1C.1.7 Cities of Folsom and Roseville and San Juan Water District

September 29, 2015

Mr. Ben Nelson
Bureau of Reclamation
801 I Street, Suite 140
Sacramento, CA 95814-2536

BY U.S. MAIL AND E-MAIL TO
bcnelson@usbr.gov

Re: Comments on Draft Environmental Impact Statement for the Coordinated Long-Term Operation of the Central Valley Project and State Water Project

Dear Mr. Nelson:

This letter presents comments by our agencies on the Bureau of Reclamation's Draft Environmental Impact Statement for the Coordinated Long-Term Operation of the Central Valley Project and State Water Project ("DEIS"). We incorporate the comments in the analysis prepared by Bartkiewicz, Kronick & Shanahan, P. C. (Attachment A) and the technical memorandum prepared by MBK Engineers (Attachment B). Folsom Roseville SJWD 1

As discussed in more detail in the attached comments, the DEIS should be revised and additional analysis should be conducted before Reclamation adopts a Final Environmental Impact Statement ("FEIS") for these actions. Folsom Roseville SJWD 2

We are also concerned that the DEIS shows significant impacts to Folsom Reservoir storage, which our region is dependent upon for our water needs. These impacts include reducing the probability that American River Region municipal and industrial contractors like our agencies will receive full allocations from the CVP from approximately 50 percent to 30 percent of all years, while increasing the probability we will receive only 50 percent allocations from approximately 5 percent to 10 percent of all years. The DEIS also shows reduced Folsom Reservoir carryover storage, which will increase the likelihood of extreme shortage conditions at Folsom Reservoir. Folsom Roseville SJWD 3

We look forward to your responses to these comments.

Very truly yours,

CITY OF FOLSOM

By: Marcus Yasutake
Marcus Yasutake
Environmental and Water Resources
Director

CITY OF ROSEVILLE

By: Richard D. Plecker
Richard Plecker
Director, Environmental Utilities

SAN JUAN WATER DISTRICT

By: Shauna
Shauna Lorance
General Manager

Encls.

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ATTACHMENT A

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BARTKIEWICZ, KRONICK & SHANAHAN

PAUL M. BARTKIEWICZ
RICHARD P. SHANAHAN
ALAN B. LILLY
RYAN S. BEZERRA
JOSHUA M. HOROWITZ
KATRINA C. GONZALES
ANDREW J. RAMOS

Of Counsel
STEPHEN A. KRONICK

A PROFESSIONAL CORPORATION
1011 TWENTY-SECOND STREET
SACRAMENTO, CALIFORNIA 95816-4907
TEL. (916) 446-4254
FAX (916) 446-4018
E-MAIL bks@bkslawfirm.com

September 29, 2015

Mr. Marcus Yasutake
Environmental and Water Resources Director
City of Folsom
50 Natoma Street
Folsom, CA 95630

Mr. Richard Plecker
Director, Environmental Utilities
City of Roseville
2005 Hilltop Circle
Roseville, CA 95747

Ms. Shauna Lorance
General Manager
San Juan Water District
9935 Auburn-Folsom Road
Granite Bay, CA 9574

Dear Mr. Yasutake, Mr. Plecker, and Ms. Lorance:

This letter presents the analysis prepared by Bartkiewicz, Kronick & Shanahan, P. C. to assist your agencies when commenting on the Draft Environmental Impact Statement for the Coordinated Long-Term Operation of the Central Valley Project and State Water Project ("DEIS") prepared by the Bureau of Reclamation ("Reclamation"). Folsom Roseville SJWD 4

As discussed further below, the DEIS requires revisions and additional analyses before Reclamation adopts a Final Environmental Impact Statement for these proposed actions. The DEIS incorrectly defines the No Action Alternative, which renders analysis in the DEIS incorrect and leads Reclamation to not propose required mitigation measures. The hydrologic analysis in the DEIS also does not account for the legal requirements that protect the American River Region and does not adequately analyze impacts to Folsom Reservoir from implementation of the proposed actions. Folsom Roseville SJWD 5 Folsom Roseville SJWD 6

1. The DEIS Incorrectly Defines the No Action Alternative and, As a Result, Does Not Comply with the Ninth Circuit's Direction to Reclamation to Prepare an EIS that Analyzes the Human and Environmental Costs of Implementing the Biological Opinions' Reasonable and Prudent Alternatives Folsom Roseville SJWD 7

Under the National Environmental Policy Act ("NEPA"), each federal agency must prepare a detailed environmental impact statement ("EIS") for any "major Federal action[] significantly affecting the quality of the human environment." (42 U.S.C. § 4332, subd. (2)(c).) The EIS must include "the alternative of no action." (40 C.F.R. § 1502.14(d); *American Rivers v. FERC* (9th Cir. 1999) 187 F.3d 1007, 1020.) The no action alternative represents the "status quo," defined as the continuation of existing policy and management direction without adoption

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of the proposed major Federal action. (*American Rivers*, *supra*, 187 F.3d at pp. 1020-1021.) The EIS also must explore and evaluate the proposed action and all reasonable alternatives, and include appropriate mitigation measures not already included in the proposed action or alternatives. (40 C.F.R. § 1502.14, subds. (a)-(c), (f).)

