a Personal Message Wed, Jan 31, 2018 at 10:07 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Melanie Zeller
1838 Sundowner Ln
Walnut, CA 91789
mwzeller@gmail.com
(909) 598-7749

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Mike Ovard (movard@hotmail.com) Sent You a Personal Message Wed, Jan 31, 2018 at 7:01 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Mike Ovard
5300 E Walton St
Long Beach, CA 90815
movard@hotmail.com
(562) 810-5565

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

M Rae (mrae@gmail.com) Sent You a Personal Message <automail@knowwho.com> Wed, Jan 31, 2018 at 10:52 AM
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

M Rae
2021 Waverley St
Palo Alto, CA 94301
mrae@gmail.com
(650) 326-4571

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Nadia Haddad (nadiahaddad3@gmail.com) Sent You a Personal Message Tue, Jan 30, 2018 at 8:28 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Nadia Haddad
1500 Monterey Pass Rd
Monterey Park, CA 91754
nadiahaddad3@gmail.com
(323) 266-3355

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Patricia Giles (patriciagiles1@gmail.com) Sent You a Personal Message Wed, Jan 31, 2018 at 3:25 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Patricia Giles
PO Box 1055
Burlingame, CA 94011
patriciagiles1@gmail.com
(360) 993-5877

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Pattie Meade (plmsurf@cox.net) Sent You a Personal Message Wed, Jan 31, 2018 at 10:28 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Pattie Meade
421 Via Montego
San Clemente, CA 92672
plmsurf@cox.net
(949) 492-5454

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Peter Sardellitto (payrollpeter@hotmail.com) Sent You a Personal Message Wed, Jan 31, 2018 at 4:25 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Peter Sardellitto
138 Hagar Ct
Santa Cruz, CA 95064
payrollpeter@hotmail.com
(831) 421-9521

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Robert Rodman (rrodmanjr@sbcglobal.net) Sent You a Personal Message Wed, Jan 31, 2018 at 3:02 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Robert Rodman
1907 Hunkpapa St
South Lake Tahoe, CA 96150
rrodmanjr@sbcglobal.net
(530) 577-4049

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Shannon Patty (shannonapatty@hotmail.com) Sent You a Personal Message Wed, Jan 31, 2018 at 10:28 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Shannon Patty
7794 Reagan Rd
Riverside, CA 92509
shannonapatty@hotmail.com
(951) 212-6516

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Susan Fisher (sukisuzy@hotmail.com) Sent You a Personal Message Wed, Jan 31, 2018 at 12:12 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Susan Fisher
24365 Village Walk Pl Apt 301
Murrieta, CA 92562
sukisuzy@hotmail.com
(951) 461-1695

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Teresa Treiber (ttreiber@cox.net) Sent You a Personal Message Wed, Jan 31, 2018 at 8:16 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Teresa Treiber
828 Silvergate Ave
San Diego, CA 92106
ttreiber@cox.net
(619) 226-4521

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Amanda Leblanc (amandarosy@yahoo.com) Sent You a Personal Message Thu, Feb 1, 2018 at 3:52 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Amanda Leblanc
205 Ragle Ave S
Sebastopol, CA 95472
amandarosy@yahoo.com
(408) 390-9787

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Ann Stratten (strats2@sbcglobal.net) Sent You a Personal Message Wed, Jan 31, 2018 at 10:45 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Ann Stratten
3751 Via Picante
La Mesa, CA 91941
strats2@sbcglobal.net
(619) 303-8007

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Apryl Mefford-Hemauer (aprylmh@gmail.com) Sent You a Personal Message Thu, Feb 1, 2018 at 1:00 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Apryl Mefford-Hemauer
2524 5th St Apt 2
Santa Monica, CA 90405
aprylmh@gmail.com
(310) 433-2854

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

David Maher (billyshelby@hotmail.com) Sent You a Personal Message Thu, Feb 1, 2018 at 3:29 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

David Maher
2540 Glen Green St
Los Angeles, CA 90068
billyshelby@hotmail.com
(310) 999-9999

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Dennett Hutchcroft (dennett-hutchcroft@uiowa.edu) Sent You a Personal Message Thu, Feb 1, 2018 at 7:20 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Dennett Hutchcroft
136 Ipanema Pl
Davis, CA 95616
dennett-hutchcroft@uiowa.edu
(319) 621-2194

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Fred Cox (sfoview@gmail.com) Sent You a Personal Message <automail@knowwho.com> Thu, Feb 1, 2018 at 11:09 AM
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Fred Cox
66 Corwin St Apt 13
San Francisco, CA 94114
sfoview@gmail.com
(415) 255-6880

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Herb Shoemaker (ffherb@sbcglobal.net) Sent You a Personal Message Thu, Feb 1, 2018 at 1:55 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Herb Shoemaker
PO Box 675
Carmel Valley, CA 93924
ffherb@sbcglobal.net
(831) 659-2359

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Jennifer Taketani (jenntaketani@gmail.com) Sent You a Personal Message Thu, Feb 1, 2018 at 1:06 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Jennifer Taketani
8008 Woodlake Ave
West Hills, CA 91304
jenntaketani@gmail.com
(949) 280-5384

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Judith Bayer (jbayer820@yahoo.com) Sent You a Personal Message Thu, Feb 1, 2018 at 11:28 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Judith Bayer
11536 Alkaid Dr
San Diego, CA 92126
jbayer820@yahoo.com
(858) 547-3542

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Margaret Simonsen (egansart@gmail.com) Sent You a Personal Message Thu, Feb 1, 2018 at 1:19 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Margaret Simonsen
13 Ramsgate Way
Vallejo, CA 94591
egansart@gmail.com
(707) 654-8866

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Margo Berdanis (bberdanis@verizon.net) Sent You a Personal Message Wed, Jan 31, 2018 at 11:30 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Margo Berdanis
3550 Brayton Ave
Long Beach, CA 90807
bberdanis@verizon.net
(562) 424-1585

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Michael Ireland (michael-ireland@att.net) Sent You a Personal Message Thu, Feb 1, 2018 at 1:51 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Michael Ireland
PO Box 1048
Groveland, CA 95321
michael-ireland@att.net
(209) 962-5142

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Ryan Schrader (rschrader90@yahoo.com) Sent You a Personal Message Thu, Feb 1, 2018 at 9:55 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Ryan Schrader
9623 Muroc St
Bellflower, CA 90706
rschrader90@yahoo.com
(562) 860-7217

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Stephen Vodantis (svodantis@gmail.com) Sent You a Personal Message Thu, Feb 1, 2018 at 10:03 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Stephen Vodantis
901 10th St Apt 301
Santa Monica, CA 90403
svodantis@gmail.com
(310) 394-7984

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Caren Montante (caren.montante@gmail.com) Sent You a Personal Message Fri, Feb 2, 2018 at 8:08 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Caren Montante
839 Garden Ct
Petaluma, CA 94954
caren.montante@gmail.com
(707) 486-9186

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Gary Doran (garydoranjr@gmail.com) Sent You a Personal Message Fri, Feb 2, 2018 at 8:37 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Gary Doran
3360 E Foothill Blvd Apt 220
Pasadena, CA 91107
garydoranjr@gmail.com
(717) 497-7462

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Jan Lewis (jlobispo@hotmail.com) Sent You a Personal Message
<automail@knowwho.com>
To: kharrison@usbr.gov

Fri, Feb 2, 2018 at 11:56 AM

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Jan Lewis
PO Box 587
Cayucos, CA 93430
jlobispo@hotmail.com
(805) 995-1255

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Linnea Fronce (wildart@dslextreme.com) Sent You a Personal Message Fri, Feb 2, 2018 at 6:45 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Linnea Fronce
991 Sagamore Way
Sacramento, CA 95822
wildart@dslextreme.com
(916) 441-6205

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Noah Youngelson (sohanmonk@gmail.com) Sent You a Personal Message Fri, Feb 2, 2018 at 8:06 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Noah Youngelson
2449 Walgrove Ave
Los Angeles, CA 90066
sohanmonk@gmail.com
(310) 499-8425

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Regina Phillips (regine.phillips@sbcglobal.net) Sent You a Personal Message Fri, Feb 2, 2018 at 3:16 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Regina Phillips
20134 Leadwell St
Winnetka, CA 91306
regine.phillips@sbcglobal.net
(818) 727-1701

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Zora Hocking (zhocking@msn.com) Sent You a Personal Message Fri, Feb 2, 2018 at 9:58 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Zora Hocking
2308 Donna Maria Ct
Santa Rosa, CA 95401
zhocking@msn.com
(707) 303-7680

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Florence Harrod (f.harrod@cox.net) Sent You a Personal Message Sat, Feb 3, 2018 at 4:07 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Florence Harrod
139 Cerro St
Encinitas, CA 92024
f.harrod@cox.net
(760) 942-7373

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

John Donlin (john.t.donlin@gmail.com) Sent You a Personal Message Sat, Feb 3, 2018 at 4:44 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

John Donlin
PO Box 782
La Canada Flintridge, CA 91012
john.t.donlin@gmail.com
(818) 645-1357

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Karsten Sauer (ksjunkmail@me.com) Sent You a Personal Message Sat, Feb 3, 2018 at 3:35 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Karsten Sauer
11064 Madrigal St
San Diego, CA 92129
ksjunkmail@me.com
(858) 672-7713

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Llyn Parker (llyn_parker@yahoo.com) Sent You a Personal Message Sat, Feb 3, 2018 at 4:48 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Llyn Parker
5702 Beck Ave
North Hollywood, CA 91601
llyn_parker@yahoo.com
(818) 760-8545

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Piers Strailey (piersandfaith@gmail.com) Sent You a Personal Message Sat, Feb 3, 2018 at 3:09 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Piers Strailey
PO Box 3012
Quincy, CA 95971
piersandfaith@gmail.com
(555) 555-5555

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Ron Goldman (rgoldman@cs.stanford.edu) Sent You a Personal Message Sat, Feb 3, 2018 at 3:26 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Ron Goldman
1908 Alford Ave
Los Altos, CA 94024
rgoldman@cs.stanford.edu
(650) 622-6759

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Sean Wayland (trekie140@gmail.com) Sent You a Personal Message Sat, Feb 3, 2018 at 12:50 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Sean Wayland
4541 Hillview Ct
Rohnert Park, CA 94928
trekie140@gmail.com
(707) 318-4927

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Susan Wallace (jaimexplorer@gmail.com) Sent You a Personal Message Sat, Feb 3, 2018 at 4:46 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Susan Wallace
2104 Farnsworth Way
Rancho Cordova, CA 95670
jaimexplorer@gmail.com
(916) 480-8910

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Suzie Stoltz (suzannestoltz@att.net) Sent You a Personal Message Sat, Feb 3, 2018 at 7:23 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Suzie Stoltz
80 El Rancho Vis
Chula Vista, CA 91910
suzannestoltz@att.net
(619) 646-8150

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Claire Watson (sorchasibeal10@att.net) Sent You a Personal Message Sun, Feb 4, 2018 at 10:25 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Claire Watson
500 Suntree Ln Unit 511
Pleasant Hill, CA 94523
sorchasibeal10@att.net
(925) 427-9236

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Cynthia Ishimoto (cynthiaish@yahoo.com) Sent You a Personal Message Sun, Feb 4, 2018 at 3:22 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Cynthia Ishimoto
3301 Middlefield Rd
Palo Alto, CA 94306
cynthiaish@yahoo.com
(650) 739-0248

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Elizabeth Estes (kitties2@charter.net) Sent You a Personal Message Sun, Feb 4, 2018 at 1:09 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Elizabeth Estes
1111 Del Rey Ave
Pasadena, CA 91107
kitties2@charter.net
(626) 696-3142

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Justin Chernow (jchernow2@yahoo.com) Sent You a Personal Message Sun, Feb 4, 2018 at 11:09 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Justin Chernow
1062 Sleepy Hollow Rd
Paso Robles, CA 93446
jchernow2@yahoo.com
(650) 793-5551

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Nancy Byers (biotechberk@yahoo.com) Sent You a Personal Message Sun, Feb 4, 2018 at 2:14 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Nancy Byers
2009 Prince St
Berkeley, CA 94703
biotechberk@yahoo.com
(510) 898-0510

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Pamela Gibberman (pgibberman@gmail.com) Sent You a Personal Message Sun, Feb 4, 2018 at 4:06 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Pamela Gibberman
9209 Kester Ave
Panorama City, CA 91402
pgibberman@gmail.com
(818) 893-9020

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Phillip Cripps (pcripps@roadrunner.com) Sent You a Personal Message Sun, Feb 4, 2018 at 4:27 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Phillip Cripps
35898 Calle Raphael
Cathedral City, CA 92234
pcripps@roadrunner.com
(760) 321-8599

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta!

Roger Boyd (heyroger34@gmail.com) Sent You a Personal Message Sun, Feb 4, 2018 at 10:42 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

I'm a resident of southern California and strongly oppose water exports from the San Francisco Bay Delta. It has been a short term solution to support our H2O needs, while gradually destroying the environment in northern Caliornia and encouraging raging misuse in southern California. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction as well as many other important life forms. Stop it NOW!

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers. Support innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation, recycling programs, and desalination.

The Bureau must lead in reconsiding plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that are failing the Delta.

Thank you for your consideration.

Sincerely,

Roger Boyd
1304 Via Mil Cumbres
Solana Beach, CA 92075
heyroger34@gmail.com
(858) 481-7547

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Yolanda Trujillo (yoponcha@hotmail.com) Sent You a Personal Message Sun, Feb 4, 2018 at 6:07 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Yolanda Trujillo
834 S Bluebird Cir
Anaheim, CA 92807
yoponcha@hotmail.com
(714) 281-9079

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Kathleen Smith (kms_smith@yahoo.com) Sent You a Personal Message Mon, Feb 5, 2018 at 2:07 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Kathleen Smith
350 E Taylor St Apt 1110
San Jose, CA 95112
kms_smith@yahoo.com
(408) 279-0605

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Marijane Poulton (marijanep@hotmail.com) Sent You a Personal Message Mon, Feb 5, 2018 at 11:42 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Marijane Poulton
PO Box 649
Trinidad, CA 95570
marijanep@hotmail.com
(707) 677-9001

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Rose An (dewsparkle.rose@gmail.com) Sent You a Personal Message Mon, Feb 5, 2018 at 5:25 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Rose An
23 Fano Street
Arcadia, CA 91006
dewsparkle.rose@gmail.com
(626) 821-0189

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Carol Wiley (desertlily1@verizon.net) Sent You a Personal Message Tue, Feb 6, 2018 at 12:50 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Carol Wiley
15457 Eto Camino Rd
Victorville, CA 92394
desertlily1@verizon.net
(760) 245-8734

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Donald Weiden (weidendon123@gmail.com) Sent You a Personal Message Tue, Feb 6, 2018 at 10:28 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Donald Weiden
91 Solana Dr
Los Altos, CA 94022
weidendon123@gmail.com
(650) 941-8751

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Gabriel Chang (gabrielchang2000@yahoo.com) Sent You a Personal Message Tue, Feb 6, 2018 at 11:26 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Gabriel Chang
9620 Oak St
Bellflower, CA 90706
gabrielchang2000@yahoo.com
(424) 265-0247

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Carol Ellenberger (carol_ell@yahoo.com) Sent You a Personal Message Wed, Feb 7, 2018 at 5:44 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Carol Ellenberger
16155 Jackson Oaks Dr
Morgan Hill, CA 95037
carol_ell@yahoo.com
(408) 779-9266

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Paul Runion (paulrunion@yahoo.com) Sent You a Personal Message Wed, Feb 7, 2018 at 12:39 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Paul Runion
170 Kipling Ave
Ben Lomond, CA 95005
paulrunion@yahoo.com
(831) 359-9792

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Shane Yellin (shaneyellin@gmail.com) Sent You a Personal Message Wed, Feb 7, 2018 at 5:56 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Shane Yellin
4517 Cove Dr Apt 1
Carlsbad, CA 92008
shaneyellin@gmail.com
(617) 256-4728

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Yvette Castro (yvytree@gmail.com) Sent You a Personal Message Wed, Feb 7, 2018 at 7:33 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Yvette Castro
PO Box 4727
Panorama City, CA 91412
yvytree@gmail.com
(818) 644-7314

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Carol Starkey (carolastarkey@att.net) Sent You a Personal Message Thu, Feb 8, 2018 at 1:07 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Carol Starkey
10875 Rio Ruso Dr
Windsor, CA 95492
carolastarkey@att.net
(707) 838-1335

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Chris Gilbert (chris@gilbertbiz.com) Sent You a Personal Message Thu, Feb 8, 2018 at 1:20 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Chris Gilbert
1797 Madera St
Berkeley, CA 94707
chris@gilbertbiz.com
(510) 528-4202

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Deborah Ebersold (ebersocats@att.net) Sent You a Personal Message Thu, Feb 8, 2018 at 1:07 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Deborah Ebersold
1054 N Vista St Apt 2
West Hollywood, CA 90046
ebersocats@att.net
(323) 882-8083

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Gerald Griffin (gldkarma@aol.com) Sent You a Personal Message Thu, Feb 8, 2018 at 1:24 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Gerald Griffin
35646 Dee Pl
Fremont, CA 94536
gldkarma@aol.com
(510) 792-6327

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Ana-Paula Fernandes (anapaulamfernandes@gmail.com) Sent You a Personal Message Sat, Feb 10, 2018 at 2:54 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Ana-Paula Fernandes
705 Mendocino Way
Redwood City, CA 94065
anapaulamfernandes@gmail.com
(650) 399-4545

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Jeff Ligouri (jeffl6019@yahoo.com) Sent You a Personal Message Sun, Feb 11, 2018 at 2:26 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Jeff Ligouri
456 S 21st St
San Jose, CA 95116
jeffl6019@yahoo.com
(408) 644-6537

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Michelle Oroz (michelleoroz@yahoo.com) Sent You a Personal Message Sun, Feb 11, 2018 at 10:27 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Michelle Oroz
350 Duncan Hill Rd
Auburn, CA 95603
michelleoroz@yahoo.com
(408) 555-5555

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Thomas Brustman (eco@brustman.com) Sent You a Personal Message Sun, Feb 11, 2018 at 11:25 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Thomas Brustman
2013 Devita Ct
Walnut Creek, CA 94595
eco@brustman.com
(925) 999-9999

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Karina Oleynikov (madamekarinka@yahoo.com) Sent You a Personal Message Mon, Feb 12, 2018 at 2:44 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Karina Oleynikov
7015 De Celis Pl
Van Nuys, CA 91406
madamekarinka@yahoo.com
(818) 521-9466

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Lauren Sygiel (lsygiel@gmail.com) Sent You a Personal Message Mon, Feb 12, 2018 at 10:45 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Lauren Sygiel
3654 Zwissig Ct
Pleasanton, CA 94566
lsygiel@gmail.com
(925) 895-2073

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Eugenia Larson (eklarson@comcast.net) Sent You a Personal Message Wed, Feb 14, 2018 at 9:27 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison:

As a resident of California, I am OUTRAGED at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should RECONSIDER PLANS to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Eugenia Larson
160 Canyon Green Pl
San Ramon, CA 94582
eklarson@comcast.net
(925) 806-0644

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Michelle Viscuso (michelle.viscuso@gmail.com) Sent You a Personal Message Wed, Feb 14, 2018 at 3:13 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Michelle Viscuso
38850 Godfrey Pl
Fremont, CA 94536
michelle.viscuso@gmail.com
(555) 555-5555

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Dan Chen (nine50six-citizen@yahoo.com) Sent You a Personal Message Thu, Feb 15, 2018 at 12:59 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Dan Chen
240 Walk Cir
Santa Cruz, CA 95060
nine50six-citizen@yahoo.com
(831) 854-7885

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Margaret Maciborka (lm.maciborka@hotmail.com) Sent You a Personal Message Tue, Feb 20, 2018 at 9:50 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Margaret Maciborka
101 Lombard St Apt 104W
San Francisco, CA 94111
lm.maciborka@hotmail.com
(415) 989-3605

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Pol Hermes (polhermes@yahoo.com) Sent You a Personal Message Tue, Feb 20, 2018 at 8:28 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Pol Hermes
PO Box 3891
Ramona, CA 92065
polhermes@yahoo.com
(401) 782-1708

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Dianna Wood (dwood22@msn.com) Sent You a Personal Message Wed, Feb 21, 2018 at 8:47 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Dianna Wood
21276 White Pine Dr Spc 18
Tehachapi, CA 93561
dwood22@msn.com
(661) 822-4710

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Terrell Rodefer (trodefer@sbcglobal.net) Sent You a Personal Message Tue, Feb 27, 2018 at 1:12 AM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I am outraged at any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Terrell Rodefer
13609 Valerio St Unit B
Van Nuys, CA 91405
trodefer@sbcglobal.net
(818) 780-1331

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

Harrison, Katrina <kharrison@usbr.gov>

We need more water in the estuary. Don't drain the Delta.