On November 13, 2009, Judge Oliver Wanger entered a memorandum decision, which determined that Reclamation violated NEPA by failing to conduct an environmental assessment or prepare an EIS before provisionally accepting the United States Fish and Wildlife Service's 2008 delta smelt biological opinion ("2008 USFWS BiOp") and its proposed Reasonable and Prudent Alternative ("RPA"). The Ninth Circuit affirmed Judge Wanger's decision on this issue, concluding that Reclamation's provisional adoption of the RPA in the 2008 USFWS BiOp was a major federal action because adoption of the RPA would effect a change in the "status quo" for operation of the state and federal projects. (*San Luis & Delta-Mendota Water Authority v. Jewell* (2014) 747 F.3d 581, 646.) Regarding the purpose of requiring Reclamation to prepare an EIS, the Ninth Circuit's decision emphasized that the EIS prepared by Reclamation must disclose the effects of adopting the RPAs:

> At this point, we can only speculate about what kind of significant effects will eventually result from implementation of the BiOp because Reclamation has not yet completed its EIS. But it is beyond dispute that Reclamation's implementation of the BiOp has important effects on human interaction with the natural environment. We know that millions of people and vast areas of some of America's most productive farmland will be impacted by Reclamation's actions. Those impacts were not the focus of the BiOp. In sum, we cannot reach an informed decision about the extent to which implementation of the BiOp is an environmental preservation action in the vein of *Douglas County* and *Drakes Bay Oyster* because we do not know how the action will impact the broader natural environment. We find no basis for exempting Reclamation from the EIS requirement. [Citation.] We recognize that the preparation of an EIS will not alter Reclamation's obligations under the ESA. *But the EIS may well inform Reclamation of the overall costs – including the human costs – of furthering the ESA*.

(*San Luis & Delta-Mendota Water Authority*, *supra*, 747 F.3d at 653 (italics added).)

Following these court orders, Reclamation prepared the DEIS. (DEIS, p. 1-9.) The DEIS states that its purpose is to "conduct a NEPA review to determine *whether the RPA actions cause a significant impact on the human environment*." (DEIS, p. 2-2 (italics added).) In the DEIS, however, Reclamation defined the baseline, "No Action Alternative" conditions to include the RPA actions described in the 2008 USFWS BiOp RPA and the 2009 National Marine Fisheries Service ("NMFS") salmonid biological opinion ("2009 NMFS BiOp") in 2030. (DEIS, pp. 3-21 to 3-22.) The DEIS states Reclamation did this because Reclamation provisionally accepted and implemented the RPAs in the 2008 USFWS BiOp and 2009 NMFS BiOp prior to preparation of

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the DEIS. (DEIS, p. 3-22.) The DEIS also includes a Second Basis of Comparison that does not include implementation of the RPAs. (*Ibid.*)

By defining the No Action Alternative to include the major federal action that the courts ordered Reclamation to analyze, Reclamation has not complied with NEPA or these court orders. As required by the Ninth Circuit's decision, the purpose of requiring Reclamation to prepare an EIS was to inform Reclamation of the human and environmental costs of significantly changing the status quo for the state and federal water projects by adopting the RPAs. (*San Luis & Delta-Mendota Water Authority*, *supra*, 747 F.3d at 653.) The DEIS does not meet this requirement because it *assumes* the RPAs are part of the status quo by defining the No Action Alternative to include them. This flaw affects the DEIS's analysis, because it assumes that the status quo includes incurring the significant human and environmental costs of implementing the RPAs, and then the DEIS proceeds to analyze the five alternatives against this assumption. This is the opposite of the analysis required by NEPA and ordered by the Ninth Circuit's decision.