Mary Ames (amesink@earthlink.net) Sent You a Personal Message Mon, Mar 5, 2018 at 10:25 PM
<automail@knowwho.com>
To: kharrison@usbr.gov

Dear Bureau of Reclamation,

Dear Katrina Harrison,

As a resident of California, I oppose any attempts to increase water exports from the San Francisco Bay Delta. If anything, less exports are needed to save the Delta and its species. Our salmon runs and the Delta Smelt are already on the brink of extinction.

Instead of investing in water infrastructure that harms the Delta and the watersheds of the Sacramento and San Joaquin Rivers, we need to look for innovative water solutions that reduce reliance on the Delta. As climate change increases the volatility of California's water, regional self-reliance will be critical to avoid further disasters. This includes conservation and recycling programs south of the Delta.

The Bureau should reconsider plans to increase exports. It should look for better approaches that promote regional self-reliance, instead of 20th century approaches to water management that have failed the Delta.

Thank you for your consideration.

Sincerely,

Mary Ames
30657 Sky Terrace Dr
Temecula, CA 92592
amesink@earthlink.net
(951) 506-0274

This message was sent by KnowWho, as a service provider only, on behalf of the individual noted in the sender information.

In the Matter Of:

Revisions To The Coordinated Long-Term Operations

PUBLIC SCOPING MEETING

January 23, 2018

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U.S. DEPARTMENT OF THE INTERIOR

BUREAU OF RECLAMATION

REVISIONS TO THE COORDINATED LONG-TERM OPERATIONS OF THE CENTRAL VALLEY PROJECT AND STATE WATER PROJECT AND RELATED FACILITIES

PUBLIC SCOPING MEETING

Conducted by: Erin Curtis, Katrina Harrison and Federico Barajas

January 23, 2018

2:00 p.m.

650 Capitol Mall
Stanford Room
Sacramento, California

Mandy M. Medina, CSR No. 11649

PUBLIC SCOPING MEETING

January 23, 2018

(The Meeting commenced at 2:09 p.m.)

MR. THIBAULT: My name is Roger Thibault and I am here to ask that the pumping in the Delta not be accelerated; that I had the good fortune of growing up in the Delta in the late '50s, early '60s, and the fish population was estimated to be 17 million. During that -- fish population estimates are there are 4 million fish.

That means, in my lifetime, we have lost two-thirds of the fish in the Delta. And the number one culprit, not the only, but the most significant culprit is overpumping of water from the Delta.

I can remember when we would go out and catch 25 stripers in a couple of hours, catfish, all you could bring in. There was a shad run at B&W, where we kept the boat -- they had the row boats to rent for fishing -- and with the lantern and the dip net, those boats would come in full to the gunwales with shad. That's how many fish used to be in the Delta.

That's not the case anymore. And, once again, the number one reason is overpumping of the Delta and the most precious and natural resource for fish: Water.

Additionally, we had a boat that drew almost 4 feet of water. We would take it into Snodgrass Slough behind Walnut Grove, no problem. The last time I was in the Snodgrass Slough about five years ago, I was in an outboard and I had to raise the motor to get over a bar that had accumulated.

And the reason all this is happening is because there is not enough water flowing through a natural system that nature took hundreds of thousands of years to design, and now we are trying to queer for the benefit of unsustainable agricultural profits in the desert. You can't grow pistachios and almond trees in the desert without them consuming huge amounts of water. Because unlike row crops in a drought scenario, you can't let them go fallow. They require water all the time.

Additionally, there is the selenium problem and the selenium problem like Kesterson. Kesterson is a drainage area in the San Joaquin Valley that selenium ran into when we had a huge bird kill years ago.

All of these things have to point to, if you are at all concerned with a healthy environment, with an ongoing environment that's beneficial to man and fish -- and we do have a symbiotic relationship -- then we cannot pump more water out of the system.

And so I am asking anybody, everybody that has anything to do with this decision to just look at the facts. We paid a lot of attention to environmental concerns, but just what does that mean? What it means now is we have to vote "no" on augmenting pumping out of the Delta, because it's simply going to make a bad situation worse. It's going to turn the Delta into a saltwater -- saltwater backwater. It's going to ruin the farms, because the farmers won't be able to pump out of it.

So to put production into the desert, you are going to kill some of the most fertile farmland naturally in the state of California. That doesn't make any sense. Additionally, the desert land you are going to be irrigating is going to end up leaching selenium and creating another problem.

So there is only one logical thing to do: Do not increase pumping to the Delta. If anything, we need more and a better flow through the system.

Thank you.

MS. CURTIS: Hi, there. My name is Erin Curtis. For those of you who were not here earlier, I'm from Reclamation. And we have been delaying our start of the formal presentation overview part of this meeting to give as many people as possible

an opportunity to come into the room. But if we wait too much longer, we're not going to be able to give people the opportunity to speak before we run out of time. So we are going to go ahead and start and I'll just give you an overview of how this meeting is going to go.

Obviously, we are going to welcome you, and then we are going to have a project manager come and give you an overview of this project.

And then after she's done, you'll have an opportunity to go to our stations again as we have been doing at the forefront here of the meeting, and we will do that for a period of time.

And then depending on how many people submit a comment card, we will figure out how much time each person who wishes to speak publicly has to provide public comment.

So that you know, we also have one of our stations here includes our court reporter. So if you don't want to give your scoping comments in front of the group, but just want to make sure they get on the record, you can do that during the open house section.

Oh, and also, the building manager asked me to make sure that you guys knew a couple of things for safety reasons related to this building. Obviously, if

we have a fire alarm or something like that, they wanted me to let you know, as you probably all spent a lot of time trying to get in the building, you-all want to get out, there are also doors to the right where you can get out to the parking lot in the back. So please be aware that those are the two exits. And if you are looking for the restrooms, you go out this door, veer to the right, and then veer to the left. And they usually have a code that is required for you to get in, but the building manager took that off. So if anybody needs to use the restroom, they're available. Okay?

All right. So I wanted you to know that we are encouraging, obviously, our public comments today on this subject. You can do them written or verbal and you can submit them to us also by E-mail or snail mail, but we need to receive them by February 1st. So you will probably hear that date a number of times today, because we want to make sure everyone is aware.

We want to hear insights and specific local information related to issues for this Environmental Impact Statement, and please share any alternatives you would like us to analyze. We're in the scoping phase. That's the kind of information that we are looking for at the scoping phase, at the beginning of the EIS.

And for those of you who are interested in

providing written comments, you can do that. There are comment cards at the back. You probably saw them on your way in. If you are interested in providing verbal comments, please make sure to fill out a card and submit it so we can make sure that everybody has an opportunity.

And with that, I am going to introduce our deputy regional director, Federico Barajas, who is here and wants to say a few words.

MR. BARAJAS: Thank you, Erin. Welcome, everyone. Appreciate everybody taking their time to be here today.

We are embarking upon a process that is going to be really important for us in Reclamation and should be really important for all of you that have any type of interest in and reliance on water supply options and alternatives as it relates to Reclamation.

We are here because we want to be able to hear from you. This public process that we are initiating today is the opportunity you have to give -- kind of provide input and comments on the overall process that we are going to be embarking upon.

And as indicated by Erin, we are at the infancy stages of this process, meaning that this is really timely for us to hear from you. And one of the

things we are going to focus on today is not only providing and sharing the information on what this project is, but also on what this project is not. We want to make sure that there is a clear understanding on what it is we are embarking upon through this reinitiation of consultation and this coordinated effort on the operations of the CVP and the State Water Project.

A very key element to the operations of both projects is this effort, this long-term effort we are embarking upon. And, therefore, this meeting is an opportunity for us to hear from you, an opportunity for us to collect your thoughts, your ideas, your input and to be mindful of that.

We don't have any preconceived notion of what the outcome is going to be. We want that to be informed by this process. We want to allow opportunity for not only those of you that are here today, but also those that were not able to perhaps make it here today to provide input. And as you will continue to hear, that's going to be a process that is afforded. We do have a deadline of February the 1st.

We are here to be able to ensure that there is a clear understanding from day one of what the project is going to be about, and we propose to explore actions

that are going to enable Reclamation and the State to maximize the water supply deliveries while addressing the status of the listed species in the Delta.

And one of the points I want to make real clear is this is not the California WaterFix; this is not the storage projects. This is a process that will include a number and a multitude of different components and the elements that will help us better address the water supply needs in California and to enable and provide flexibility that we need from an operational standpoint for both projects.

So we are here to listen to your suggestions and to be able to share information with you at this infancy stage of the process. We are going to be embarking upon a series of meetings. As most of you are aware, this is the first. We are going to be going to other parts of the state to ensure that we are as inclusive as we can be insofar as the relevance of this project to the various parts of the state.

So with that, I'm going to go ahead and introduce Katrina Harrison, who is our project manager, and she's here to provide us some basic information on the project, again, on what this is and it's not.

So with that, Katrina, if you can come and --

MS. HARRISON: Thank you, Federico.

So just a little bit more information before we have an opportunity to talk.

So as you probably read in our Notice of Intent that we released December 29th of 2017, the Central Valley Project South of Delta water supplies have decreased since the project was built.

So because of that reason, what Reclamation is looking for as part of this process is to evaluate alternatives that would maximize water supply deliveries also. And really key is also we are looking for alternatives that would help us optimize marketable power generation -- so we're also looking to hear about power actions today -- and also augment operational flexibility of the system by addressing the status of listed species. And we are doing all of this consistent with applicable laws and contractual obligations and agreements.

So what are you going to see out of this process? You will probably see three major reports. First, out of the meeting here today, we are going to put together a public scoping report that will be posted on our website. So that will be all of the comments that you provide us today as well as up until our comment deadline of February 1st. That report is something that we look at as we evaluate the

alternatives and we think about what we are going to do moving forward for the project. So it's real key information as we go about further scoping out what this looks like.

Secondly, you will probably see a Public Draft Environmental Impact Statement. That would be once we have the opportunity to take all of your input, put together alternatives, and then do some analysis on what we think the impacts of those alternatives will be on various aspects of the environment, human and physical resources. That Public Draft Environmental Impact Statement will then be associated with a public comment period, so there would be an opportunity for the public to give comments on that public draft. And then we would take all of those public comments, respond to them, we'd revise the EIS based on those public comments, and then put together a final EIS.

So I know some of you are experts in the National Environmental Policy Act in the room here, and some of you may not be as familiar with it, as I was not before I started working for Reclamation.

So just to give everybody an overview, an Environmental Impact Statement is a document required under the National Environmental Policy Act when federal government takes an action which may have a significant

impact.

The purpose of it is to evaluate a reasonable range of alternatives, so that's one of the reasons we are here today, to hear from you on what that reasonable range of alternatives could be.

The second reason or purpose for the EIS is to identify potential benefits and adverse impacts and propose mitigation to reduce or avoid those impacts.

So that's another thing we are looking to hear from you today. We have kind of a standard list of resource areas that we evaluate in our Environmental Impact Statements, but maybe there is other things we haven't considered or we should be keeping in mind and you might be able to let us know what those are, and we would like to hear that, too.

Thirdly, the Environmental Impact Statement is an opportunity for you all to understand what we might be doing and for you to provide comments. So that's throughout this whole process today being the first opportunity, but many more to come.

And then, fourthly, it supports decision-making by, in this case, the Bureau of Reclamation.

So I mentioned that the Environmental Impact Statement has a whole variety of resource areas that we

generally evaluate impacts upon. Some of those include water resources obviously. As a federal water agency, we are going to evaluate the impacts to water resources.

We also look at other physical resources such as air quality. We also look at biological resources, so that includes both listed species of fish, the fish that are listed under the Endangered Species Act, as well as nonlisted fish and wildlife. So that's something else we evaluate in the Environmental Impact Statement; so not just our listed species, but also our nonlisted species. And also human resources, so land use, socioeconomics, cultural resources issues, we consider all of those things in our Environmental Impact Statement.

So if there is others that I haven't mentioned that you think are really important, let us know today and we'll make sure to evaluate the impacts on those as well.

So in terms of how you can help us, your input will really help shape what we put in this document. We are looking for your help on what alternatives we should consider and also what environmental issues should be evaluated. We are hoping that you have been thinking about how to solve California's complex water supply problems and have a top ten list of awesome ideas off

the top of your head. We would love to hear those today.

Once you give comments, as I mentioned earlier, we will be compiling those into a scoping report. That does mean if you submit comments, that will become public. So that's something to keep in mind. And then that will be available on Reclamation's website. That's something that we refer to as we go through the process of developing this EIS. We look at those comments and take into account and help -- use those to help us determine the reasonable range of alternatives and all of the things that we are evaluating for this project.

So in terms of how you can provide comments, comments are due February 1st, 2018, as we've said a few times already and will say a few times more. You can provide comments today. You can either provide written comments on comment cards, which are at the intro table where Luke is in the back. Luke is in the back over there. So you can provide written comment cards.

You can also provide verbal comments. So during our open house portion, you can come up here to the court reporter and individually tell her your comment, and then she will record that.

And then at the end of the meeting, we will

have an opportunity for verbal comments where you can come up and have a whole group hear your comments. And all of those we will record and incorporate into our scoping report.

Also, you can provide comments after today to me. My E-mail is up here and my address, but also that information is on the back of your agenda. We have all of the contact information for how you can submit comments.

So if you have questions on the presentations, we really encourage you to talk to us at the information stations. This is a pretty large group and we wanted to try to be efficient with the time and make sure we have opportunities for you all to speak, because that's really why we're here today. So we are hoping that you can talk to us at the information tables to get your questions answered.

Also, later, after that, we are going to be doing formal public comment period where you have an opportunity to speak. If you have questions during that time, we won't be answering them, because it's really the time for you to speak. So I encourage you to get your questions answered in the open house portion when we are all talking at the tables.

And then for more information, this is our

website. It's also on the back of your agenda. You can also sign up on the sign-up sheet by the door to get on our distribution list, and then we will let you know about future meetings and opportunities to provide input. And then, also, we really look forward to your comments throughout the preparation of the Environmental Impact Statement.

So with that, I think we are going to go ahead and go to the information stations. Hopefully, this brief presentation kind of spawned some initial ideas and we would love to hear your questions throughout the room.

So we have four stations. There is a court reporter over here, so that's if you want to provide an individual comment to her. The welcome table in the back where Luke is, that's an opportunity for you to provide -- to pick up a speaker card. So if you want to speak today, please do pick up a speaker card and give it to us so that we know how many people want to speak and can allocate the time. And then we have two stations over here for you to get more technical information about the project, an alternatives station, and then a NEPA process station.

So with that, we will go ahead and go to information stations. Thank you.

(The following comments were provided during the open house portion of the meeting:)

MR. KOEPF: My name is Ernie Koepf, K-o-e-p-f, and I am a herring fisherman of 40 years in San Francisco Bay.

And I am here to tell the group that water quality is essential to the estuary, San Francisco Bay and Delta. It harbors many juvenile species that are harvested commercially: crab, halibut, petrale, all type of sand sole, including the fish that visited two times a year to spawn or one time a year to spawn, herring, which I am an expert at.

But that's not what I am here to say. I am here to say that the future of California is dry. I think I can generally get agreement on that. This idea of maximizing water flows to Southern California is ill-timed and it is a water grab. It's a transfer of a public resource from the 99 percent to the 1 percent in most cases.

I think agribusiness in Kern County, established as it is, drawing off the water table as it is, sucking the water from Northern California, which is increasing to be a precious commodity is a bad business model. It's a bad idea.

This Bureau of Reclamation idea to maximize

water flows is a band-aid on an increasing problem in California, which is water shortage. And for us to mortgage our water future for the benefit of the desert is a bad idea.

And I think as an alternative to a marketable power generation, this group should seriously consider solar and wind generation as an alternative and take into account the fact that salmon in this case is like the canary in the coal mine. They start to die off and what's next?

Right now, South Africa is experiencing a water shortage of epic proportions that it is affecting humanity. That's the future that we are looking at if you maximize the flow of water to grow fruit and nuts in the desert.

MR. OPPENHEIM: My name is Noah Oppenheim. I'm the executive director of the Pacific Coast Federation of Fishermen Associations speaking on behalf of over 750 commercial salmon fishermen in coastal communities from Santa Barbara to the Oregon border.

My members rely on commercial fishing for their living, and efforts to maximize flows and exports south of the Delta would result in jeopardy to their livelihoods and the resource on which they depend.

We object, in principle, to the notion that

deliveries need to be maximized. We believe that they should be minimized. We believe that the Central Valley winter-run Chinook salmon life cycle model demonstrates clearly that excessive pumping will result in jeopardy to listed salmonids. We believe that in the process of NEPA scoping, an economic study must be done.

NEPA requires that the environmental consequences section of an environmental review document includes discussions of impacts that are, quote, ecological, aesthetic, historic, cultural, economic, social, or health, whether direct or indirect, or cumulative. An economic review must be cumulative, including the entire life cycle of the Central Valley Project back to its construction as well as the anticipated consequences of all alternatives that might be proposed or considered.

The negative economic effects or impacts of excessive pumping are known to be significant. Indirect effects necessarily include those experienced, quote, later in time or farther removed in distance, but are still reasonably foreseeable, from 40 CFR section 1508.8(b).