The DEIS attempts to address this issue by including a "Second Basis of Comparison," which "represents a condition in 2030 without implementation of the 2008 USFWS BO and 2009 NMFS BO," and then by also comparing the other alternatives to this basis of comparison. (DEIS, p. 3-3.) However, this analytical approach does not satisfy the Ninth Circuit's decision, because the DEIS does not describe the incremental changes from the Second Basis of Comparison to the alternatives as impacts of the proposed actions, and, as a result, the DEIS does not consider whether mitigation measures are needed to address the impacts of the alternatives when compared to the Second Basis of Comparison. Instead, the inclusion of the RPAs in the No Action Alternative leads the DEIS to improperly conclude that no mitigation is necessary for the adoption of the RPAs. If the DEIS had properly included adoption of the RPAs as an alternative, rather than as part of the No Action Alternative, then the DEIS would have been required to include appropriate mitigation measures to address the effects of the implementing the RPAs. (40 C.F.R. § 1502.14, subd. (f).) Instead, the DEIS assumes implementation of the RPAs and fails to include appropriate mitigation measures to address their effects. (See, e.g., DEIS, pp. 5-237 to 5-261 (failing to include mitigation for effects on surface water of implementing the RPAs).)

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2. Numerous Legal Requirements Protect the American River Region's Interests from Being Adversely Impacted by Reclamation's and DWR's Operation of the Projects

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Some of the oldest water rights in California concern the American River and are held by agencies in this region, which – unlike other regions of California – is solely dependent on its local water sources. For example, the City of Folsom and San Juan Water District ("SJWD") hold water rights that date to the 1850s. To obtain the water rights needed for the CVP Folsom Unit, and to be authorized to proceed to construct and operate this Unit, Reclamation was required to sign several settlement contracts concerning water supplies deriving from the

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American River. Those settlement contracts include contracts now held by the Cities of Folsom and Sacramento and SJWD.

In addition, when Reclamation applied to the then-State Water Rights Board ("SWRB") for its water-right permits for the CVP's Folsom Unit, numerous agencies in this region had pending applications for American River water rights. These agencies included the City of Roseville and predecessors of SJWD. In its 1958 decision that issued the Folsom Unit's water-right permits to Reclamation, Decision 893, the SWRB imposed on those permits a term – Term 14 – to protect those local applicants:

> Deliveries of water under permits issued pursuant to Application 13370 and 13371 shall be limited to deliveries for beneficial use within Placer, Sacramento and San Joaquin Counties and shall not be made beyond the westerly or southerly boundaries thereof, except on a temporary basis, until the needs of those counties, present or prospective, are fully met provided, however, that agreements in accordance with Federal Reclamation laws between permittee and parties desiring such service within said counties are executed by July 1, 1968.

The 1968 deadline was extended to December 31, 1975 under agreements signed by Reclamation. (Decision 1356, pp. 7-8; Decision Amending And Affirming As Amended, Decision 1356, p. 1 (1970).)

The City of Roseville, SJWD, Placer County Water Agency and the Sacramento Municipal Utility District signed CVP water-service contracts to which Term 14 applies. (Term 14 does not apply to the Reclamation contracts under which the City of Folsom receives water.) Term 14 requires Reclamation to operate the CVP to ensure water-service contract deliveries to these agencies consistent with the intent the SWRB stated in Decision 893:

> Permits are being issued to the United States to appropriate enough American River water to adequately supply the applicants naturally dependent on that source and availability of water to such applicants is reasonably assured by the terms to be contained in the permits to be issued to the United States restricting exportation of water under those permits insofar as exportation interfers [*sic*] with fulfillment of needs within Placer, Sacramento and San Joaquin Counties. Other applicants in more remote areas must if necessary seek water from other sources.

(Decision 893, p. 54.)

Besides these requirements that apply specifically to the CVP's Folsom Unit, California's area-of-origin laws also require Reclamation to operate the CVP to ensure water supplies for this region. For example, Water Code section 11460 – which applies to the CVP through Water Code section 11128 – states (italics added):

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> 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 therefrom, shall not be deprived by the department directly or indirectly of the prior right to all of the water reasonably required to adequately supply the beneficial needs of the watershed, area, or any of the inhabitants or property owners therein.

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Federal law requires Reclamation to respect these state law provisions and water right permit terms in its operation of the CVP. Section 8 of the Reclamation Act of 1902 provides:

> Nothing in [the Reclamation 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 [the Reclamation 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.

(43 U.S.C., § 383 (italics added).)

In *California v. United States*, the United States Supreme Court held that section 8 requires Reclamation to show substantial deference to state laws unless such laws are "directly inconsistent with congressional directives." ((1978) 438 U.S. 645, 678.) Specifically, the Supreme Court concluded Reclamation must comply with conditions imposed by the SWRCB in its operations of New Melones Dam, which is part of the CVP. In reaching this conclusion, the Supreme Court traced the historical relationship between federal government and the states in the reclamation of arid lands, stating that through this relationship "runs the consistent thread of purposeful and continued deference to state water law by Congress." (*Id.* at p. 653.)

Notwithstanding these legal requirements for the CVP's operations, as explained below, the DEIS indicates that Reclamation would not comply with these legal requirements.

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3. The DEIS Shows Reclamation's Operation of the Projects Would Not Comply with the Numerous Legal Requirements that Protect the American River Region's Interests

As discussed in more detail in the technical comments prepared for your agencies by MBK Engineers, the DEIS shows implementation of the RPAs would significantly impact Folsom Reservoir storage. The DEIS's hydrologic modeling states that implementing the RPAs would reduce the probability of American River Region municipal and industrial ("M&I") contractors receiving full allocations from the CVP from approximately 50 percent to 30 percent

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of all years, while the probability of receiving only 50 percent allocations would increase from approximately 5 percent to 10 percent of all years. The DEIS also states that implementation of the RPAs would result in reduced Folsom Reservoir carryover storage. (DEIS, pp. 5-93 to 5-95.)

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The DEIS states that Reclamation will place a disproportionate burden on Folsom Reservoir by using it as a "first responder" to meet Delta water quality standards.

> Folsom Reservoir also is operated by Reclamation to release water to meet Delta salinity and flow objectives established to improve fisheries conditions. Weather conditions combined with tidal action and local accretions from runoff and return flows can quickly affect Delta salinity conditions, and require increases in spring Delta inflow to maintain salinity standards, as described in Appendix 3A, No Action Alternative: Central Valley Project and State Water Project Operations. In accordance with Federal and state regulatory requirements, the CVP and SWP are frequently required to release water from upstream reservoirs to maintain Delta water quality. Folsom Lake is located closer to the Delta than Lake Oroville and Shasta Lake; therefore, the water generally is first released from Folsom Lake. Water released from Lake Oroville and Shasta Lake generally reaches the Delta in approximately three and four days, respectively. As water from the other reservoirs arrives in the Delta, Folsom Reservoir releases can be reduced.

(DEIS, pp. 5-32 to 5-33.)

This description of planned CVP and State Water Project ("SWP") operations demonstrates that Reclamation's proposed actions would violate the legal protections that apply to the American River region. This portion of the DEIS states that, for operational convenience, Reclamation plans to impose a disproportionate burden on the region for meeting Delta water quality standards, which are intended to address Delta-export operations, not operations necessary to meet water-supply or environmental requirements in the American River region.

Because the alternatives discussed in the DEIS are inconsistent with the legal requirements protecting the American River region's water supplies, the DEIS should include at least one alternative that would comply with the settlement contracts held by contractors in this region, the terms in Reclamation's water-right permits for Folsom Dam and Reservoir, and California's area of origin protections.

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4. The DEIS Does Not Fully Analyze Impacts Related to Folsom Reservoir Storage

As discussed in more detail in the technical memorandum prepared by MBK Engineers, the DEIS's hydrological analysis does not accurately analyze how the CVP and SWP would be operated with the combined effects of climate change and multi-year droughts, and, as a result,

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does not properly analyze the impacts of the proposed action on Folsom Reservoir storage and deliveries to American River Region M&I contractors.

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The DEIS acknowledges that its analysis and conclusions are probably inaccurate during extremely dry conditions that come with multi-year droughts:

> Under extreme hydrologic and operational conditions where there is not enough water supply to meet all requirements, CalSim II utilizes a series of operating rules to reach a solution to allow for the continuation of the simulation. It is recognized that these operating rules are a simplified version of the very complex decision processes that CVP and SWP operators would use in actual extreme conditions. Therefore, *model results and potential changes under these extreme conditions should be evaluated on a comparative basis between alternatives and are an approximation of extreme operational conditions*. As an example, CalSim II model results show simulated occurrences of extremely low storage conditions at CVP and SWP reservoirs during critical drought periods when storage is at dead pool levels at or below the elevation of the lowest level outlet. Simulated occurrences of reservoir storage conditions at dead pool levels may occur coincidentally with simulated impacts that are determined to be potentially significant. When reservoir storage is at dead pool levels, there may be instances in which flow conditions fall short of minimum flow criteria, salinity conditions may exceed salinity standards, diversion conditions fall short of allocated diversion amounts, and operating agreements are not met.

(DEIS, p. 5-61 (italics added).)

Regarding climate change, the DEIS does not disclose the proposed alternatives' impacts against baseline conditions without projected climate change. Instead, all of the DEIS's alternatives include the projected future impacts of climate change in the 2030 timeframe. (DEIS, p. ES-7.) This makes it impossible for reviewers to segregate impacts that are predicted to result from climate change from the impacts that would occur from implementation of the proposed alternatives. Furthermore, as discussed in MBK's technical memorandum, it is not possible to know whether future climate change will occur exactly as projected in the DEIS's single climate change scenario. Therefore, the DEIS does not adequately inform the public of the proposed alternatives' impacts, because the lack of an analysis of the proposed alternatives' impacts without climate change obscures how the state and federal projects are likely to operate if climate change does not occur exactly as projected in the DEIS.