NEPA requires that analyses of effect and/or impacts be cumulative such that all past, present and reasonably foreseeable future impacts must be included.

That's from the same statute.

In order for the scope and scale of adequate mitigation measures to excessive pumping be known, an economic study of commercial salmon fishing in all of California, Oregon and Washington must be undertaken as part of NEPA scoping for the reinitiation of consultation. Thank you.

MS. COLEGROVE: So I am Dania Colegrove and I am from the Klamath River, Klamath-Trinity River area, a native of the Hoopa Valley Tribe, descendent of Yurok Tribe. My mom was a Yurok. My dad was a Yurok.

This issue is very important to me, because we live off the rivers; we eat out of the river. And in the last few years, it became very important because the water, basically, because of the drought, isn't there anymore to protect the fish, for the fish's survival. And by California WaterFix, the way they're saying -- basically taking more water storage -- or the proposal is to take more water basically out of the Trinity to provide it for the Sacramento, which in turn comes to the Delta, it's not a solution for us in California for survival. Taking water from one watershed and to provide it for another one is not a sustainable solution.

We are very concerned that the drought is not

over and all of the water that they are allocating for their new proposed water plan is all paper water and it doesn't exist. And that's a big scare in my world.

Let me think about it.

For the survival of our rivers and our salmon, we urge you to really look at this and do the right thing for not only the fish, but for the people of the state of California.

Growing a couple of nuts in the desert is not a sustainable agricultural -- there is no benefit to it. Besides, it's not a necessity food. It's a luxury food. And so I can't see how they can justify taking more water for big agriculture versus fish. And fish feeds everybody, not only native people, but people of California.

Thank you.

MR. MCMANUS: John McManus, Golden Gate Salmon Association. We represent both sport and commercial salmon fishermen and related businesses. We represent an industry that employs about 23,000 people in California in a good salmon year during a normal season, and an industry that's worth about $1.4 billion. Our mission is restoration of Central Valley salmon stocks.

In 2016, in the wake of the drought, U.S. Fish and Wildlife Service, National Fisheries Service and

Bureau of Reclamation all agree that protections for ESA listed fish in the salmon and smelt biological opinions were not protective enough, and thus, an agreement to reinitiate consultation.

Now we see the Bureau has gone 180 degrees on us, and instead of working towards stronger protections, is seeking ways to weaken them. We think this is wrong.

During the drought, we lost between 93 and 98 percent of all spawning salmon in the upper Sacramento basin. We are still suffering from these very low salmon numbers.

Other fish species throughout the Central Valley fair as bad or worse, including Delta smelt, which are teetering on the brink of extinction. The most recent fall survey detected two Delta smelt, a record low, an all-time record low.

Against this backdrop, it seems clear that we need stronger protections, not weaker ones.

As reinitiation of consultation moves forward, I would say one of the things we need is required spring pulse flows. We need more protective pumping restrictions than the negative 5,000 OMR restriction that's currently in the salmon biological opinion.

Relative to implementing the WIIN Act, W-I-I-N, we would say that the Bureau has to defer to

the Fish and Wildlife Service and --

(End of open-house portion.)

MS. CURTIS: The way we are going to do this, I'm just going hand the mic to the first speaker, give them three minutes, and then I'll take the mic and we will call the next speaker. Does that work?

So thank you for coming today to learn how to provide us with your scoping comments as we prepare the EIS for revisions to the Coordinated Long-Term Operation of the Central Valley Project and State Water Project and Related Facilities.

So, today, we are giving members of the public an opportunity to provide verbal comments as part of our scoping process. And my name is Erin Curtis. I'm the public affairs officer for the Bureau of Reclamation's mid-Pacific region, and I will be moderating the comments section to make sure everybody who wishes to speak has an opportunity to do so.

So, today, as you know, I know some of you were still filtering in earlier because of the line outside, we are accepting oral and written scoping comments on this EIS. So to provide oral comments, hopefully, you have submitted a speaker comment card. They look like this. They're available in the back. For those of you that haven't submitted one yet, please

take an opportunity to do so if you wish to speak publicly and fill out the top portion. And if you want to fill out the bottom portion and leave it for us with your written comments, you can do that as well.

So written scoping comments can be submitted at this hearing. You can also send it to the address, fax or E-mail address indicated on the speaker comment card. And, again, we must receive comments by close of business on Thursday, February 1st.

So we are here to listen to your suggestions and information on the alternatives and topics that you think we should address in our document.

The verbal comment section of this meeting will proceed as follows. We'll begin today with any federal, state or local elected officials who wish to comment.

Is there anybody here, elected officials who wish to comment?

Okay. And then we will proceed. And we're going to proceed in the order in which the speakers signed up. I did get a message that a couple of folks who traveled a long way, traveled a long way back and have children, so we have given a couple of accommodations to them.

So we have about -- I think it's 15 people

signed up. So you will each have three minutes to speak, and that will give us an opportunity to hear from everybody.

If you have extensive comments that will exceed that allowed time, you can summarize your comments, and then provide them to us written, or you can also speak with our court reporter and she can make sure that she captures them for the record.

Okay. So a couple of other things to note. When it's your turn, please make sure you clearly state your name and your affiliation, if you have one, into this microphone. Spell your first and last name for our court reporter who will be recording your scoping comments for the record. And please be sure to speak clearly so your comments can be captured accurately. I'll be the timekeeper and I'll indicate when your time is up.

And then after the last speaker, we can be done. And if we have time at the end, we will still have our open house, but we will probably be running out of time around that time.

All right. With that, we are ready to start. And I have Dania Rose.

MS. COLEGROVE: Dania.

MS. CURTIS: I'm going to mess it up. I'll

let you say it. If you want to come speak right here.

MS. COLEGROVE: Perfect. Thank you.

My name is Dania Rose Colegrove, D-a-n-i-a, C-o-l-e-g-r-o-v-e, and I am here today from the Klamath River representing Klamath Justice Coalition. I'm a tribal member from the Klamath River, a Hoopa tribal member.

We are here today and we are going to oppose this water management deal that really isn't a good thing for the State and not a good thing for the fish. I think it's time the State of California realizes that a couple of nuts isn't worth ruining the ecosystem of a bunch of rivers.

I made a statement. I didn't think I was going to get up here, so I kind of am like, "Uh-oh."

So, anyway, I am opposing any water, any more water, taken from the Trinity River, because basically, you have taken 49 percent of the water already and we can't afford to lose any more. With the drought, there is no guarantee that it's over, and I can guarantee you that it's not over. Basically, you guys are allocating water that is a paper water that doesn't exist. So until we stop farming in the desert, this is not going to change anything.

That's basically all I have to say and I will

be sending in written comments. Thank you.

MS. CURTIS: Thank you. Annelia?

MS. COLEGROVE: Thank you guys for letting us go first.

MS. CURTIS: You bet.

MS. HILLMAN: Hi, my name is Annelia, A-n-n-e-l-i-a, H-i-l-l-m-a-n, Hillman. I represent the Klamath Justice Coalition and I am a Yurok tribal member.

I think that maximizing water usage in the Central Valley and other related projects is a terrible, terrible idea. I think that we have -- we're at a breaking point with water. And the best thing that we can do right now is restore our rivers and reduce the use of water in the Central Valley and for these industrial projects.

Water is something that can never be replaced. It is our existence. Without water, there is no life. And if we keep using water irresponsibly for corporate use and for bad business and for unsustainable uses, we are really putting all of our life and the earth in danger. And I think that we are realizing that, you know, with the fires that have happened this year recently, you know, a lot of wealthy people lost their homes, and so they're starting to feel the effects that

we felt for a long, long time, because we have used water irresponsibly and we haven't respected it.

And so it's time that the State and the feds start respecting water and restoring our rivers and the natural waterways.

We see species on the brink of extinction, and we can testify to that on the Klamath River, that our low flows are causing death on the river and we can't afford to lose any more water out of our rivers. And I think that's the same for any other rivers in California and waterways. The best thing that we can do right now for water is to restore it and to take care of it and to stop exploiting it.

It's not okay to frack and it's not okay to farm the desert. So we ask you to please consider the future of your children and your grandchildren and all of our futures and use water responsibly.

Thank you.

MS. CURTIS: Thank you. Next speaker is William Martin.

MR. MARTIN: Thank you. My name is William Martin, W-i-l-l-i-a-m, M-a-r-t-i-n. I am a San Francisco resident. I am also a long-time visitor and recreational fisherman of the California Delta.

The last thing that California Sacramento-San

Joaquin Delta needs is less water. Numerous studies going back many years all conclude that more water is needed for a healthy San Francisco Bay Delta ecosystem.

I refer you to the University of California Davis Center for Watershed Sciences. The center has generated many of these studies, which are all based on strong scientific evidence.

For example, this slide shows six different organisms: Delta smelt, longfin smelt, winter-run Chinook, striped bass, starry flounder and high-value zooplankton.

Do you see those blue lines? The X axis runs from 1967 to 2014. Every one of those blue lines is near zero.

The Bureau of Reclamation web page announcing this hearing, we read, and I quote, "The Central Valley Project and State Water Project operate pursuant to water right permits and licenses issued by the State Water Resources Control Board," end quote.

Allow me to remind the Bureau that the State Water Board is currently updating its Bay-Delta water quality control plan.

In phase one of this update, the Board is proposing an increase in unimpaired flows in the three major tributaries of the San Joaquin River. The Board

is currently working on phase two of this update, which will cover the Sacramento River, the largest single source of flows into the Bay-Delta estuary.

The Bureau needs to coordinate its actions with the State Water Board since its permits and licenses are granted by that body. It is only prudent management to see what the Board is proposing in phase two of its water quality plan update. It is entirely possible that the Board's decision will significantly impact the Bureau's ability to transfer water as it sees fit. That's for one simple reason. There isn't enough water to go around.

As I said at the beginning, the last thing that the Delta needs is less water.

Thank you.

MS. CURTIS: Thank you. Our next speaker is John McManus.

MR. MCMANUS: I'm John McManus. I'm the executive director of the Golden Gate Salmon Association. We represent commercial and recreational salmon fishermen and associated businesses. We represent an industry that, during the normal season, is worth about $1.4 billion in economic activity in California, about 23,000 jobs, about half of that much again in the state of Oregon. Our mission is

preservation and restoration of Central Valley salmon stocks.

I just want to say today we are opposed to the idea of so-called maximizing water deliveries. We agree with the prior speakers who find that we have an ecosystem in collapse and we can't afford to increase diversions from the Delta.

During the drought, we lost between 93 and 98 percent of all of our salmon in the upper Sacramento basin. We're still recovering from that. We are nowhere near recovered from that as well. In the most recent Delta trawl survey in the fall, I believe two Delta smelt were detected.

I can't understand how the Bureau can be possibly talking about increasing water diversions against this backdrop.

I actually want to acknowledge that some of our friends from the Bureau I think know what we're saying, and I feel sorry for those of you working for the Bureau who are being forced to go through this exercise.

So perhaps my comments should be addressed to Mr. David Bernhardt, the Westlands' former lobbyist and attorney who now runs the day-to-day operations at the U.S. Department of Interior in Washington, D.C.,

including oversight of the Bureau of Reclamation and the U.S. Fish and Wildlife Service.

It's clear to us that the State of California needs to step in and stop, for instance, implementation of the WIIN Act, which we believe the State has the authority to do.

I would also like to point out that the Bureau needs to acknowledge that it is subject to the California Endangered Species Act. One of the prior speakers pointed to the fact that the State Water Board, State of California gives the permits that are used by the Bureau for water.

In terms of reinitiation of consultation on salmon biological opinion, instead of looking to maximize water, we would suggest that you look to implement a spring pulse flow. Such a thing exists on the Columbia River where it's been a great assist to rebuilding salmon populations. It's missing here in California and desperately needed.

We need colder not warmer temperatures in the upper Sacramento river. For better salmon spawning, we need less negative OMR flows that restrict the pumps on the Delta.

I would like to say when you talk about maximizing water deliveries, what it sounds like to

those of us who are around is we're going back to the bad old days of the early 2000s before we had the 2009 salmon biological opinion.

Between 2000 and 2006, three all-time high water diversion records were set in the Delta. And what did we see out of that? We saw a complete shutdown of salmon fishing in the ocean for the first time in history in '08 and '09.

Real briefly, let me just wrap up with one other point. 800,000 acre feet is supposed to be dedicated to the environment under the 1992 CVPIA, and yet we don't see that 800,000 acre feet anymore.

So in reinitiation of consultation, we would like to suggest pulling the 2003 guidance that allows that 800,000 acre feet to be counted against so-called foregone pumping in the Delta because of ESA and get that 800,000 acre feet of water back to where it's needed in the Delta.

Thank you.

MS. CURTIS: Thank you. All right. Our next speaker is Roger Mammon. He's going to be speaking for George Wight.

MR. MAMMON: Thank you. I'm speaking for George Wight, W-i-g-h-t. This is what George has to say.

At the age of 76, my passion for fishing in the Delta has never waned. But, unfortunately, what was once a viable fishery, it even sustained a commercial fisher for salmon and striped bass up until the '50s.

During the 1960s and 1970s, I spent many days on the Delta area fishing for striped bass and black bass. The shallow waters I would occasionally -- in the shallow waters, I would occasionally observe a plethora of Delta smelt swimming along the banks, but no more.

Like the proverbial canary in the coal mine, this is telling us something. The Delta is dying. Our fisheries are a fraction of what it once was. Declining salmon, algae blooms, invasive weed, sea lions that were never seen until the 1980s, increased salinity that has never passed the Carquinez Strait will only intensify these problems, and the implausible reports put out about how the Delta WaterFix and its tunnels will improve the Delta are ludicrous.

The general public may buy into this propaganda, but those of us who use the Delta know it's all lies.

Thank you.

MS. CURTIS: Roger, if you want to take your time now as well?

MR. MAMMON: I shall. My name is Roger

Mammon, R-o-g-e-r, M-a-m-m-o-n. I am opposed to the increasing water exports through the Central Valley Project. There are many reasons for my opposition.

The Sacramento-San Joaquin Delta and the decline of its ecosystem have been studied for decades. The health of the Delta is in jeopardy for many reasons and would be more exacerbated if more water is exported before it can flow through the Delta to San Francisco Bay and ultimately to the Pacific ocean.

Pumping more water out of the Delta is ruining habitat, nutrients and fish to the desert farms that grow nuts for export to other countries. Essentially, they are converting that habitat into nuts and selling the converted habitat overseas, making billions of dollars at the expense of the Delta.

Increased exports will allow salinity to creep higher into the Delta jeopardizing over 500,000 acres of federally-designated prime agricultural land as well as the Delta economy. Increased exports will result in increased selenium-tainted agricultural runoff being pumped back into the Delta via the San Joaquin River.

The commercial fisheries will be negatively impacted, the Delta salmon for coastal communities from Monterey into Oregon. The Delta recreational fisheries and tourism will suffer as the Delta becomes more

polluted.

The Delta fisheries have declined to their lowest levels ever. Some of these fish are on the endangered species list and others are listed as threatened.

The decline of the fisheries is a direct relation to the increased habitat exportation over the past four decades.

The Delta is a major winter stopover for the Pacific Flyway. Migratory birds need clean water if they are to survive and get sufficient reserve to migrate north to their breeding grounds.

The Delta Independent Science Board has reported that 70 percent unimpaired flows are needed to keep the Delta healthy, and increasing exports will not help meet that goal. Increased exports will degrade the water quality for all Delta residents. It is inconceivable that 1 percent of California should benefit and Delta residents have to suffer degrading water quality.

The amount of water in the Delta is limited by precipitation and snowpack. This valuable resource must be shared equitably and conform with the 2009 Delta Reform Act which mandates multiple goals for restoring the Delta ecosystem while achieving a reliable water

supply. It also mandates that there be less reliability on the Delta to achieve those goals.

It is time to protect the largest estuary on the west coast of America, not further degrade it. Thank you.

MS. CURTIS: Our next speaker is Ernie Koepf.

MR. KOEPF: Thank you. My name is Ernie Koepf. I spell that last name K-o-e-p-f.

I am a commercial fisherman. I fished for 40 years in the San Francisco Bay Delta for herring. I have three herring permits.

I can tell you from practical experience that a healthy Delta is something to safeguard and protect. And that to protect that, you need an inflow of fresh water.

But that's not really what I am here to say today. You might know, as you might agree, or maybe you disagree, that the future of California is dry. Yes, I'm sorry to tell you, the snowpack is not what it was, rainfall is not what it was and we are subject to drought.

This fiat that comes down from Washington, D.C. to maximize water flows is nothing more than a transfer of a precious and diminishing public resource -- and by that I mean water -- from the

99 percent to the 1 percent. And that's about all I have to say about that.

MS. CURTIS: Our next speaker is Barry Day.

MR. DAY: You hear me? I'm Barry Day, D-a-y. I am Barry Day, commercial fisherman for salmon and Dungeness crab. Just further on the Delta, once the pollution was cleaned up in the Delta, the crab industry went by the graph that way, because that's where the crab are born. That's what happened. All right?

(Interruption by the Reporter.)

MR. DAY: You got that mic yet?

MS. CURTIS: We're getting close.

MR. DAY: It's looking like a Star Wars laser. There we go.

MS. CURTIS: It's set to stun.

MR. DAY: So you are back to the crab, like the young bucks are back and all the females go back, so we got a breeding cycle. Crab industry is good.

Salmon -- whole different story -- run through the water, and we all know that. And it's a wonder the salmon are still alive today after what we have done to them. The gold rush, this, that, and look what we have done to the systems here. We have covered up half the damned Delta and made houses on them, covered the oyster beds up, covered the lot, put dirt over it.

But there is still hope here with salmon, apart from this point that I'll finish on. One, we haven't got goddamned fish farms on the Sacramento basin or Trinity breeding disease into the river systems. Okay? The main problem here is the water.

And it just doesn't stand to logic to me, because as a commercial fisherman, I spent a lot of time on the ocean on my own. So I got to a point where I started -- stopped arguing with myself and actually started thinking. Okay? So I start thinking about things, and this is not even logical.

As the population grows, we will grab the limited resource and keep feeding it to the population, and as the industry grows. It's not a logical calculation.

Now, San Diego is looking at it now. I think they have started it. Santa Barbara did one, but they stopped it, because they got more rainfall, and that's desalinization plants. This is where I was going. Twenty percent of their water at the moment comes from the ocean. We are looking at 50 percent now.

At the start of World War I, planes were flying over each other and to give the enemy -- to drop a brick. Look at the end of World War II, we dropped an atomic bomb.

Now, if we can use that tiny bit of logic on desalinization plants and use that energy on that, because we are in a problem area with water. Please, look at the history of cities that established where there is no water. They die.

Los Angeles, they need to start desalinization plants. That's it. Because this whole system of what we are doing now is doomed. It cannot survive. It's just doomed. If we keep breeding with the use of water, there will be a drip coming out of the goddamned Golden Gate.

MS. CURTIS: Mr. Day --

MR. DAY: Is that it?

MS. CURTIS: That's it.