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The DEIS also does not adequately analyze the impacts of, and potential mitigation for, water shortages in the American River region during multi-year droughts. As discussed in the following paragraphs, the DEIS should include further analysis of the potential impacts that water shortages would have on groundwater storage, socioeconomics and public health.

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Regarding the impacts to groundwater levels from the No Action Alternative, the DEIS concludes that, despite reduced water supplies from the CVP and SWP, groundwater levels would be similar in the Sacramento Valley Groundwater Basins. (DEIS, p, 7-121.) However, the DEIS should separately analyze groundwater impacts to the Sacramento Valley's subbasins to account for the impacts of water shortages in particular areas, including the American River region. Groundwater resources historically were overdrawn in northern Sacramento County and have been recovering largely because surface water from Folsom Reservoir and the American River have been made more widely available in this region. Significant reductions in future Folsom Reservoir storage levels, resulting in reduced surface water deliveries to American River Region M&I contractors, would increase groundwater withdrawals and would cause drawdowns in groundwater supplies. These increased withdrawals could further impact groundwater resources, because contamination from previous industrial and military operations is present in Sacramento County aquifers and could migrate as a result of increased demands on those groundwater aquifers.

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The DEIS also does not adequately analyze the socioeconomic impacts resulting from severe water shortages. The DEIS's analysis of the socioeconomic impacts of regional changes to M&I water supplies assumes that M&I contractors would be able to make up for shortages using alternate stored surface and groundwater supplies, increased groundwater pumping and transfers. (DEIS, p. 19-40.) However, such supplies are limited for agencies like ours, which cannot be served economically with pumped groundwater. For example: (1) the City of Roseville can pump groundwater from the western portion of its service area to a portion of the rest of its service area, but not all of it; (2) San Juan Water District can rely on some of its retail suppliers using groundwater, but groundwater cannot be used throughout the District's service area; and (3) the City of Folsom has little ability to serve groundwater in much of its existing service area. Furthermore, because your agencies divert surface water at Folsom Reservoir, and there are few opportunities for transfers from upstream water users, the DEIS's assumption that your agencies could alleviate significant water shortages through transfers is not supported.

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The DEIS also does not adequately analyze impacts to public health from the possible lack of M&I water supplies sufficient to meet minimal public health and safety needs during severe water shortages. As the DEIS acknowledges, during the current drought, the cutbacks in CVP and SWP allocations have been the most stringent in history, with CVP M&I water service contractors receiving only 50 percent of the amounts of their historical use. (DEIS, pp. 18-2 to 18-3.) As discussed above, implementation of the RPAs will continue to reduce M&I deliveries. During multi-year droughts, this may lead to the physical unavailability of water from the M&I intake at Folsom Reservoir. (DEIS, p. 5-30.) That intake would become dry if the reservoir's water level were to decline to about 320 feet above mean sea level, which would be when there is about 100,000 acre-feet (AF) of water stored there. Several agencies that use the intake would begin to have serious water-supply problems at reservoir storage volumes well above 100,000 AF.

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Despite the DEIS's own statements regarding the potential impacts on your region from implementation of the RPAs during multi-year droughts, the DEIS states that it is too "difficult" to identify local public health and safety issues associated with severe water shortages. (DEIS, p. 18-4.) The DEIS should provide an analysis of potential impacts to public health and safety associated with long-term reductions in CVP M&I deliveries, and especially those impacts associated with extreme shortages during multi-year droughts. This analysis is necessary to comply with the Ninth Circuit's statement that the DEIS must inform Reclamation of the human cost of implementing the RPAs. (*San Luis & Delta-Mendota Water Authority*, *supra*, 747 F.3d at 653 (italics added).)

Folsom Roseville SJWD 15 continued

For the reasons discussed in this letter, the DEIS should be revised and additional analyses should be conducted before Reclamation adopts a Final Environmental Impact Statement. The DEIS incorrectly defines the No Action Alternative, which renders analysis in the DEIS incorrect and leads Reclamation to not propose required mitigation measures. The hydrologic analysis in the DEIS also does not account for the legal requirements that protect the American River Region and does not adequately analyze impacts to Folsom Reservoir that would occur from implementation of the proposed actions.

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Very truly yours,

ALAN B. LILLY

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ATTACHMENT B

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MBK ENGINEERS

Water Resources • Flood Control • Water Rights

TECHNICAL MEMORANDUM

DATE: September 29, 2015

TO: Alan B. Lilly

FROM: Lee G. Bergfeld and Walter Bourez

SUBJECT: Technical Comments on Coordinated Long-Term Operation of the Central Valley Project and State Water Project Draft Environmental Impact Statement

This technical memorandum is a summary of MBK Engineers' (MBK) findings and opinions on the hydrologic modeling that the U.S. Bureau of Reclamation (Reclamation) performed for the draft environmental document for the Coordinated Long-Term Operation of the Central Valley Project and State Water Project (LT Ops DEIS).

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This review focuses on water operations modeling using CalSim II. CalSim II is a computer program jointly developed by the California Department of Water Resources (DWR) and Reclamation. CalSim II presents a comprehensive simulation of State Water Project (SWP) and Central Valley Project (CVP) operations. CalSim II is widely recognized as the most prominent water management model in California, and it is generally accepted as a useful and appropriate tool for assessing the water delivery capability of the SWP and CVP. CalSim II estimates, for various times of the year, how much water will be diverted, how much will serve as instream flows, and how much will remain in reservoirs.

For the LT Ops DEIS, Reclamation applied CalSim II to analyze how CVP and SWP operations changed as a result of implementation of the Reasonable and Prudent Alternatives (RPAs) in the 2008 U.S. Fish and Wildlife Service (USFWS) Biological Opinion (BO) on Delta smelt and the 2009 National Marine Fisheries Service (NMFS) Biological Opinion on Chinook salmon. The coding and assumptions included in the CalSim II model drive the results. Data and assumptions, such as the amount of precipitation runoff at a certain measuring station or the demand for water by specific water users are input into the model. Criteria used to operate the CVP and the SWP (including regulatory requirements such as biological opinions) are included in model assumptions. Because of the volume of water controlled and delivered by the CVP and SWP, these operational criteria significantly influence model results. Additionally, operational logic is coded into CalSim II to simulate how DWR and Reclamation would operate the system under circumstances for which there are no regulatory or otherwise definitive rules, e.g. when to move water from storage in reservoirs upstream of the Delta to reservoirs downstream of the Delta. This attempt to simulate the logic sequence and relative weighting that the CVP and SWP operators use as part of their "expert judgment" is a critical element of CalSim II.

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The CalSim II model is the foundational model for analysis of the LT Ops DEIS, including effects and impacts analyses. Results from CalSim II are used to examine how water supply and reservoir operations are modified by the RPAs in both BOs and for each project alternative. CalSim II results are also used by subsequent models to determine physical and biological effects including water quality, water levels, water temperature, Delta flows, and fish response. Any errors or inconsistencies identified in the underlying CalSim II model are therefore present in subsequent analyses of environmental effects.

The following sections provide our comments on CalSim II analysis conducted for the LT Ops DEIS (LT Ops DEIS Model).

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Climate Change

Analysis presented in the LT Ops DEIS attempts to incorporate the effects of climate change at a future date of approximately 2025 (LT Ops DEIS, page 5A.A-27). The methodology followed in the LT Ops DEIS is the same as used in analysis for the Bay-Delta Conservation Plan DEIS/EIR and the California Water Fix Revised DEIS/EIR. Analysis for the LT Ops DEIS is focused on an Early Long-Term (ELT) condition, as simulated in several different Global Climate Models under a range of future emissions conditions. These different Global Climate Model results, which vary significantly in their depictions of future temperatures and precipitation, are analyzed to determine a central tendency used to represent a potential future condition. The central tendency prediction of changes in temperature and precipitation is downscaled from large spatial grids used in Global Climate Models and input to the Variable Infiltration Capacity (VIC) hydrology model to generate simulated natural stream flows. These climate-influenced simulated stream flows on a watershed scale are then used to determine fractional changes from the historical, observed inflow patterns in CalSim II. Changes are then applied to the monthly historical reservoir inflows in CalSim II to depict a future, climate-changed hydrology.

Figure 1 illustrates the assumed average annual and monthly Folsom Reservoir inflows at the ELT condition, by water year type (historical Sacramento Valley Water Year Type), that were used for analysis of all alternatives in the LT Ops DEIS Model.

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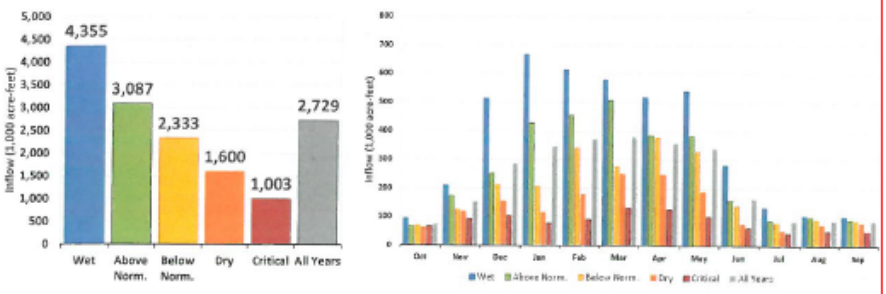