All right. Our next speaker is Thomas Joseph.

MR. JOSEPH: Thank you. My name is Thomas Joseph. I'm a member of the Hoopa Valley Tribe along the Trinity River and our history dates back -- the University of UCLA carbon tested one of our village sites at 10,000 years. We know we have been there much longer than that.

But we have a history with the State of California and their desire to continue -- continuously to extract wealth out of our communities. At first, it was gold, and then it was timber, and now it's water.

But it's a constant history.

And our history doesn't really date back as far back as Columbus 500 years ago. Our history dates back about 170 years when we first had contact with colonial white settlers. We actually had contact with Chinese miners before we had contact with colonial white settlers. And so our history is not that far back where we've seen the rapid destruction of our ancestral lands. We've seen the destruction of the mining and what it's done to the pollution of the rivers, which has devastated the fisheries as well as the trees, and that has also devastated the watersheds.

And so now we are here with our backs against the wall and we're going to fight for our water. And I want the State of California to know that we will fight for our water; that we are dedicated to preserving our way of life, to preserving our culture, to preserving our -- the way that we pray and where we pray, which is along these rivers; and that the State of California has a higher moral obligation to protect the waters of California, all of the waters of California, to make sure that they're sustainable for all of the citizens.

And, now, this state once paid bounties for my ancestors. And I'm not talking a long time ago. I am talking about my great grandmother, where this state

paid your tax dollars to deliver scalps, baby's wombs for payment.

Now, today, we are in celebration because the City of San Francisco has realized the atrocities that this state has done to the indigenous peoples and they have done away with Christopher Columbus Day, and they have today made the right decision to recognize Christopher Columbus Day as the now indigenous holiday, the Indigenous Day.

So I hope that resonates with the rest of the State of California for the restitution that they don't need to pay back, but they need to recognize their continual colonial mindset that is pursuing a current genocide of the original peoples of this land.

Now, we have lived through the genocide of the concentration camps. We have lived through the genocide of taking our indigenous youth and using them as slaves because California wanted to be a slave -- a free slave state. You know, they didn't want to enslave African-Americans, but they didn't think twice about enslaving indigenous youth. We've lived through that genocide as well.

MS. CURTIS: That's --

MR. JOSEPH: Okay. Thank you.

We also lived through the genocide of boarding

schools. So this is another form of genocide amongst our people. And your ancestors aren't guilty of this genocide: You are. The citizens of California and the people at this board are guilty of this current genocide that's taking place within this great nation of America, within this most powerful State of the Union, and we are going to continue to pour funds into this, we are going to continue to prolong this genocide amongst the indigenous inhabitants? And it needs to stop.

And we know the federal government's hand in this and we know their resolve. We have seen the resolve in Standing Rock. We have see the resolve at the constant opening of fracking alongside the west coast. You know, they can care less about the genocide. It's up to the citizens of California to stand up and rise up together and say, No, our ancestors were wrong, but I am not going to be wrong. I am not going to stand on the wrong side of history any longer. California is going to make the right choice just like San Francisco did today, just like the State did to protect undocumented indigenous community members.

These undocumented folks, these undocumented people, come across this border that they have been doing for thousands of years seeking refuge amongst the lands of our people. That's common practice when their

villages and their communities are under threat, and the State of California recognizes that. These are human rights.

California also has an obligation to uphold the human rights of the indigenous people of this land, and we have a human right to be able to drink clean water. We have a human right to be able to pray at accustomed locations and to practice our ceremonies along these rivers. And when you take that water away, and if you think it's more important to grow nuts, then you are a part of the problem. Stop the genocide.

MS. CURTIS: Thank you. Our next speaker is Noah Oppenheim.

MR. OPPENHEIM: Thank you. My name is Noah Oppenheim. I am the executive director of the Pacific Coast Federation of Fishermen's Associations and the Institute for Fisheries Resources collectively representing over 750 commercial fishermen along the west coast. We have the largest association of fishermen on this ocean in the United States and we oppose excessive pumping.

We fundamentally disagree with the notion of maximizing flows. We believe that maximizing exports has already taken place. We believe that the science is clear, that increased pumping will destroy our way of

life and our industry.

We believe that the NEPA document that you produced in this process must necessarily include economic impacts to commercial and recreational fisheries, particularly salmon.

We know that these impacts are significant. We have seen our industry collapse around us. There were over 4,000 commercial fishermen in the San Francisco Bay in the 1970s. Now there are fewer than 400. We have lost 90 percent of our industry due to excessive pumping and the construction of the Central Valley Project.

NEPA requires that the environmental consequences section of your environmental review include discussions of direct and indirect effects of a proposed action or project. These effects include those that are, quote, ecological, aesthetic, historical, cultural, economic, social or health, whether direct or indirect, or cumulative.

The negative economic effects of increased pumping are known to be significant and must be addressed fully. Indirect effects necessarily include those experienced later in time or farther removed in distance, but are still reasonably foreseeable.

The economic impacts of the increased pumping

will be felt through California, Oregon and Washington. When Oregon catches commercial salmon, they catch Central Valley fish. When Washington catches commercial salmon, they catch Central Valley fish.

A full cumulative economic study using appropriate baselines which must consider levels of fisheries' productivity that predate the construction of the CVP must be conducted as a part of this process.

Thank you.

And I also want to echo the sentiment expressed by John McManus. I really appreciate the professionalism and dedication of the staff of Reclamation. We look forward to engaging productively adversarially with you in the future.

Thank you.

MS. CURTIS: Thank you. Our next speaker is Regina Chichizola.

MS. CHICHIZOLA: Hi, my name is Regina Chichizola, C-h-i, c-h-i again, z-o-l-a. I work with the Pacific Coast Federation of Fishermen's Associations and I also run a group called Save California Salmon.

I am here today to speak up for the salmon in the Sacramento River, the San Joaquin River and the Trinity River. And I notice that there is not a whole lot of people from Westlands here today, and I think

that's because they are running the government and they are running the show.

As you know, during California's drought, the state almost ran out of water and we were told to take short showers while agriculture used more than 80 percent of the developed water and they were not told to furrow their almond trees.

I believe what is really needed is that we need restoration. We need better flows in the wintertime, better flows in the spring, both in the Trinity River and in the Sacramento River. We need to make sure that the cold water is reaching the Delta. We need to make sure that cold water is in the river. We need to prioritize when water is used.

I am opposed to any new dams that take whole water out of any rivers. I also wanted to say that, for the Trinity River, which I came here from the Klamath and Trinity Rivers here today, that we have fought so hard for our water. We have made sure that water is released from the Trinity River to keep another Klamath fish kill from happening. And also our county, Humboldt County, has made sure that 50,000 acre feet of water that they were promised when the Trinity dams went in is being used for salmon, to keep salmon from dying.

And all of these plans are a threat to that.

They are a threat to the tribal trust resources in the Trinity River and they are a threat to the promise that was made to us that when the dams came in, that the first priority would be to people of the river.

So I am opposed and going to fight with every breath in my body against any more water coming out of that river. We need to restore the Klamath River and the Trinity River.

Also, this is a major threat to the process California is in, as it was said before, to restore flows during the wintertime and the springtime for salmon. That is one of the most important things that is needed in the river.

What I do support is I support less water use. I support reusing water when possible. I support retiring Westlands poison lands that are in the San Joaquin Valley that has been shown to be a great thing for the drinking water and for the clean water of the state, because so much water is used in order to keep those lands in production and the release of selenium into the water system. And I am into clean drinking water for all Californians. And as we know, the more water that is used, especially on those poison lands, the more pollution that's going into our rivers.

I work with the State Board constantly on

trying to make sure water is cleaner, and this proposal threatens the last of our salmon and the last of our clean water.

And as we go further and further into global warming, clean water is going to be more valuable than oil.

And I also support all of the tribal people who spoke today, and tribal water rights will be something you guys will have to fight if you try to take more water.

Thank you.

MS. CURTIS: Thank you. Barbara Barrigan-Parrilla.

MS. BARRIGAN-PARRILLA: Thank you to the Bureau for the opportunity to speak. I am Barbara Barrigan-Parrilla. I am executive director for Restore the Delta.

I would like to echo the comments of the people here today from the tribes and from the Pacific Coast Federation of Fishermen Association and Golden Gate Salmon. Your comments were absolutely spot-on.

We have tens of thousands of members from throughout the state, but we represent, of course, first, the people of the Delta.

If operations are ramped up to pump more water

from the Delta, we will lose the Delta smelt. We lose the smelt, we lose the salmon. We lose the salmon, our water quality is degraded with greater and greater salinity. We lose our farms and our agricultural economy, which is worth $5.2 billion a year. We lose those secondary economies tied to that. We lose our economy for our cities.

I live in Stockton. We are the number six large economically distressed city in the United States. We are tied to an agricultural economy. We stand to lose an awful lot, and it starts with that very, very tiny smelt.

It is just absolutely mind-boggling to us when we looked at the NOI that there is a whole plan through the EIS to evaluate the stressors on Delta fisheries, but not to -- but to ignore the stressors caused by the coordination of CVP and State Water Project operations. That makes absolutely no sense to us. The decline in fishery populations is tied to increased exports.

In 2010, under the Delta Reform Act, there were hearings held here in the state of California, federal government, several agencies participated, state agencies, NGOs, and there was a broad consensus reached that exports had to be reduced, that you could only divert 25 percent of the fresh water from an estuary and

actually expect it to live.

In Stockton, where I live, 100 years ago, we canned 450,000 pounds of fish a year. The Delta had 17 canneries and there were 3 to 5 million pounds of fish canned per year. There were two Delta smelt in the last trawl. We have just simply taken too much water out of the system.

It isn't that there aren't other stressors, but all the other stressors are -- they become -- they accumulate, they become compounded, because you don't have the fresh water flows that we need.

It would be a shame to disrupt the food chain for the most important estuary on the west coast of the Americas. It would be a shame to take more water out and disrupt our community further.

Thank you.

MS. CURTIS: Thank you. Our next speaker is Janet Hunsberger.

MS. HUNSBERGER: My name is Janet Hunsberger -- it's H-u-n-s-b-e-r-g-e-r -- and I am a taxpayer and a native Californian.

A couple of other things that I would like to talk about today, I really appreciate somebody bringing up the 1992 Fresh Water Act. Not sure if that's exactly what it's called, but that would be really something

great to review. It should go into this process. I think that would be really good. I would like to see that.

The other thing that I would like to see you consider are underground aquifers. I worked for an environmental engineering company in 1996 through 1998. That's Radiant International. And they did a proof of concept on this in Antelope, California, which is still active today. They built an underground aquifer. They siphoned off water during the heavy winter years like we had last year and built a park over it with a pump station, and then that water can be used in the dryer years, which we know California goes through years of droughts. It's part of our state, many years of droughts, if people lived through the '70s.

Secondly, I would like to see included in your review data that's been gathered from the Suisun marsh water issues, especially the management of that Suisun marsh and now the increased salinity because of the low or restricted water flows. There is a lot of information on that that's already been compiled by the federal government and the state government. And then, thirdly, I would like to see included in this and reviewed is the Endangered Species Act. Not only the fresh water fish, but the waterfowl. There is a huge

migration that takes place. Somebody mentioned the Pacific West Migration Corridor, and especially the Sandhill Crane, and there is other species that are on this Endangered Species Act that will be directly affected if there is more salinity and less fresh water.

I appreciate the comments today and I appreciate this process and I look forward to participating in the future.

Thank you.

MS. CURTIS: Thank you. Our next speaker is Dan Bacher.

MR. BACHER: Hi, I'm Dan Bacher. I'm editor of Fish Sniffer magazine. I also write for other publications. I am here today to strongly oppose the Trump Administration's draft plan to maximize water deliveries and to increase Delta water exports to corporate ag business interests in the San Joaquin Valley.

Over 28 years ago, a small group of anglers and environmentalists fought to get the Sacramento winter-run Chinook salmon listed for protection under the state and federal Endangered Species Act. Historically, winter-run Chinook spawn in upper reaches in Sacramento River tributaries, including the McCloud, Pit and Sacramento. Shasta and Keswick Dams now block

access to these spawning areas.

Beginning in 1970, the remaining population is experiencing a dramatic incline, plummeting to a low of only 200 spawners by early 1990s due to the increases in water exports through the State Water Project and Central Valley Project pumps in the South Delta.

A small but dedicated vocal group, including the Tehama Fly Fishers, the Sacramento River Preservation Trust, and my boss at the time, Fish Sniffer publisher, Hal Bonslett, and myself, we kept going to commission meetings and working on the federal level for the listing of the winter-run Chinook salmons as endangered. We finally succeeded on the state level that year when the fish was listed under as endangered.

The National Marine Fishery Service also listed the winter-run Chinook as threatened five years after the agency received a petition.

In the years since these listings, run numbers have bounced up and down, but the number measures taken included the screening of unscreened diversions, removal of the Red Bluff diversion dam, and some limited excursions on Delta pumping resulted from federal biological opinions. We hoped that the fishery would recover with the listing. It hasn't.

It's now 2018, over 28 years after the

listing, and the winter-run Chinook salmon is still in deep, deep trouble. Record exports of water by the state and federal governments and poor management of upstream reservoirs, combined with the historic drought, have counteracted the proactive measures that have been taken.

The Winnemem Wintu Tribe and their allies are now trying to reintroduce the original run of McCloud River winter Chinook now thriving in the Rakaia River in New Zealand where they were introduced over 100 years ago back to their ancestral home on the McCloud.

Only 1,123 adult winter-run Chinook salmon, once one of the biggest runs in the entire Sacramento River, returned to the Sacramento Valley in 2017. This is the second lowest number of returning adult winter salmon since modern counting techniques were implemented in 2003.

Just let me finish it up. The decline of winter-run Chinook parallels the dramatic decline of spring and fall-run Chinook, Central Valley steelhead, Delta and longfin smelt, green sturgeon and other species.

As people pointed out and others pointed out, only two Delta smelt were found in the fall midwater trawl survey.

Everybody who supports the Delta, Sacramento River, Klamath and Trinity River and other fish must oppose this latest effort by the water contractors to enrich themselves at the public trust; and fish tribes, fishermen, and family farmers, and all of the people of California, and support the Winnemem Wintu tribe and restore the original run of Chinooks to the McCloud River.

We cannot allow this massive water grab by the Bureau of Reclamation and contractors to proceed. We must resist it. We have to stop it or else winter-run Chinook salmon, Delta and longfin smelt and the species, native species and introduced species, will no longer be there.

MS. CURTIS: Our next speaker is Barbara Daly.

MS. DALY: Hello. My name is Barbara Daly -- B-a-r-b-a-r-a, D-a-l-y -- and I am with a group called North Delta Cares out of Clarksburg, which is right in the heart of where the intakes are planning to be and right next to Walnut Grove in Locke where the Delta cross-channel is where the Central Valley Project begins on the Sacramento River.

I have lived in the Delta for 25 years. I have a land-based tourism business there and I have the salmon as part of my logo on the side of my bus.

I support everything that was said here earlier today, and North Delta Cares stands for North Delta area residents for environmental stability. We want our environment stabilized. I am here to oppose maximized flow of -- flows out of the Sacramento River and to genuinely seek other alternatives for water in California. They are out there. The alternatives that we're getting are just reproductions of the same alternative with a little bit of a different flick here or there, but they have given themselves permission to take a piece of any of the alternatives at any time, no matter whether they accept alternatives or if they're preferred alternatives, they can take any alternative they want.

There is a scary alternative in there called Alternative 9, which puts a 7,500 CFS intake facility right at Walnut Grove, and that is right at the Delta cross-channel, and it's all planned, they have it all ready just to slip right in should this go forward.

I do hope that the Trump Administration will finally listen to what is being said here today. It's a bad plan. It's not good for all of Californians.

The State Water Resources Control Board does not represent all Californians. They represent Southern California interests. They don't represent the people

of the Delta fairly. We are not being represented at the State Water Board hearings. But the North Delta Cares is part of those hearings. We have people there, we are a party there, and we are standing up for all of you. We stand up for the tribes, we stand up for the fishermen, we stand up for the farmers, we stand up for the Delta residents.

Should this go forward, the Delta, the small towns along the Delta waterways, the Sacramento River, they will fall into rubble from the constant construction.

There is a town there called Locke that is -- that was built in 1915. It will not be able to withstand the pile driving. It won't be able to withstand these heavy-duty trucks that are going to be running 24 hours a day, seven days a week taking muck out of the river that will be toxic muck, and they're just going to deposit it somewhere else in the Delta.

That's not going -- and they're talking about restoring the Delta? How does that restore the Delta when you take toxic muck out and you put it on an island out there and say that now this is going to be good landfill for you because you have all of this residence and subsidence going on.

That's three minutes. I have a lot more to

say and I have a binder full of material here that I would like to submit. And I'll either bring that over to your office or send it in.

Thank you.

MS. CURTIS: Thank you. We have one more speaker card here from Sammy Gensaw.

MR. GENSAW: I agree that -- I'm Samuel Gensaw, III. I come from the mouth of the Klamath River. My people have always been smokehouse people. My people have always depended on the flows of the Klamath River for sustainability, for the right to feed our family, and for also the right to teach our future generations on how we have a relationship with this earth and we have a responsibility with this earth if we want to live here on this earth. That is something that we teach our children at a young age, to give back. It's something we teach our children at a young age so we do not come across the problem of taking too much from everybody to make sure that we are sufficient.

Right now, we know the facts. You have seen what our ancestors left us with and you have seen what we as ancestors have to leave our children. You know the facts.

But I know that we are in an era of

alternative facts, so I have a couple of those for you as well.

This water that you are taking is killing the people. The amount of water that is being taken from the river is killing the people. Since we have had salmon decreases, the mountain water flowing through the rivers is also tied to the mental health of our people. It's also tied to the economic development of our environment, of our families. And yet the amount of water leaving Northern California to put money in the pockets of billionaires is killing American people silently. We are dying so others can profit overseas.

This is the American system that I grew up in and this is the American system we plan to change. Because would your forefathers of this country agree with what's going on here today, or is that the reason why we broke apart of a system and established our own piece of this earth and decided to become Americans so we can all have a piece of that freedom, not just a select few.

And that's why I stand here today, not only as a tribal member, but a future representative of California. And I am telling you that we will hold people responsible when they say they have stood for our people. We will hold people responsible when they say

they believe that America is here for all.

Thank you.

MS. CURTIS: All right. We have no more comment cards and --

MR. GREEN: Excuse me. I submitted a card.

MS. CURTIS: I'm not sure what happened. Come on up, sir. Not sure what happened to it.

MR. GREEN: Well, the Bureau has tried to stop me from talking before, so it's not a surprise.

My name is Stephen Green, S-t-e-p-h-e-n, G-r-e-e-n. I am president of Save the American River Association.

As you have heard in late December, California Department of Fish and Wildlife reported its annual survey of the Delta and they found only two Delta smelt.

Just a few days later, we heard that there was a proposal going forward to maximize water deliveries from the Delta. Jay Lund, director of the University of California Davis Center for Watershed Sciences replied, "I don't know that they're going to find a lot of extra water without doing violence to the fisheries and the ecosystems."

The Central Valley Project Improvement Act was signed into law in 1992 by president George H.W. Bush. It directs the Bureau of Reclamation to follow

California environmental laws and it made restoring fish in the Bay Area and the Delta a priority.

Yet in the decades since, we have seen nothing but the decline of the fisheries, particularly in the last few years. Every scientific study of the Delta has produced the same result. The only way to preserve the Delta's health and water quality is to allow more fresh water to run through it. Those studies also have shown that what happens in the Delta also impacts ecosystems and fisheries upstream in rivers and creeks, including the American River.

I have other things I could say, but you have already heard those points made very well. I have submitted detailed comments to the Bureau and outlined the law that must be followed as they develop this proposal.

Thank you.

MS. CURTIS: Is there anybody else who wishes to speak at this point?

Well, thank you all for coming and thank you for your comments. We appreciate it. And, again, if you wish to submit those written comments, we have comment cards in the back and it all has information about how you can do so. Thank you.

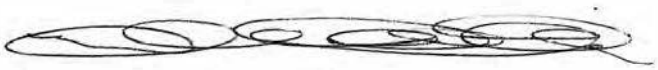
(The Meeting concluded at 4:00 p.m.)

REPORTER'S CERTIFICATION

I, Mandy M. Medina, Certified Shorthand Reporter, in and for the State of California, do hereby certify:

That the foregoing was taken before me at the time and place herein set forth; that the testimony and proceedings were reported stenographically by me and later transcribed into typewriting under my direction; that the foregoing is a true record of the testimony and proceedings taken at that time.

IN WITNESS WHEREOF, I have subscribed my name this 2nd day of February, 2018.



Mandy M. Medina, CSR No. 11649

In the Matter Of:

CT VALLEY PROJECT AND STATE WTR PROJECT

PUBLIC SCOPING MEETING

January 24, 2018

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BUREAU OF RECLAMATION

REVISIONS TO THE COORDINATED LONG-TERM OPERATIONS OF THE CENTRAL VALLEY PROJECT AND STATE WATER PROJECT AND RELATED FACILITIES

PUBLIC SCOPING MEETING

January 24, 2018

6:00 p.m.

645 7th Street
Los Banos, California

Melissa Gleason, CSR No. 13279

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PUBLIC COMMENT SESSION

CONGRESSMAN JIM COSTA: Thank you. Good evening and I want to let everyone here know that we appreciate your being here this -- tonight to provide input to the Bureau of Reclamation and all of the parties that reflect our ability to ensure that we can use what is our most precious resource, certainly one of our most precious resources in the world and here in our valley, which is our water. Truly, we say it, we know it instinctively, but water is the -- our life blood literally and figuratively of not only our valley, our state, but the nation, and when we look on the challenges in terms of providing a food supply for our country in a world that continues to increase in population. Two years ago it clicked 7 billion people, by the middle of the century it's expected we're going to have 9 billion people living on the planet, and so sustainability is truly at -- the critical issue at hand. As a third-generation family farmer in the Kearney Park area here in Fresno, I know, my family knows firsthand the challenges that a decline in a reliable water supply has caused especially over the last two decades and it's impacted our economy of local communities, it's impacted the social fabric throughout the San Joaquin Valley. So this is truly a defining period not only for the Valley,

for the state of California, but for our country and I think we need to rise to meet this challenge, and, you know, we can only do it if we try to work together so I want to thank the Bureau and their staff for reaching out and continuing to listen and work with all of the parties. What you see here in this room and around this area is people that have a lot of history, a lot of experience, and a lot of expertise in the management of our water resources.

Let me give some historical context to why this effort's important in evaluating the alternatives so that we can maximize our water supply that's so important not just to the Valley, but to our state and to the west because as we know, we've been at the cutting edge and water utilization, water efficiency, all of the water management tools -- I like to say the water tools in our water toolbox have been utilized here over decades and we continue to, I think, find new ways in which we can better water our manage -- better manage our water. You know, we all look at times historically, those of us who've been involved here for many decades, not that I'm not that old, but this is arctic blonde you're looking at. 1992 was a very historical time. I remember around that time when the -- it was determined as a result of Kesterson and the situation that the drainage would be cut off and I remember

hearing that way out here in Los Banos at the fairgrounds in which there were, I don't know, 800, 900 people with David Houston, and that coincided with the passage of, in 1992, the Central Valley Improvement Act and as a result of that in the mid 1990s we looked and we changed how we managed the endangered species act with the listing of Delta smelt and Chinook salmon and by the mid to late -- at the turn of the 20th to the current efforts by State Water Resources Control Board to update the Sacramento and San Joaquin River Delta water quality standards. And what we've seen is a reallocation of water for agriculture uses to meet newly imposed environmental needs, and I told the governor and I've told other people, you know, it's -- it's easy or easier I guess I should say to reallocate water when it's not your water or when you haven't been using that water, but it makes a devastating impact to the communities that have been using that water and when you combine that with state's increased population -- when I first took office just a few years ago in Sacramento we had 20 million people in California, today there's 40 million people in California -- and you combine that with significant other changes in the law, either on the federal level, state level, or as a result of court cases and it's led to persistent shortages of water. Now, of course, we all measure water in ten-year increments because, you know,

we have good years and we have bad years. Last year we had a terrific year and this year I don't think we've had a winter yet, certainly I haven't seen it and there's no snow in the mountains and when our folks at the Department of Water Resources have gone to places where they usually go to measure water, measure snow, they can walk to those meadows and, of course, there's nothing to measure to speak of. These impacts of reduced water supplies I don't think can be overstated. Places like Los Banos, Dos Palos, Mendota have felt the brunt of the burden of these lack of water. We have communities here throughout the Valley that have experienced as much as 40 percent unemployment, crippling their economy, straining social services, tearing at the fabric of these communities, their families, increase in crime rate, decline in enrollment in schools. I know, I've seen it. I represent -- I have the honor and privilege to represent these communities and it breaks your heart. And while not all of these impacts can be completely avoided, I surely believe that they can be minimized and I don't think we're doing that job as we should be, but it requires a focus like we have here tonight and it requires a coordination between federal, state, and local agencies and an investment in our infrastructure for new ecosystem management strategies. The solutions we've been talking about for years and I

think for many people they're well understood, but they require a long-term commitment and they require a consensus to ensure that we can provide a reliable water supply. Now, is that unreasonable? I don't think so. People that live in the Bay Area, they want what? A reliable water supply. People who live in southern California, they want what? A reliable water supply. Why should we not be able to try to understand our overdraft challenges and our usage and figure out how we use all these water tools in our water toolbox to create a reliable water supply for the people who live in our valley? There's a lot of ways that we can do that. We can improve our water -- water storage system, both surface and groundwater, and we're doing that, especially in groundwater recharge, and we can try to determine our outflows to the ocean when we have years like last year and store that water, whether it's surface storage or banking it. Improvement -- improved management of our forests also as we've seen the impacts of this drought over the last six years with the bark beetle we've lost over a million and a half trees. There are studies that are being done at U.C. Merced and other places where they've determined that if we improved our management of our forest we could increase California's water supply by as much as 5 to 600,000 acre-feet. I mean, it was estimated, I saw a report last week that as a result of the

loss of trees that the Kings watershed had an additional potentially 270,000 acre-feet of water. What if we just managed our forests better and how much that would add to our supply. This is all incremental because, let me be clear, having worked on these issues for 30 years plus, there is, I know, no silver bullet. There is no one solution. It's a combination of using all of these tools together. Increase investment in water conservation, water reuse, water recycling with desalination are all part of those tools. Reclamation, I want to tell you, has done some good work, I know because I've worked with you, in the Valley. The North Valley Recycling Water Program will share about 60,000 acre-feet of additional water for Del Puerto district and Grasslands, who I saw represented here, and we have other projects that we're working on like that that have benefits.

Finally, what brings us here tonight is how we improve the Central Valley and state water projects and how they're operated. After years of managing the California water systems for the benefit -- I'm talking about the last 20 years -- and recovery of fish species, I think by any objective measurement there are few results that indicate that these actions have had a measurable, I'm talking about a real measurable positive effect. That reminds me of that Einstein quote, you know, that the definition of insanity

is continuing to do things the way you've always done them and expect different results. Well, it's not going to happen. I mean, if we continue to do things the way we've done in the last ten years and the ten years before that and expect we're going to get better results by just maybe providing more releases that somehow that's going to make it better. Me and biologists and all will tell you that much of this deals with habitat and the loss of habitat. Much of this deals with the fact of nonpoint discharges that are taking place. So there's a lot of factors that are involved here and I think it's time that we try to do something new, I'm glad that the Bureau's listening and that we have accountability in all, all of the uses of water.

Recently I've worked very hard with many of you here on the Water Infrastructure Improvement for the Nation, otherwise known as the WIIN Act, that Senator Feinstein and I worked on very, very hard for, gee, almost four years with our Republican colleagues, you know, Congressman Kevin McCarthy and Congressman Denham and Valadao, and as a result of that effort reclamation now has a five year, now going on four years, operational flexibility that you did not have before and to maximize flows when you have the water available as we had last year. Water supplies provides funding and tools necessary

to implement these actions. The WIIN Act also directed us to move, as I said, more water when fish are not being located near the pumps and to increase that pumping. In the first six months of -- excuse me -- six weeks of last year before it started raining heavily, we were able with that flexibility to move about 120,000 acre-feet that in previous times you did not have the flexibility to do that, and that was only in a few weeks. Additionally, the WIIN Act did a number of other important things, for it authorized on the Federal level expanding Shasta Reservoir, constructing Temperance Flat, right behind us here raising San Luis Reservoir. San Luis Reservoir we've been told in terms of the cost benefit ratio we can -- we can raise it for a price that I believe is affordable and that would give us greater flexibility when we can move water through the Delta. In addition, of course, we're looking at expanding Los Vaqueros, again, for Contra Costa and for folks in the Bay Area, and, of course, Sites Reservoir is one that the state is moving with aggressively, and, of course, the voters in California working together with the governor and the legislature passed a 2 -- it was more than that, almost an $8 billion bond measure of which $2.7 billion is provided for additional water storage and I know the Water Commission is working very hard in trying to evaluate the projects and determined they have allocated

funding for a number of projects that have made proposals and they are looking at some of these other projects as we speak. But these are just first steps, more must be done to meet our valley and our state's long-term water needs, to create that sustainability, to create that water reliability. A study released by Reclamation indicates that largely as a result of the impacts of climate change coupled with population growth there will be an average unmet water need in the Central Valley Project, I'm talking about Sacramento and San Joaquin Valleys and Central Valley Project contractors, that could range anywhere from 2.7 to 8.2 million acre-feet annually. Let me repeat that, 2.7 to 8.2 million acre-feet annually. Our overdraft today is already extremely serious and when you add this on top of that, it makes for a situation combined with other factors that we're dealing with, an imbalance that is -- is -- and is and will be devastating of the impacts that we're just now beginning to see with California's recently passed Sustainable Groundwater Management Act. SGMA obviously has good intentions. We ought to get our groundwater balanced, we ought to deal with the overdraft. I don't think anyone argues with that. You know, you continue to go to the bank and you make withdrawals and you don't make deposits, that's only going to last for so long, but all we're trying to -- and I know the Water Districts here, the ones that I

work with, are focusing real, real hard on how they can try to, over a period of time, meet the requirements under the Sustainable Groundwater Management Act, but we need to have all these water tools available to us and we need to create additional resources of water if we're going to be successful at meeting our overdraft; otherwise, it's just not possible or we're faced with other implications of what could be disastrous results to the San Joaquin Valley and that is taking farmland out of production.

There are many ideas that will be presented here tonight and that have been talked about to maximize water supply for CVP contractors, and I intend to continue to work with Reclamation, the Fish and Wildlife Service, NOI, and other folks and hold them accountable as we look at ideas that are presented tonight and other ideas that have been suggested on how we provide solutions, common sense solutions that are affordable.

Let me close with this note, and let me be clear and many of you know this, I have a bias and my bias is that food is a national security issue. There are some things that we can live without, food's not one of them, and I get frustrated oftentimes that the majority of Californians, the majority of people who live in this country take our food supply for granted. Too many believe that the food, this incredible productivity that we've been

able to create over 200 years in this country through the hard work of families, many who are here tonight, live in this area is taken for granted, that we have the most productive agriculture anywhere in the world really. Over 300 commodities are grown here in this Valley alone, half the nation's fruits and vegetables, you know, the number one producer of citrus products, of almonds, walnuts, pistachios, the number one dairy state in the nation, number one producer of wine grapes and table grapes and raisins, all good healthy nutritious foods that we depend upon for our life -- our lives and at an affordability level that is unmatched anywhere in the world for the American family when they sit down at their dinner table. Yes, food is a national security issue, and it's -- it's -- we've got to do a better job of explaining that to folks throughout this great land of ours that we can't take that for granted and it's certainly not something that I think we want to outsource. Yes, we live in a global economy and yes, we sell our food products around the world and some of those food products come here, but that's the nature of a global economy, but with climate change and oceans rising and more areas that are arid or semi-arid finding their ability to produce food, we know if we use all the water management tools in our water toolbox that we can continue to maintain the productive -- the productivity of -- for

the people of California and for our nation in this great San Joaquin Valley of ours, but it's going to take work, it's going to take rolling up our sleeves, and it's going to take compromises, and it's going to take good, sound water management policy and I'm committed to continuing to do that on your behalf working with everyone. So thank you for allowing me to share some thoughts with you tonight and we'll continue to try to do our part in Washington working with our colleagues in Sacramento and with the local water agencies who are some of the most, you know, innovative people you'll ever meet and I know because I've had the honor and pleasure to work with them for many years. So thank you very much.

MIKE WADE: Thank you and thank you for the opportunity tonight for the -- to speak on behalf of water users in the San Joaquin Valley and on this process with the Bureau of Reclamation. My name is Mike Wade, M-I-K-E, W-A-D-E, and I'm the executive director of the California Farm Water Coalition.

The degradation of the Central Valley Project over the last two decades or more has taken a huge human and economic toll on the water management community and its customers. The instability of water supplies has had a direct and undeniable negative impact on many rural and

disadvantaged communities. Central Valley farmers utilize the highest levels of moisture monitoring systems, solar power, and minimally impactful equipment available on the market today. Even with the most advanced technologies they still need water to grow their crops. For many, the Central Valley Project is the only source of this critical water supply. There has been and continues to be relevant scientific advances made of our understanding of the Delta ecosystem which need to be put into practice. Stressor evaluations of other than Central Valley Project and state water project operations, nonflow measures to decrease stressors, and habitat restoration are a few that could yield significant improvement to water users. The Central Valley's ecosystem resources also have immense value including public and privately managed wellings. Local partnerships with farmers and irrigation districts are essential to meeting the needs of some of California's last remaining wellings. CVP deliveries to these areas as well as agricultural districts are critical to the health of the flyway and the diverse wildlife this region supports. This process gives hope that environmental goals may be more effectively met and at the same time improve the supply and reliability of the region's contracted water supply. Thank you very much.

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JON RUBIN: Good evening. My name is Jon Rubin, my name is spelled J-O-N, R-U-B-I-N. I am general counsel for the San Luis Delta Mendota Water Authority. The Water Authority represents 28 member agencies, 26 of which supply -- receive water, excuse me, from the Central Valley Project from the Bureau of Reclamation. The San Luis Delta Mendota Water Authority appreciates Reclamation holding this scoping meeting here in Los Banos. I know that Reclamation staff has traveled far to be here and it's very important, Congressman Costa has I think very well outlined how this area has been adversely impacted. Our members supply water to agricultural communities, urban communities, and wildlife refuges and all of those areas have suffered significantly, more than many areas in the state because of shortages. The notice of intent to prepare the programmatic Environmental Impact Statement represents a very significant and important opportunity, presents an opportunity to restore and protect the water supply for this area and it presents an opportunity to do that in a framework that also provides important protections for fish and wildlife. As Senator -- excuse me -- Congressman Costa has noted, the regulations that have been in place that have taken water from this area have not demonstrated benefits for fish and what we've seen with those regulations in place are fish populations

declining. This presents an opportunity to restore water supply and stop those declines, hopefully improve conditions for fish as well. Thank you.

TIM STROSHANE: I'm Tim Stroshane, good evening everyone. I want to thank the Bureau also for holding this meeting. I talked to a very nice gentleman in the back, Ben, thank you for talking with me earlier. I am with -- I am a policy analyst for Restore the Delta. Restore the Delta advocates for a Delta whose waters are fishable, swimable, drinkable, and farmable supporting the diverse regional economy of the San Francisco Bay Delta Estuary. We appreciate the opportunity to comment on the Bureau's notice of intent and my remarks are directed to this proposed document, so bear with me on that.

First, the NOI clearly indicates that CVP operations will occur in a coordinated manner with the State Water Project. To me this means that the EIS must also comply with the California Environmental Quality Act since the SWP is the owner and operator is a state agency, DWR. Recently the State Water Resources Control Board approved new beneficial uses for Indian, tribal, cultural use and subsistence and for human subsistence fishing generally. The EIS should evaluate impacts and potential mitigation measures for preventing impairment of these

beneficial uses and degradation of water quality resulting from the proposed actions. The Bureau must comply with state water law under section 8 of the Reclamation Act of 1902. In California it is the policy of the State to reduce reliance on the Delta for supplying California's future water supply needs. Each alternative developed for this EIS must show how it complies with this policy mandate as well as how it will achieve the coequal goals in state water law. Since 1992 CVP purposes include operational protection of fish and wildlife as well as water supply. Each alternative must incorporate these purposes as fundamental to CVP operations in coordination with state water project operations. The NOI states the EIS will evaluate stressors on fish other than CVP and SWP operations, beneficial non-flow measures to decrease stressors and habitat restoration and other beneficial measures for improved -- improving targeted fish populations. Failure to properly situate CVP and SWP operations as stressors themselves in the estuary would be, in our view, arbitrary and capricious. If done this way, mitigation strategies will omit the relative contributions of all stressors and would be a good way to make bad policy. Each alternative must be evaluated for the contributions to Delta water quality changes of other water quality stressors including toxics and legacy contaminants

like nutrients, selenium, mercury, arsenic and pesticides. EIS preparers should follow and incorporate findings about these stressors from the Delta Independent Science Board upcoming water quality science review, and I will thank you. That concludes my remarks and I thank you for the opportunity to comment.

(Public Comment Session concludes)

C E R T I F I C A T I O N

I, MELISSA GLEASON, a Certified Shorthand Reporter, within and for the State of California, do hereby certify:

That the foregoing was taken before me at the time and place herein set forth; that the proceedings were reported stenographically by me and later transcribed into typewriting under my direction; that the foregoing is a true record of the proceedings taken at that time.

IN WITNESS WHEREOF, I have hereunto set my hand this 2nd day of February, 2018.