Figure 1: Average Annual and Monthly Inflow to Folsom in All Alternatives of LT Ops DEIS Model

Figure 2 shows the changes in the average annual and monthly Folsom inflows by water year type between the ELT condition used in the LT Ops DEIS Model and historically based inflows from a recent CalSim II study from Reclamation. The historically-based inflows were used for analysis of the CVP Municipal and Industrial (M&I) Water Shortage Policy Environmental Impact Statement released September 2015. Differences in Figure 2 show that while the average annual reduction in Folsom Reservoir inflow is only 9,000 acre-feet under the ELT assumptions, there are much higher reductions in drier year types, and seasonal shifts to higher inflows from November through March, and lower inflows from May through October.

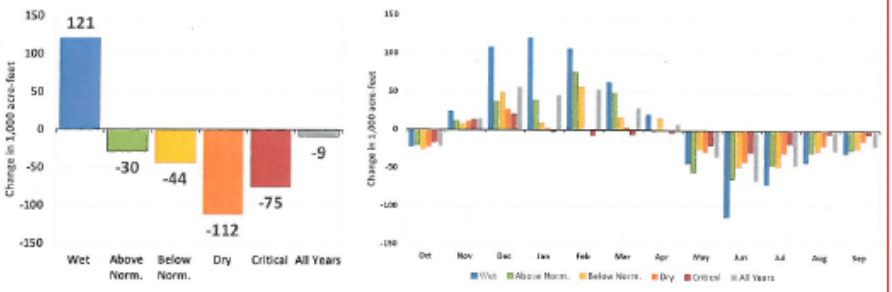

Figure 2: Average Annual and Monthly Change in Inflow to Folsom under ELT Climate Change Conditions included in All Alternatives of LT Ops DEIS Model

There is considerable uncertainty regarding the effects of climate change on future temperatures and precipitation. As described above, the LT Ops DEIS relied on one potential depiction of these effects. Analysis of only one potential future condition does not cover the range of potential future conditions and introduces inconsistent assumptions in the model. An example of these inconsistent assumptions occurs on the upper American River. The LT Ops DEIS assumed changes from historical inflow to Folsom based on potential change in future temperatures and precipitation and analysis with the VIC model to understand changes in natural stream flows. However, the American River watershed upstream from Folsom Reservoir is not

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expected to change in the same manner as a natural stream. There is significant storage capacity in Placer County Water Agency's (PCWA) Middle Fork Project and the Sacramento Municipal Utility District's (SMUD) Upper American River Project. Operations of these reservoirs directly affect Folsom inflow and operating criteria such as flood credit space. To produce acceptable modeling of Folsom Reservoir and the American River, there must be consistency in the hydrology used to model reservoirs upstream from Folsom and the hydrology used to model Folsom Reservoir. Changes in inflow and operations of these upstream projects should be considered to properly incorporate climate change into modeling of Folsom Reservoir. Alternatively, climate change analysis could be conducted as sensitivity analysis, as opposed to being included in all project alternatives. Standard practice for modeling CVP and SWP operations is to simulate the No Action and Project alternatives with historically-based hydrology. In our opinion, this is the preferred approach to avoid inconsistencies in model assumptions and over reliance upon results from one of many potential future climate-changed conditions.

Folsom Roseville SJWD 19 continued

Additionally, in examining possible effects of climate change, it is not appropriate to assume that current project operations will remain static and not respond to climate change. The analysis for the LT Ops DEIS assumes continued operations of the CVP and SWP without adaptations. This approach produces results that are not useful for dealing with the complex problem of climate change because it does not reflect the way in which the CVP and the SWP would actually operate, whether or not the RPAs are implemented. We recommend a sensitivity analysis be conducted to develop a better understanding of the range of possible responses to climate change by the CVP and SWP, and the regulatory structures that dictate certain project operations.

Climate Change Assumptions Result in Unrealistic Operations

Review of model output for the LT Ops DEIS No Action Alternative (NAA) reveals that the model is operated beyond its usable range. The purpose of CalSim II is to simulate how the CVP and SWP systems would be operated to meet regulatory requirements and water delivery objectives based on a certain amount of precipitation and runoff. When the precipitation patterns and resultant runoff were changed for the LT Ops DEIS Model with climate change, the logic regarding how the system is operated to meet the regulatory and water delivery objectives was not changed. The net effect is that during certain periods of the model simulation neither the regulatory criteria nor the delivery objectives are met.