Melissa Gleason, CSR

In the Matter Of:

REVISIONS TO THE COORDINATED LONG-TERM

PUBLIC COMMENTS

January 25, 2018

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REVISIONS TO THE COORDINATED LONG-TERM OPERATION OF THE CENTRAL VALLEY PROJECT AND STATE WATER PROJECT AND RELATED FACILITIES

***

PUBLIC COMMENTS

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THURSDAY, JANUARY 25, 2018
6:00 P.M.

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BARBARA VLAMIS

My name is Barbara Vlamis. I work with AquAlliance, and we will submit formal written comments, but I would like to bring up a few topics this evening.

You just heard the nebulous nature of whatever we're commenting on that's going to make it very difficult, but we'll do our best to get information to you.

A process issue is significantly missing because you are coordinating this with DWR, yet there's no mention of how the SEQA/NEPA processes are going to be coordinated as well as the project. So that must be cleared up.

Significantly, I want you to realize that some of your past documents, such as the Sites Reservoir EIS/EIR that was just out, your Water Fix documents, never expose where the water is coming from, what is the source water for these projects. So that is certainly something that must be in this EIS.

I want to touch on -- we only have three minutes -- this addressing the status of listed species is also a rather vague statement, and I would like just to emphasize, because the two projects, Central Valley Project and the State Water Project, have devastated

fish in this state, using the winter-run as only an example, you have never gotten close to the doubling goals that are supposed to be there for the winter-run salmon.

It's supposed to be 110,000, a very low number as it is, but 110,000 fish, and your average for that is 6,000. Pathetic. And this has been going on for decades. The last high number that I have on the doubling chart is there were 240,000 in 1969, and it's been a collapse ever since.

I would like to suggest that you consider an alternative that was put together by over 30 groups called the Sustainable Water Plan for California. I think this should be an alternative that is considered.

It was put out by the Environmental Water Caucus. I will give you a copy, a physical copy, but we will also email you one with our formal comments, but it addresses -- a comprehensive document that addresses Delta exports, water quality, groundwater management, impaired farmlands, water transfers, the Kern Water Bank, Delta levees, on and on and on.

So I think that this is something that deserves a serious look for an alternative. How was that?

***

BILL GRAVES

I actually wish I had given you that a little later because after you guys all talked I probably will want to say more.

Anyway, my name is Bill Graves, G-r-a-v-e-s. I'm with the Butte-Yuba-Sutter Water Quality Coalition. That's three counties. "Water Quality" is in there too, right?

So we're concerned with -- let me put it to you this way. Our priority is to provide and supply groundwater that is clean and surface water that is clean. We go to periodic meetings. How many members are in the Butte-Yuba-Sutter Water Quality Coalition? Roughly 1500 of us. I represent one of three people from Butte County. I don't want to waste all my time telling you who the heck I am.

Anyway, this is obviously an issue that is very passionate to me or I wouldn't have volunteered to be on there. I don't get paid to be there.

But we do have notices of intent anytime there's chemicals that are going to be used on the surface or wind drift. All those things enter into our reporting, and so these issues are quite passionate to us.

Not just quality, but here's the way I look at it. Why are we all here? We're all here about an emotional issue, and that is water delivery or unavailability, right? I'm up here speaking, right?

Didn't we not all speak a couple years ago to the tune of 69 percent that said we need more water storage? We can argue like hell about how and where and should it be in the ground, should it be on the top, should be it here, should it be in the north end of the state? You can't have water availability if you can't hold it. Okay?

The 1960s, population of California roughly 20 million. We build dams. I don't like it any more than you do, but we've got to have water. The population has doubled. Haven't built a dam since.

I worked all through the eighties for PG&E. Not as a PG&E employee, so you don't have to hold that against me. Sorry. Probably some people here are from there.

I worked in the Feather River Canyon on what we call the chain -- I've got to kind of watch my time here -- of power. Water starts at Lake Almanor, goes through Caribou, goes down, goes down, goes down and goes over just a series of dams. Generated power all along the way. Poe Powerhouse was the last powerhouse in that

chain at one point. Now underwater in Lake Oroville, that powerhouse.

So these are not easy questions. These are not easy answers. We've got to have more water storage. How we get there, I don't know. But don't fight it when you hear it so much. 69 percent of the people already said we need more water storage. You guys want to listen to something? The votes have already been in.

So that's my spiel. Thank you very much for listening.

***

CHIEF CALEEN SISK

I'm Chief Caleen Sisk with the Winnemem Wintu Tribe with the McCloud River, one of the main rivers that flows into Lake Shasta to be to transported down south.

We have suffered the conditions of that lake being installed the first time. We're lucky to be there still. There's only 126 of my people left after the State of California has grown to this event.

And now we're threatened by another dam raise, making Shasta Dam 18 and a half feet higher to hold more water and ship down basically to Westlands Water District. It's not coming to the people. It's going to corporations, and then it will be sold to you if you can afford it.

And right now, you know, as I understand the pumps in the Delta were put there temporarily. They are responsible for killing a lot of fish, millions of fish, and they should be moved to a more appropriate place.

And the Delta tunnels, which is another issue that's being talked about, about transporting water quicker and more efficiently, these tunnels will be buried 150 feet deep into the Delta, meaning to me the cold water springs that are in the Delta will be

destroyed.

Only 20 percent of fresh water goes into the Delta now. That is vulnerable to be transported through these gigantic pipes.

What happens to the Delta? I mean, these fixes are not the answer to the water issues here in California. We have to be smarter than dams because greenhouse gases, the sediments on the bottom -- I mean, we have 60 feet of toxic sludge in the bottom of Lake Shasta, and they want to make it higher.

It's on an earthquake fault line, and if you've ever been out there when an earthquake comes across, it is like ocean conditions on that lake, and all of that sediment is -- I'm sure it's going down river.

But also, you know, we are salmon people. We have been without our salmon for a number of years. BOR is in charge of restoring salmon above the rim dams, yet they're also in charge of raising the dam 18 and a half feet higher. Conflict of interest in my mind, but they say, no, it's all good.

The issue here is that maybe we have to think off-grid. We have to make communities that are more efficient than these pipelines that are going to everybody that's running contaminated water. All of our rivers are contaminated. Nobody is talking about

cleaning them up. We're all fighting over contaminated water, where to ship it.

So, you know, the tules that used to be in this valley, we need to think about replacing or restocking them because they are the water purifiers. They're the ones who kept water clean.

But right now there's no mention of replacing the pipe under all these old cities and stopping all of the water leaks. Those are jobs. Those are saving water, ways of doing this.

So I see my time is up. But just to say, you know, we need to be on the endangered species list, my tribe. Before you raise that dam, you should make the 1941 act of Congress legit.

***

JIM BROBECK

My name is Jim Brobeck. I'm a water policy analyst for AquAlliance.

I want to thank Katrina and the Bureau for acquiescing to have a meeting up here in the area of origin for the water, for this meeting to maximize water deliveries of Northern California water primarily to the San Joaquin Valley.

The EIS must address the consequence of declining aquifer levels associated with Sacramento Valley water districts' conjunctive use of surface and groundwater.

While conjunctive use may prove successful for an individual or group of water users to manage an immediate situation, it's also possible for conjunctive use to intentionally harm the groundwater basin and other groundwater users who are not involved in conjunctive water use.

If conjunctive water use is included in any of the projects alternatives, the EIS must identify areas where groundwater-dependent ecosystems may be impacted.

The EIS must contain an alternative that honors the California Water Code that requires all regions of California reduce their dependence on water imported

from the Delta.

The EIS must analyze how the inflow of fresh water drives the health of the San Francisco Bay estuary and its watershed from mountain-forested watersheds to the Pacific Ocean outside the Golden Gate.

The EIS must consider how large diversions create super-critically dry years in the San Francisco Bay estuary.

The EIR must present an alternative that reduces fish mortality related to the, quote, salvage operations, unquote, near the Delta pumps.

The existing low inflow shift fish habitat, forcing imperiled fish to approach the giant pumps where on average 9 million fish are screened out of the exported water every year, and most of these so-called salvage fish do not survive the ordeal.

The EIR must present alternatives that do not rely on temporary urgency change petitions.

The EIR must evaluate the overallocation of real water in the Central Valley. Water rights on paper are eight and a half times greater than the real water California Central Valley rivers and streams diverted to supply those rights on an average annual basis.

The EIR must evaluate a conservation alternative that would focus on reduction of water

demand by agricultural and urban conservation.

The EIR must evaluate the impacts to indigenous people who have been deprived of their land and abundant supply of numerous salmon runs due to disruption by CVP/SWP infrastructure, and it must examine an alternative that facilitates the return of spawning salmon to the McCloud River.

The EIS must evaluate alternatives that include Sierra-Cascade watershed management that rehabilitates mountain meadow restoration and restores wildfire into the fire-evolved ecosystem. Degraded mountain meadows release runoff while healthy meadows hold and slowly release water and storage.

Again, thank you for traveling up here to meet with this large crowd of concerned citizens.

***

MICHAEL AUGUST

My name is Michael August. I'm from Chico. I was born in Chico in 1949. I've lived in the Sierras most of my young life. I graduated from Quincy High School. I have been around the water and the Feather River that was talked about earlier.

I live on a piece of property here in Chico that was bought originally by my family almost a hundred years ago. When they first put the home in on the property, they had a hand pump on the back porch. So it was less than 20-some feet to the top of the water table.

When I moved back here in 1985, actually 1990, I put in a new ag well on the property. We measured down to about 35 to 36 feet to the top of the water table over that time period from the '20s up until that time. Just recently, in 2016, the water table was at 47 feet.

I'm thinking that the use of the water has increased quite a bit, and I kind of know where it was because when the fish water was sold by the people that had the allocations out of the dam, they started putting in big three-foot-diameter wells all through the Richfield area so they could water the rice. Well,

that's what they did, but your impact is now causing a major bearing on what's going on with the water table in this part of the country.

The folks around me out off of Edgar Avenue used to have 60-foot tailpieces on their pumps. They have a pump set at about 50. They had 10 feet going on down into the water table. They started sucking air about eight or nine years ago, right after all this started happening. Well, some have 80 feet tailpipes on their pumps now.

So I think you need to really consider what's happening to the groundwater table in this area because we know what's gone on south. The land is submerging, subsiding, and you can't bring it back up.

Thank you very much.

***

ROBERT DUNN

Hello. I'm Robert Dunn. I'm the treasurer of the Nor Cal Guides and Sportsman Association. I'm also a local fishing guide. I've been a guide since 1985. I've got about 30-year-plus of going to these types of meetings and looking into studying our environment.

As for your proposal to start moving more water out of the system and exporting it south, our organization opposes that.

We want to see more water put into our rivers for our fish and our environment. No more water going to these corporate farmers that are just putting in orchards and types of agricultural that basically doesn't provide any jobs to us. They sell all their products overseas. They're not feeding America. So we're taking from our environment, these big, corporate people. We need to stop doing that. We need to look into that.

We need to start raising more fish in our hatcheries and start raising more fish in the hatcheries to rehabilitate our natural spawning salmon that we're losing and steelhead in the rivers.

Take all these considerations that I'm bringing to you today because our environment is collapsing due

to our overdelivery of the water system that we have.

We need more water for our environment to flow out to the ocean. The ocean needs fresh water along our coastline to restore the natural habitat along the coastline because that environment is collapsing too, and I haven't heard anybody talk about that. So we need to adjust that, address that. Very important.

Oppose, totally oppose more water going down to the Central Valley Project. Westland Farms has got you guys in their pocket. They're writing you guys checks. That's not right.

I was at a meeting -- I'm not going to say who with -- but when I was at the meeting, I was told when I asked how do we get more water for the fish, they told me to go talk to the farmers down south. That's ridiculous.

The decision needs to be made here on a government level, not the people writing checks to you guys. It's impossible for me to believe that. It's just incomprehensible they can dictate what happens to our environment. They're selling the food overseas, not feeding America. I don't agree with that.

***

ERIC CHISLER

Hello. Name is Eric Chisler, water protector, and I don't have a lot to say because there's been a lot of logistical concerns already raised, and most of them will be repeated tonight and most of them are true, and I stand behind them.

I especially stand behind the Winnemem Wintu Tribe and the salmon and all of the four-legged and winged and serpentine relatives that are being unconsidered in this project so that we can have a little bit more comfort and a little bit more cool and a little bit more grass in our front lawns.

And because I don't have a lot more logistical concerns to add to what's been said tonight, and I'll just echo what Mr. Brobeck said and what Caleen Sisk said, I'll say something else, maybe a consideration for you.

I stood in a field one year ago in the frozen north of North Dakota, and I'll stand next to Shasta Dam, and I'll stand next to whatever water tunnels you put in to destroy this environment. And there were 35,000 of us there, and there will be just as many here.

***

JACK KIELY

Jack Kiely, Oroville, California. Been around a long time. My father worked when Shasta Dam was relocating the railroad around there. I live up above Lake Oroville. I love to fish the two rivers.

So I'd like to say I have a water solution to you. It's a salinity control system that they proposed 20 years ago, and I have an article that I will share with you. It was in the Oroville Opportunity Bulletin. It covers the history of that.

But what I'm talking about is getting -- one-third to one-half of our water, fresh water, is done for salinity control, pushing the water back into the Bay, and that's a lot of water. If you're looking for more water, here's a big water source for you in the Bay. That's a salinity control system.

It's been used on the Rhine River over in Europe. They turned that whole river back into fresh water all the way back, going all the way through Europe, and this is very feasible to do.

You're looking at the Carquinez Straits. If you're not familiar with that, it's about an eight-mile stretch, about a third mile wide, 50 feet deep. Not near the problem they had on the Rhine River where they

had 12-, 15-foot tides to deal with. We have about a 5-foot tide.

So we can take all this, turn that whole Delta into fresh water. From one-third to one-half of the total water is a lot of water. We could help the fish. We can even send a little water down south. And this is a simple solution. It costs less than half of what these proposed tunnels will cost. So it's not the technology.

So we're looking at -- this is a big source of water. Why it hasn't been done -- 20 years ago this thing was put out. They built in Sausalito a prototype model of this, a thousand-to-one scale. It was all set. It was getting ready to test.

DWR, California DWR, killed the concept. They pulled their money out. The Corps of Engineers couldn't proceed with this. The model may still be there. I don't know. But it is something we need to get off the back burner and put out front to look at this thing, at least do a study.

What I would ask for tonight is for the Bureau to get with the Corps of Engineers and come up with this concept and pursue it. Because nobody trusts the Department of Water Resources in California. We live above Lake Oroville.

The only way I see this being done, and I hope this for my last pledge, is for you people to step forward, get this off the back burner, take a look at it. It's got the water. It's cost-effective. You can double your revenue for your selling of water out of this. It's a workable project. I've got several copies of this here I'm going to give you. It gives a more detailed concept.

But this is a concept. As to why it hasn't been done -- taking one-third to one-half of our water to push that saltwater out is a waste. That's where the water is. Go after it. Thank you.

***

JAMES DUNLAP

My name is James Dunlap, Yurok tribal member, former Yurok chair. What I'd like to see first and foremost is pretty much the dismantling and dissolution of the CVP. Okay? That's what I would really like to see. That's my ultimate -- would be the ultimate goal.

Since I'm probably not going to get a lot of support from that from the Bureau, I would like to see -- I know that back in the eighties the Trinity Lakes were decreased in their capacity for water storage. I believe that the BOR needs a more fluid approach to setting a cap on water storage. I'd also like to see Westlands Water prove that they have an emergency to get water rather than the tribes prove an emergency or a near disaster to get the water to the fish.

In the partial dismantling of the CVP, I'd like to see the incorporation -- what the gentleman just spoke about is the desalination. Start investing in some desalination plants. That's a whole new problem. Okay? This probably has culminated after 50 years of having the CVP and the environmental disasters that it has created.

These desalination plants in 40 or 50 years are

going to create another disaster, but, you know, where do we go, you know? We have some of the technology that will enable us to do that.

I'd like to see the enhanced restoration of the fishes, of the deltas, of all the rivers. My life along the Klamath River prior to the CVP, you counted fish in the millions. This last year we had an allocation of 600 fish for a 6,000-member tribe, 600 fish for a 6,000-member tribe, and we used to have millions.

I'd like to see the BOR start to require evaporation loss prevention for this water that is getting shipped down to these corporate farms. I know you don't have any regulation over what they're allowed to grow, but I'd also like to see the NEPA begin to address all the illegal marijuana grows in the Trinity-Humboldt County region that are siphoning off cold water, that are damaging the fish, that are dumping toxic chemicals, pesticides into the river. That has never been addressed. Because that's water that's being taken that's unallocated that we're losing. You're expecting it to be there, but it's not. Again, I'd like for you to first consider what the environment was and start from there prior to the CVP initiation. Thank you.

***

RAIN ALIZA SCHER

My name is Rain. I was also a water protector in North Dakota. I'm a local and a member of Stand Up for Radical Justice, Butte County, and I would like to start by acknowledging that we are having this meeting on occupied Mechoopda territory, and primarily the first folks that you should be listening to are tribal folks.

On your own agenda it says, "Speakers will be called in the order in which speaker cards are submitted with the exception of elected or tribal officials, who will be called first." And there's been a couple tribal folks who did not -- who just spoke, and Chief Sisk, who didn't get to speak first. I just want to point that out.

I would like to say that I stand with opposing the Shasta Dam raise, opposing the Sites Reservoir, opposing increase in Delta water exports. I support watershed restoration, phasing out of unsustainable desert agriculture in Southern California.

There needs to be more groundwater monitoring, and there needs to be better support for the return of the salmon, particularly under the leadership of the Winnemem Wintu and Chief Sisk.

We need to be looking at the big picture here.

This isn't just about today or next year. This is about long-term sustainability. This is about the next seven generations and the reality that we've been doing things wrong for a long time, and the right thing to do isn't just to keep doing things the way we've been doing them or make them worse. The right thing to do is admit that we've been doing things wrong, and we need to change that.

The droughts -- the long-term drought that we've been dealing with is very real, and during the really tight part of the drought a couple years ago, the State of California was saying that they were going to restrict the water that individuals used to water their lawns, and while I don't support keeping lawns alive in the face of drought, what we really need to be doing is paying attention to the industry and agricultural who are the biggest users of water, and the unsustainable agricultural that, as has been mentioned, is being shipped not just out of state, but out of the country.

This doesn't serve any of the people of the California. This doesn't serve any of the people of Butte County. This doesn't serve anyone here except for the people who are in charge of those corporate interests.

So we need to change that before we send them

any more water. We need to stop sending water out of Northern California. We need the water here. The salmon need the water. All the animals need the water. That needs to be first and foremost.

And there are people who are willing to stand in the way of these projects because they cannot happen. It will be the end of us, and we need to listen to the voices of the first peoples here because they know what they're talking about. Thank you.

***

CHRIS NELSON

My name is Chris Nelson. I represent Riparian Farm, LLC. We are a small organic farm in south Chico.

During the drought three years ago, we almost lost both of our water wells. They went really low. And what I'm concerned about is global climate change, that we're drawing down our Tuscan Aquifer, and we're not allowing recharge.

Sierra Pacific Industries is sequentially logging off 2.2 million acres in clear-cut logging, which is destroying the upper reaches of the watershed, which is -- it's the forest and also those logging roads, and so the water -- the runoff is faster.

There's so many uses right now -- or abuses, rather, that I feel like the whole thing about -- when you're talking about greater flexibility and efficiency, it's just another way for crook speech.

What we need now is a comprehensive way of looking at water, the water use, and not repeating the mistakes of the past with more dams, you know. No centennial dam sites, reservoir, raising Shasta Dam. Those are all the wrong direction to go.

We need to slow down, back up. Make sure that the groundwater is being monitored, and that there is

fairness and justice for all people, especially for indigenous people who are trying to get their lands back, their salmon runs back.

I think that's where we should be focusing our attention, and we should stop farming in the deserts in Southern California. We should not be exploiting the future for the profits of the Westland Water District.

You know, if you want to do something, I think the 30 percent evaporation in the Central Valley Project, I mean, you could use the money that Trump wants to spend on the border wall and put that money to good use in terms of covering some of those waterways so that the water that does need to go south could not be evaporating up. Just some logical things.

Anyway, I don't need to use my last minute. Thank you very much for coming up here. We do appreciate it. But we're totally opposed to any more of our water going south. Thank you.

***

TRICIA PARKINSON CONWAY

I want to thank you folks for taking the time to come here to our town.

Okay. So my name is Tricia Parkinson Conway. And I request more groundwater monitoring. I oppose selling more water to the Central Valley project. I request studies be started for desalinization plants of water that we already sold you.

So my history -- I wanted to come and speak up, especially for the fish today. So I grew up on the river. I have a small fisheries consulting business, Tricia Parkinson Conway and Associates. And I grew up counting fish with my father, Douglas Parkinson and Associates, who is actually a Chico native, and so I grew up explaining to everybody I ever met what electro-fishing is. Very gentle process.

And also, I'm an expert snorkeler. So for everybody who wants to talk about the fish, when do you get to see the fish? And so I just wanted to come and just let you know that I've been in the rivers. I've had my snorkel on from the Klamath River to the McCloud River and Mount Shasta, and my first job out of high school was I was one of the snorkelers on the Upper Sacramento River and every exit off that river, you

know, we've been there and hiked lots of railroad tracks to get to the spots.

But, people, the fish -- I mean, put your poles down and put your snorkels on and go and look because the fish are not there, and it's really, really sad.

I recently -- I was on the San Joaquin. I go down to the -- actually, I've been on the Kern, Bakersfield, and it's just -- it's the squaw fish -- pardon me. Excuse me. Pardon me. I apologize.

The pike minnow, the pike minnow are voracious, and they're eating the trout and the steelhead and everything in there. So we've got a real problem on our hands, and I request that more studies be put towards the fish and monitoring the fisheries, and just I wanted to come and speak up for the fish, is what my heart was telling me to come and do tonight.

So I appreciate seeing everybody, and please do tell everybody, you know, about writing in the comments.

And also, I just wanted to share a couple personal stories, which are -- I just came back to Chico five years ago from spending some time in the Central Valley, which, let me tell you, people, we have it really good up here. Okay? You don't want to live close to Fresno because the chemicals in the water are making the people crazy one glass at a time. They're

going crazy, and I'm not kidding you.

Like I had to come back here, because I knew Nor Cal, we have the water. We have happy, healthy people, and, as you know, those are the hardest to control as well. So I just want to let you know. So, please, do everything we can.

So I jumped down to Fresno, pardon me for a second, but when I first came back to town, I met a doctor, and she said, oh, welcome to Chico. Get out as soon as you can. My doctor told me this. Because she said there's so many chemies -- excuse me -- there's so many chemicals here, and I was just heartbroken because I -- you know, here I was so happy to come back to the homeland, and my own doctor tells me to get out of town because you're surrounded by chemicals and save your family and leave.

So I'm not going to leave. I'm staying to help fend. But I just wanted to share that. So, but, yeah, we have it really good up here, so let's do everything we can to keep it.

Thank you very much for your time.

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WILMA KIRK

I'm Wilma Kirk from around Oroville. I didn't even know about this meeting until like a couple minutes beforehand, and I have already like way more comments sent to me on the paper.

It is the government responsibility. We vote California to protect us and our right to live healthy, and water is one of the most important things of that. So it is every resident's right to clean, safe water, and if we want to -- sorry -- if we want to continue to have clean, safe water and enough water, we cannot keep using water at a rate faster than nature supplies it.

Also, then the practices of the use of the water, if it is returned into the public water, it needs to be clean, and there needs to be more safeguards to make sure that that water is clean.

I think that people's individual rights to have water should be first and foremost before companies getting business practices that might not necessarily protect the residents.

I think that's pretty much it. The rest will be emailed. Thank you.

***

MATT BROWN

Thank you for being here. My name is Matt Brown. I'm a local landowner in Butte County, and I have some concerns about the scope of the -- the purpose and need of this project because it's really focused primarily on maximizing water deliveries and optimizing power.

It doesn't really talk about other project purposes, such as fish and wildlife. Fish and wildlife have an equal project purpose to that of irrigation and a higher purpose than power generation, and it seems like the fish and wildlife, not just the endangered fish, but all the other critters out there, are being short-shrifted in this -- at least in the scope of this EIS/EIR.

This seems like a real shift in policy for Reclamation. It doesn't seem like how the trajectory of this LTO project was moving before just recently.

So I'd ask that you kind of relook at why we're going down a different, faster track that doesn't include a lot of the concerns the people here have already talked about.

I guess I also wanted to mention what my concerns are. I wanted to make sure that this effort

protects endangered species, the environment. Also, area of origin of the water, the Trinity River, the groundwater basins around here, the San Joaquin River, the Delta farmers who are being exchanged for other water users down further south and also the flood risk.

Some of the changes in the operation to increase water storage could increase the amount of water that's being stored in reservoirs and therefore put us more at risk. I think that's something local people here are a little concerned about, especially after Oroville last year.

I'd really like to encourage other methods of creating water, such as conservation and recycling, rather than increasing storage, surface water storage, and making sure once again that we would protect our groundwater.

I'm also concerned that you tell the public really soon what the timeline is for this project. It seems like it's on a fast-track, and people need to know what the real purpose and need of the project is.

Clearly, it's really hard to have a meeting like this where nobody in the room really knows what the project is. You can't really comment on it. I think I'll end with that. Thank you for your time.

***

NORA TODENHAGEN

My name is Nora Todenhagen, and I happen to be married to a linguist, so I'd like to talk a little bit about language here.

Let's look at the word "revisions." Now, it's a very scary word, particularly when you're talking about water projects which impinge on us in dangerous ways anyway.

So if your revisions are on water projects, and the only thing that I've been able to glean about this project is that it is to increase water deliveries south of the Delta, hello, this is something that would scare almost everybody in this room, because where is that water coming from?

Well, a good portion of it will come from Butte County because it already does. So since you cannot make water, how are you going to get more water?

Now, we know there's all that paper water floating around, but that doesn't really go through the Delta very well. It just doesn't work. So those of us who sit on wells are thinking, oh, my. Are they going there, or are they going to attack those people that have been mentioned already today, the tribes, for example, or more dead fish? Where is it going to come

from? It's not going to come from the Sites Reservoir. We know that.

So if somebody in this project could be clear about how revisions are going to produce water, I think all of us would be a lot happier.

Thank you very much.

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KATHLEEN FAITH

I'm Kathleen Faith. Everybody has spoken very specifically and very clearly, and I really appreciate everybody getting up here and speaking, and I do appreciate you coming because I wouldn't want to be you in this room, although you're supposed to be on our side. I believe we pay your salary. I'm not sure, but don't we -- if you're a government -- yeah, I think so.

So that you're so linked up with the Westlands just makes me crazy to think about. It's like I want to be really nice up here because I want you to go in and go, these people make a lot of sense. I'm going to write these things down. This has got to happen.

We have to protect the north state as much as feed the south state, but I just feel like in some ways we're in a battle here, and I don't want to be in a battle with you, but it feels like we are, because I don't really believe that you're going to write this down and you're actually going to pay attention.

There's some great ideas here, and we really want you to pay attention, and we will be watching to make sure you're paying attention.

So let me just see if I have something nice to

say. Well, one is I don't know if you believe in the climate change, but there's climate change, and we're in a crisis. The whole state is in crisis, and to think that you're linked up with yet more crisis for us and that you're not on the side of the people is just like -- it's unconscionable.

So really, step over. Step over the money. Step over the alignment with Westlands and join what we need to do to really protect our state. We'd love to have you.

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LAUREL PAULSON-PIERCE

I'm so glad that we have our representatives from the Bureau, which is about reclaiming water. We like that. And I'm glad that so many local folks are here that stressed their concern about our north state water and what we hope to have the priorities be for it.

I believe it's important to monitor and preserve both the surface water and the groundwater resources -- oh, did I say my name is Laurel Paulson Pierce? Okay -- to remain available first and foremost for the local area where the water originates in our north state.

The wildlife, the power generation, the domestic and municipal use as well as agricultural uses, we need to focus on wise use and reuse of the water to learn how to reclaim the water and use it multiple times and make the best use of it that we can.

It's important that it keeps from being usurped and abused, especially by commercial interests such as businesses that bottle the water, and then the water is not available for local people to use because it's been put in containers and shipped off to sell in plastic, which is not a good idea to begin with.

We also need to consider the sanctity of the

wetlands and how they act as a filter to help preserve the quality of the water that does exist.

As a local resident of the Concow area, we have found experience with our local reservoir where at one point the amount of water was assumed to be much larger than it actually was because there wasn't taken into consideration the sediment that had actually reduced the water.

So I'm sure with all the dams holding back all the water and the sediment, it has made the usable portion of water possibly be not the amount that you assume that is available. So that needs to be taken into consideration.

So we had experienced that and also experienced that our local reservoir was also making deals with the devil and selling water to be used down south when it should have been retained for local wildlife and people in the local area, and we've seen that happen realistically right in our backyard.

I'm really concerned that there don't seem to be local, state or national elected officials that are expressing their interest in this topic, and it really is a lack that we don't have the presence of any of our folks who supposedly represent us here to participate in this decision.

And I appreciate that this meeting was eventually scheduled to give the people in the north state the opportunity to participate in this because at one point no meetings north of Sacramento were even planned.

So thank you for coming and thank you for listening.

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DAN EVERHART

My name is Dan Everhart. I'm a concerned citizen, and this is an ongoing process where developers, people like to make money off the water by some activity downstream, get all the water they can from upstream. Look at what's happened with the Colorado River. Look at what's happened with the Ogallala Aquifer. It's being used up, and so you want to take the water from here to support activities elsewhere, and that's unsustainable.

What happens when there's just not enough water left to support the folks here? We live in a system that requires infinite economic growth. Infinite economic growth in any finite system is unsupportable, and what we're trying to do here is somehow prolong the growth that will eventually collapse entirely, and I say that we have to figure out how to live within the constraints of our environment. I mean, it's just that simple. We can use technological means to extend life and farming into great deserts, but we're going to pay for that eventually. Unfortunately, maybe it would be fair if it was us paying for it. It's going to be our grandchildren paying for it. So just rethink that stuff, would you? Thank you.

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K. POWELL

My name is K. Powell. I'm nervous as heck, I'll tell you that much. Mostly fear of retaliation from local authorities.

In 2014 we started complaining about the agricultural spray. We live -- they took out the orchard in between us and Comanche Creek.

The apartments on the other side of Comanche Creek, there's one orchard between us and Chico State farm. Our property -- we have a scare we won't eat from them. I had to move away from there because of the effects on me.

They started using a chemical methylbromide in California in 1989 at Sacramento Valley Mill when I was working there and got poisoned by methylbromide. I was there because OSHA was called on the people. I was up fixing the auger up high in the air and watched them load trucks with chemicals and take them to Sacramento and dump them, Sacramento River right there and dump them in the river.

I called the Environmental Protection Agency and he says, oh, is that the place they had the dust-collective system hooked up backwards and it was causing a traffic hazard? And the Environmental

Protection Agency guy was complaining about that.

Well, I don't want to go through my whole life with you, but I started having seizures again in 2006 when they legalized that chemical. California got an emergency use chemical. That's what's wrong with me. I built the test system for the space shuttle motor. Okay.

Chico State gets $47,000. The president was bragging at a meeting at lunch about the money they're raising. Okay? They get paid for -- they're going to feed the walnut hulls with all these chemicals that are giving -- that are causing these problems.

Well, they changed the setback to 25 feet here in Butte County. They've legalized spraying my mother and her home. The farmer stood almost in front of the city councilman's house that he used to live in across an empty field and said we get to spray 300 feet on this side, on the other side of the creek.

Now, I hope that you are not using some California university that's getting paid money for any kind of your deals. And anybody who wants, I'd love to talk to you guys.

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LUCAS ROSSMERZ

Lucas RossMerz. I am the executive director of the Sacramento River Preservation Trust. We've been doing this for 34 years.

I'm also missing a meeting tonight for the Sustainability Task Force Commission, which I've been on for the City of Chico for five years, but I thought this was regionally way more important.

Thank you, AquAlliance, all the members, all the citizens that got this meeting up here. Wonderful show of community support.

I heard in the introduction, which I thought was the best overview, by the way, that I've seen at a public meeting in a long time.

But in the introduction, they said this was the beginning. It was the infant stages of this long, programmatic scoping process.

This project has been getting worked on since '45, 1945, and we've gone through CVPIA, the Central Valley Project Improvement Act, where we argued over fish. We've gone through CALFED. We've bought water for fish. We now have the Sustainable Groundwater Management Act that's going to take another 10 to 20 years to figure out.

We've got the Bay-Delta Water Quality Control Plan, which needs to be included in this analysis. We've got the new Proposition 1, storage funding, which the California Water Commission just came out and said does not have public benefit. Public benefit, that's what we're talking about.

There's three main things I want to make sure I get out. We don't have any more environment to take from. We started the Trust in 1984 with 2 percent of our riparian habitat left along the Sacramento River. 2 percent in 1984.

We've had a couple of wins. We had the Sacramento River National Wildlife Refuge, which actually, if you want to partner with them, they need some more property. They have up to, I think, five more parcels they can get along the main stem of the Sacramento River, which may be really important to try to get some property there for them.

And I want to make sure you know that floodplains are storage. Floodplains equal storage. That's the future. Floodplains of tributaries. Floodplains of the main stem. Floodplains in wetlands. Right?

We're now growing food for fish on flooded rice fields. They call them fat, happy fish on floodplains

because our river is a desert of food. It's too cold to actually have food for the small fish. So now we're flooding rice fields to grow food for fish and then flooding that all out as fast as we can to get it to the main stem of the Sac so the little fish can actually eat something in that cold desert. It's a nutrient desert for these small fish.

And, thirdly, when does the agricultural side of this conversation have to give some back? Permanent perennial planting, it's going to plant us into basically having no malleable mosaic for our year. Father Winter doesn't ever pick up our calls. We're always going to have a dynamic rainfall portfolio.

Floodplains are storage. Ag has to give a little. We don't have any more to give. Our fish are almost gone. And that's the keystone species. Salmon are identified as a keystone species. They are literally -- if we don't have salmon, change the name of the river. It's not the same place.

So benefit, bottom-up river ecology, fish first. Farms can go second for once. Thank you.

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TODD GREENE

Thank you. I'm Todd Greene. I teach geology here on campus, and I just wanted to basically say that I'm humbled to be around such passionate and informed citizens, and I'm very, very confused about what this is all about.

This appears to be -- this is a programmatic change, but it's hard to imagine what the details are in this programmatic change, and it's hard to comment on something that isn't specific.

When there's a specific idea on how to address something, then it would be appropriate to comment on. To comment on a programmatic change seems odd. I don't know what that's about. It seems like there's something else that you already have decided, and then perhaps then we can comment on. So I'm just confused about what this is all about.

I'm also -- I looked at the Notice of Intent to try to help my confusion, and it says, number one, maximize deliveries, and everything -- this has been commented on before, but the maximize deliveries -- you know, I believe in the conservation of mass.

If there -- you have -- water has a certain amount, and to try to imagine more of that water,

delivering a certain amount to another place, just doesn't make sense to me. You're basically asking for more water where it's not there.

And if we're going to maximize deliveries, that means asking for more water, and then you say, well, we're relying very heavily on climate because that's where the more water is going to come from, is climate, and if you have wet years, maybe that's where the more water is going to come from.

Well, I also believe in climate change. I'm a geologist, and I know climate change is real, and the name of the game today is extremes. So if you have extremes, that is something that has to go in this programmatic change, is plan for extremes, because the last hundred years are not the normal.

I would also say you have bigger problems than maximizing deliveries, and your biggest -- I would say one of your biggest problems is your aging infrastructure, and we know this from, obviously, the spillway, but we have subsidence. We have levees and canals that are affected. This is a huge problem I believe that needs to be addressed in this programmatic change.

In the spirit of Floyd Dominy, Bureau of Rec, he said any water that is not controlled is wasted

water, and I think some of that -- those ideas still exist in the Bureau of Rec where water is not wasted. It has a purpose. It has a purpose for cleaning out channels, for nourishing bars, for flooding, and flooding is a good thing if you can set back existing levees. Flooding does good for storage, especially on big rivers like Sac River.

So there's lots of ideas that are out there that I think the Bureau needs to be aware of. There's great research on this. River Partners is doing excellent work, looking at the benefits of flooding -- of setting back levees, and, of course, growers would need to be compensated for losing some of their acreage, but there's excellent research going on, and I would hope that you look to them and other research agencies that are doing those kinds of studies.

And, finally, if extra water, that mass, is coming from aquifers, the Tuscan and the Lower Tuscan, well, I'm a geologist. I study the lower Tuscan, and I wouldn't go there. It's not the answer to anybody's questions to try to get more water to fill that conservation mass with Lower Tuscan water. It's not there in the quantity and it's not there in the flows that some people may think. So thank you.

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RICK SNITZER

Hi. Good evening. Years ago, many, many years ago, I studied water biology, and I've always cared about it. I was born in California. I've been on the rivers in California for almost 70 years.

I was very concerned when I saw the intent of -- and the thrust of where this discussion was intended to go. I was very concerned when I saw that the first bullet point was a maximization of whatever else can be drained from the system.

The next point basically was increasing efficiency. There's another way to look at that, and that's how much harder can you twist the sponge that's already quite dry.

I question the premise of what you are doing because I think it is fundamentally repeating and continuing the same mistakes that a desert can somehow be tamed and that water is infinite.

The people to whom you report, someone should carry the message to them that we're all out. It's done. Four out of the last five years are the driest in record. That's not changing anytime soon. It's becoming more intensely shifting as it changes back and forth, so you're going to have to take account for the

magnitude of changes.

But the simple fact remains, it's finite, and you people do not seem to be familiar with the concept. You're going to have to do things completely different because water doesn't multiply, and it does have to flow. Contrary to what the president says, movement of the water creates its effects that the entire system relies upon.

For 200,000 years there have been tons and tons and tons of fertilizer swimming upstream. 200,000 years or more. Where is that fertilizer going to come from if the salmon don't exist?

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MAT BACIOR

Greetings. My name is Mat Bacior.

I'm really impressed with some of the speakers ahead of me. I'm glad to hear what they had to say. Basically, you know, got to a lot of the things I wanted to talk about before me, which is great, but I will touch on a few things that maybe were not or just emphasize them.

I am fortunate enough to actually have a degree in hydrology from this institution we have this very meeting in tonight, which is fortunate.

I know we're here for the Bureau of Reclamation's meeting about the water situation, but really we're here because of a decision William Mulholland made about a hundred years in the State of California. I know I'm probably preaching to the choir here, but if you have not read the Cadillac Desert or at the very least seen the movie, I highly recommend it. Very educational.

The requests of Southern California -- I'll just straight out say it is Southern California requesting this -- over the years have been systemically negative for our communities and our state.

They negatively impact us by -- in times of

drought. We pay higher prices for water that's already ours. They impact us with less availability of that water supply. They impact us because they take away the water from the Delta, from our fish, which eventually impacts our environment that way as well.

Additionally, and something more important to me, or at least something I want to bring up that I didn't hear mentioned as much, is the impact that -- the environmental impact on the ground that we stand on.

When we pump our wells, there's irreversible subsidence that occurs, and I know that's glossed over constantly, but you look that up. There's parts of the San Joaquin Valley that are 30, 40 feet lower than they were a hundred years ago. I don't even know that that's taken into account when we look at groundwater measurements because those are usually below ground surface. So when you're talking, you know, you well is 40 feet down, or is it now 80 feet down because of the groundwater dropping?

I'd like to close with a quote from our now retired DWR Director William Croyle. In 2014 he stated:

> "The rates of San Joaquin Valley subsidence documented since 2014 by NASA are troubling and unsustainable. Subsidence has long plagued certain regions of California, but the current

rates jeopardize infrastructure serving millions of people. Groundwater pumping now puts at risk the very system that brings water to the San Joaquin Valley. The situation is untenable."

Thank you.

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JULIE HARRIS

So people call it the decision or the premise or the purpose being water to go from here to the south. That's not particularly my objection.

I am from here -- I mean, I'm from the San Francisco Bay area, but I've been up here for the last eight years.

My concern is for people everywhere and wildlife everywhere and the environment everywhere. And no explanation has been given clearly as to why the water has to go from here to there, and my understanding is that the water has to go from here to there -- I don't hear about what I hear -- what I heard a couple years ago about people in the Central Valley running out of their well water and not having any water at all coming into their homes and water having to be delivered.

I hear about farmers planting more and more almond trees in the desert, and that for one desert (sic) it takes between one and one and a half gallons of water for each almond that we eat. We have nothing -- I mean, almond groves have taken over the state, both north and south.

So my question is, are we looking at long

range, the premise being how do we support big ag, or are we looking at the premise should be, how do we for the future have water for everybody, given what previous speakers have already stated about climate change, about the last four out of five years water becoming more and more scarce?

I heard on the radio over here today, Cape Town in South Africa has just been the first major city on the planet that has run out of water completely. Okay.

So when does the federal government, when does the state government start looking at ways to help the state, the nation, the world survive, you know, instead of looking at how do we further figure out ways to subsidize big ag?

And, you know, Brown -- it's not just the tunnel idea. It's the idea that he will not take a stand against fracking, which is also poisoning what little water we have left.

So it's just beyond me that my tax money pays to figure out ways to further support big ag when we're already subsidizing big ag in other ways. It's just insane.

***

SARA LEE

Hi. My name is Sara Lee. I'm a relatively recent transplant to Chico, and I hold a master's degree in integrative water resource management.

So I'm going to applaud the organizers for doing such a great job at making it possible for different stakeholders to come and share our perspective. That's one of the basic premises of Integrative Water Resource Management, or IWRM.

My comments really echo a lot of the person just before me. In the midst of our recent drought, which is the worst in California history, farmers converted from less water-intensive crops to more water-intensive crops and permanent crops, almonds.

Farmers wouldn't make these long-term investments in water-thirsty crops if they thought water was scarce or if they were reacting to proper price signals because price signals scarcity in value.

So until that's aligned and irrigation water prices reflect the scarcity of water in California, I don't think we should be talking about increasing water transfers south or to agriculture.

They're one important stakeholder for sure, and the interests that have been expressed here are also

very important equal stakeholders that shouldn't be ignored or swept under the rug.

So I just want to support basically everyone else who spoke tonight. Thanks.

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MICHELLE WURLITZER (MOSS)

Hi, everyone. I go by Moss. I felt a calling to come up and speak. I am very nervous. But when I closed my eyes and was imagining this land and this water, it felt important to come up and speak from a more tender place.

When I think about all the transferring of water that is being pushed through, I don't feel angry so much as sad, and I just wanted to speak to that, and this is something that I need to do more in my life.

But I wonder what would happen if -- how would we feel and how we would make decisions if we sat with the water and imagined that this water has a spirit and has a will of its own and seeing it as important in its own right and all the creatures of the land, all the trees, what would this land want for itself, what would this water want for itself.

And I would like to just thank water for giving us life, and I would just like to ask that we make decisions from the heart and with a greater wisdom and perspective and remember our place in life.

Thank you.

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DEBRA LUCERO

So I came here tonight -- my name is Debra Lucero, and I really came here to learn and to listen because I know there are people here that are far more schooled in water issues, but I too am alarmed that we don't have representatives here that represent us in the north state. We need to start thinking about that. We need people here that are representing us.

I'm concerned that this meeting will turn into check off the box, we had a public hearing. Then they're going to go to the next place, check off the box, we had another public hearing. Check off the box, we had another public hearing. And we need more than that, and the people in this room have the power to demand more than that.

So I'm just hoping that you leave this room empowered, and you don't leave without thinking I'm going to tell ten other people what happened here tonight. I'm going to bring ten other people here or get them to comment on the site because this isn't over, and we need our voices to be heard. So please speak up, because we are -- we, the people, we are making up the government here.

So thank you for coming, and I encourage

anybody else to get up here and say what you need to say because this is your time. Thank you.

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SCOTT HUBER

Good evening. My name is Scott Huber. I appreciate that you guys are taking notes. Thank you very much for that.

So if you drive down I-5, I used to go down there quite often and see my mother in Los Angeles, you see signs by the road that say "Congress Created Dust Bowl," which always makes me laugh because the southern San Joaquin actually is a dust bowl. It was intended by nature to be a dust bowl.

And what has happened over the years is they've taken our water, as many more have pointed out, so that they could plant permanent crops such as almond trees, and they've conveniently let them die by the side of the road so you can look at the skeletons of these trees and feel guilty for just allowing the valley to return to what it ought to be, which is a desert.

Once upon a time in the North Valley, before we had these large irrigation systems, we grew dry-land wheat because we didn't have a way to get water to all these fields.

What they ought to be doing in the Southern San Joaquin is growing dry-land wheat, growing appropriate crops for where they are.

So what I'd love for you to put in your notes is that this group -- I'm pretty sure I speak for most of the people here -- are unwilling to give up things like salmon and smelt so that farmers in the Southern San Joaquin can profit.

That's all I have to say.

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KYLE DeJULIO

Hello. My name is Kyle DeJuilio. I'm a fisheries biologist for the Yurok Tribe on the Klamath River. I work extensively in the Trinity.

And in regards to the efforts to maximize water supply and delivery, I ask you to consider the following:

Since the implementation of the CVP and SWP, we have seen huge declines of tribal and public trust species, which provide food and economic opportunity to tribal river and coastal communities.

The Klamath and Sacramento Rivers were home to the third and second largest salmon runs on the West Coast of the Continental United States.

In your efforts, you must address the unsustainable demand. It's the other side of supply. Oftentimes in human systems, demand drives supply; however, in natural systems, supply is inherently limiting.

Even with the impressive alterations of the Central Valley Project and the State Water Project to the natural system, supply is still limiting in the lean times of drought.

With continued declines of trust species,

exploration of efficiency and reducing demand is a more prudent and practical use of resources.

During the process, I ask you do not pit one basin against another. Water which falls in one basin should be used to fully meet the need of the trust species from that basin prior to any diversions.

Rainwater storage, water reclamation and reducing demand are where you should focus your efforts. Work with the US Forest Service to prioritize water yield.

Flooding is good, as I heard mentioned. In the next 30 years, I expect the suppressed disturbance of flooding to take the like of the suppressed fire disturbance we've seen on public land. These systems are evolved to live with and work with the disturbance cycle. We've suppressed these disturbances for so long, that suppresses production. That suppresses production.

So please take that into consideration. Thank you for your time.

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SANDRA LEWIS

Hi. I'm Sandra Lewis. My folks bought in Butte Creek Canyon in 1963, and I am kind of appalled.

I haven't been paying attention to the situation, and I really appreciate the education I've gotten tonight from all the speakers.

But I remember, we used to ride our horses down to Butte Creek in the spring, and the banks would be covered with spawned salmon. And I think about it now, and I haven't been paying attention. I've been gardening and living a life and all of that, but I don't see salmon on the banks. And someone mentioned fertility. That's a big issue. Those fish provide fertility.

And I've been more paying attention to oil and oil money out, and I think only one person this evening mentioned fracking. I don't know how much of our water is being used for fracking, but I know they're pumping it into the ground, and it's poison. They're putting it on our crops. And they call it clean, but it's not. We've got to get them to quit poisoning our water. We can't keep providing clean waters so that they can poison it down south.

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HE-LO RAMIREZ

All right. My name is He-Lo Ramirez, and I'm a Chico native really. I'm Mechoopda. So I have a long historic tie to this land. But besides tribal affiliation, I am an avid hunter. I'm an avid fisherman.

And I heard mention of the Butte Creek salmon. Now, not only that, but our Big Chico Creek watershed used to have tons of salmon, and I don't know how many people have been by the One Mile, but our puny little salmon fish ladder there, it's been forever since I've actually seen a salmon use that.

So I just -- and then another thing, a lot of people have been talking about salmon goals. Tone that down. I don't think I've heard the Delta smelt, though, being talked about, and I have a little note that I was able to text myself. I know, millennials and their technology.

But it's a quote from James White from the California Department of Fish and Wildlife, and he said that only two Delta smelt were collected at the Delta index stations in October. Two. And they're an indicator species.

So if our -- if our ecosystems aren't able to

support the smelt, then our salmon, our sturgeon, those are going to go down too, and I would like to say that I would hope that whatever plan is made takes into account the Delta smelt, along with the salmon too, and all the other fish and species.

And from a human side, I know a lot of residents in Butte county have their own private wells. In the last ten years, a lot of them have been going dry. And if we're not going to take it from the rivers and we're going to take it from the ground, then we're going to have more residents who don't have water, and that is an issue.

And then, lastly, I'd like to say that I'm disappointed that I don't see any representatives here, and I know Doug LaMalfa -- I'm going to single him out -- he's coming this weekend. Tomorrow, yeah. So he's going to come and do a publicity stunt in Chico tomorrow. He couldn't make it here, and he has said he is for our north state water, but I don't see him here. I don't see him here.

And that's all. Thank you.

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KATRINA DJBEROF

Hi. My name is Katrina. I'm just coming here at the end. I just got out of class. I snuck into the back. My heart is racing these last few minutes. We -- I'm just going to take a couple breaths.

The Endangered Species Act, everything that we do is to serve the species that are threatened or endangered. Both fish, the smelt and the salmon, on the endangered list, close to extinction.

Everything that we -- all of the decisions that we make should be in service to those species that are part of a greater whole system that supports us.

I came in late, so I didn't hear all of the voices and the hearts that came before me, but thank you for your words.

And the other thing I want to say is the Mono Lake basin, we have a huge example of what's happened before in the Mono Lake basin with the water pumps out to LA, how huge the environmental impact has had on the Eastern Sierra, on the people of that area. We now have a massive, huge, toxic Superfund site that's managed. Insanity.

After learning what happened there and to the people -- it's not my story to tell -- something of this

scope I can't let happen again. And I'm a citizen. I'm not a specialist.

But my -- I'm showing up to use my voice and to come forward and to be courageous and request that we -- that you choose the most upright conduct that you can to be in service to the whole and to the people who are the voices of the salmon and the water.

I'm standing up here to use my voice, to use my privilege to what I have to give voice to the land and the waters and those who speak for the beings on this planet.

So thank you, everyone. Thank you for organizing, Katrina.

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BRUCE SMITH

Bruce Smith. I came back to school a number of years ago to study hydro-geology. Was very interested in groundwater. Learned how to build a groundwater model. I got out of that, kind of, and started looking at how people think and make decisions, and what's really fascinating to me is how you can have a problem in your life and ignore it completely and just continue with the problem.

When I read this and I think of revisions to the coordinated long-term operation of the Central Valley Project and State Water Project and related facilities.

Now I'm sure everybody in here -- I do. I have a picture. I have it in my room -- of Oroville Dam, a disaster. To me, that's the poster child of the Central Valley Project and the State Water Project.

It's just that -- and having studied groundwater, you can't see the disaster as groundwater, but you can see Oroville Dam. You guys need to look at Oroville Dam. Take a look at your project, and say we have got to, what Todd said, deal with infrastructure. You've ignored it. It's going to take you out.

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JEANNE ERTLE

My name is Jeanne Ertle, and I just wanted to say that it's about the West Valley farmers. They want more water, but actually they've been very prolific with their own water, and they've sunk their own ground because they used all their water up. And for the last few years and continuing, as I drive up and down the Valley, they are planting hungry almond orchards, one after another, acre after acre after acre. That is agri-business. Those are not farmers. And they have to have -- these have to be watered all year long. It's not going to add to annual crops. Drought or no drought, they have to be watered. They have to be told they can't do it. They should have to rip out those orchards. I'm sorry. They made a bad deal. They did the water thing, and they should have to rip them out.

Basically, the other thing I wanted to talk about was water bottling companies like Nestle's that doesn't necessary affect us right here, although at some point it could, but I know in other parts of California, and even in our, I think it was federal parks or whatever, they were bottling water. It's a terrible use of our water. We have good water to drink. It doesn't need to be taken from us. That's all I have to say.

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EMILY ALMA

I just want to say that I am deeply saddened that corporate interests and money interests are so predominant that all these people have to come together to speak for life, and what I feel has been said over and over and over again by people who know much more about the details of what this is about.

But we have -- our world has to change, our priorities have to change, and our country and our economy, it has to be based on life, and this is the time, and there's going to be thousands of us standing in the way. Millions.

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MARCIE LIGAMMARI

The Westlands agriculture hasn't yet resolved their issue with toxic drainage water. They need to solve that issue before we send them any more water.

The government should find a way to regulate the increased farming on desert land that doesn't have a sustainable water source. Thank you.

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HELENE SISK

I don't really understand what we're doing down south, but that they want more water delivery down south, and that is really taking water from my salmon, which is struggling right now to stay alive.

Like the Yurok Tribe, Hoopa Tribe, they don't have enough water in their rivers with the salmon over there, and a lot of algae is growing in the rivers, and the salmon are dying. And there used to be so much salmon over there, and now there's not.

And also, it's taking water from the Sacramento River. The salmon need water to go up that river too, and it just can't be so low that it's warm. It's hot water, and the salmon don't do well in warm water.

And another point I wanted to make is, I don't know if they're thinking about building the dam higher, but I'm thinking they want to do that for more water storage, but our tribe lives on the other side of the dam, and they already flooded like 26 miles of our river and sacred sites, burial sites, and what we have left we use all the time. We always go to the river.

And if they build the dam higher, it will take more of our sacred sites, and they're just flooding us out a second time. So I just oppose this.

I don't know -- they didn't explain what they're doing. They just said they want to take more water. I oppose whatever they're doing. Thank you.

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MICHAEL PRESTON

I feel like all the studies have already been presented thoroughly, and all the scientific data that's out there confirms that this is a bad project scientifically speaking, and to go against science is a bad idea. To go against hydrology studies is a bad idea. To go against the Endangered Species Act is a bad idea. Studies are out there that go against the environment. It's a horrible idea for the future generations.

Being a younger person, I wanted to say that on behalf of our generations, the kids and grandkids and those yet to be born, and the kids that are going to deal with the situation and the long-term effects of this.

And I also wanted to put on the record that there are people who have stood on behalf of the water already out at Standing Rock, and there will be more people out there who will be standing on behalf of the California issue. California is Standing Rock for Shasta Dam, Sites Reservoir and the twin tunnels that are out there for big water corporations to profit off of.

There will be people out there to stand in

front of that, and I want to put that on the record for the higher-ups out there. I think it goes under the table, unnoticed. This is already out there.

We're going to do the best we can to pull in as many water protectors that are out there locally, nationwide, national, international, to come out and make this a national issue if need be.

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ROBERT DRESDEN

I'm speaking to this process where we disbanded to go to the specific tables. It's chaotic. It does not work. And I understand that there's a protocol that we are following, and it doesn't work. And maybe that's a metaphor for something even much larger where things don't work, but we continue doing them because that's the way we do them. That's got to change.

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DIANE SUZUKI

I am complaining about the process. I would really like that to change because it broke up the whole meeting. We cannot hear each other. If we're addressing these officials, we can't even hear their responses. I mean, it feels very intentional. And we don't get to hear -- we're asking our questions, we don't hear the responses. It pisses me off. Thank you.

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SARAH SALISBURY

These are remarks about the -- not about the process, but about the results hopefully. No raising of Shasta Dam. No raising of Shasta Dam.

Also, do not even consider the possibility of draining this Tuscan Aquifer so that we can store water there for the future, water that doesn't exist yet. That would be insane.

And when we talk about endangered species, that's very important. And I think a couple of people said the humans who live here where the water originates are essentially endangered as well by the continuing sucking away of the life blood, which is what water is.

And then my last remark is water is sacred. Water is life. Thank you.

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JONAH PLATT

I am concerned about the biodiversity in California and ultimately the world. I see the earth as a whole organism, and I believe that the different parts within the organism have to be healthy for the entire world to be healthy. The different species, the different parts within it have to also be healthy.

So when we take an anthropocentric view, which is like humans first, it can be damaging to the species of the earth and the natural cycles of the earth, which may ultimately be the demise of human beings.

There have been countless mass extinctions of people, and many of those mass extinctions were due to taking more resources from the earth than it could provide, stretching past limits than what the earth could provide.

We have the opportunity to learn from history and what it might be trying to teach us. If we ignore the voices of the people here and the demands to support the local environments, then I believe we lose hope of having a healthy world and existence of our future generations, and it's inconsiderate to the action of this planet, including those who come after us.

Now is the breaking point. Will we change

course or will we continue on the same way that we've been doing and die off?

That's what I have to say.

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REPORTER'S CERTIFICATION

I, Coleen Dalton, Certified Shorthand Reporter, in and for the State of California, do hereby certify:

That the foregoing proceedings were taken before me at the time and place herein set forth; that the proceedings were reported stenographically by me and later transcribed into typewriting to the best of my ability; that the foregoing is a true record of the proceedings taken at that time.

IN WITNESS WHEREOF, I have subscribed my name: February 5, 2018.

Coleen Dalton, CSR No. 5755