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With the predicted changes in precipitation and temperature implemented in the LT Ops DEIS Model, there is simply not enough water available in the simulation to meet all regulatory objectives and water user demands. Yet the LT Ops DEIS Model continues its normal routine until the modeled system essentially crashes and thus fails to meet its objectives. In this aspect, the LT Ops DEIS Model simply does not simulate reality. For example, if ELT conditions actually occur, the CVP and SWP would likely adapt to protect water supplies and the environment. Examples of adaptations to climate change would likely include: (1) updating operational rules regarding water releases for flood protection; (2) during severe droughts, emergency drought declarations could call for mandatory conservation, changes in some

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regulatory criteria, or even an inability to meet contractual obligations, similar to what has occurred during the current and previous droughts; and (3) if droughts become more frequent, the CVP and SWP would likely revisit the rules by which they allocate water during shortages and operate with lower deliveries during wetter years. The likelihood of an appropriate operational response to climate change is supported by the many modifications to CVP and SWP operations that were made during the winter and spring of 2014 and 2015 to respond to the current drought. Thus, while the LT Ops DEIS Model shows that difficult decisions will have to be made if ELT conditions occur, the LT Ops DEIS Model does not attempt to simulate the results of such decisions.

Under the climate change conditions, reservoir storage (particularly in the CVP system) is simulated to operate aggressively such that reservoirs are drawn down to an extremely low level. Simulated storage levels reach the model-defined dead pool, at which point no water can be released from reservoir storage – for fish, drinking water, or agriculture. CalSim II specifies dead pool in Folsom Reservoir as 90,000 acre-feet and storage reaches this level during approximately six percent of all years (see Figure 3). By comparison, since Folsom Reservoir became operational in 1955, the lowest storage level on record was 147,000 acre-feet at the end of September 1977. However, the LT Ops DEIS Model predicts that, with ELT climate change, reservoir storage will be approximately 90,000 acre-feet, nearly 40% lower than its historical low, during six percent of all years. Some municipalities, like the City of Folsom, the City of Roseville, and San Juan Water District, are almost entirely dependent on Folsom Reservoir releases for drinking water; and Folsom Reservoir's reaching 90,000 acre-feet could cut their municipal deliveries below the levels required to maintain public health and safety for over 500,000 people.

In reality, and to avoid such dire circumstances, the CVP and SWP would likely request that regulatory agencies modify the applicable standards so that the CVP and SWP could conserve storage. Conservation or rationing by water users would probably also occur. Similar steps were taken in spring 2014 and 2015 to reduce water diversions and reservoir releases for fishery needs and Delta requirements. Emergency measures such as these are not simulated in the model, so the LT Ops DEIS Model does not reflect reasonable future operations with climate change.

Modeling climate change, without adaptation measures, leads to results showing insufficient water supplies to meet all regulatory objectives and user demands. This modeling approach significantly limits the utility of the LT Ops DEIS Model results in analyzing the effects of implementing the RPAs, particularly during drought conditions. With future conditions modeled to be so dire, the modeled effects of the RPAs are reduced because it appears that conditions cannot get any worse; i.e., reservoir storage cannot be reduced below minimum levels. However, in reality, the future conditions will not be as depicted in the LT Ops DEIS Model. Operations during the current drought show that drawing reservoirs down to near minimum levels to meet regulatory and contractual requirements is not realistic. Instead, difficult decisions are made in an attempt to balance environmental conditions in reservoirs and rivers, while still meeting water supply needs. These real-world decisions create different environmental conditions than simulated in the LT Ops DEIS Model. Therefore, comparisons of

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results from alternatives simulated in the LT Ops DEIS Model do not capture the environmental effects during these drought periods. We recommend Reclamation, in cooperation with key agencies, develop more realistic operating rules for the hydrologic conditions expected over the next half-century, and incorporate those operating rules into any CalSim II model that includes climate change.

Folsom Roseville SJWD 20 continued

Effects of the Biological Opinions

The LT Ops DEIS states Reclamation was ordered by the Ninth Circuit Court to prepare the EIS to "*determine whether the acceptance and implementation of the RPA actions cause a significant effect on the human environment*" (LT Ops DEIS page ES-6). The LT Ops DEIS No Action Alternative (NAA) includes implementation of the RPA actions in the simulated operations of the CVP and SWP. Effects from the implementation of the RPA actions on the American River Basin are shown by comparison of the NAA with the Second Basis of Comparison (SBC). Reclamation developed the SBC, which does not include RPA actions, in response to scoping comments, and to provide a basis of comparison to determine effects of implementing RPA actions.

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MBK previously analyzed the effects of implementing the 2008 USFWS and 2009 NMFS BOs on CVP and SWP operations without climate change. Overall, changes in simulated CVP/SWP operations contained in the LT Ops DEIS are generally consistent with previous studies conducted by MBK. Differences in the effects presented in the LT Ops DEIS, where they exist, are likely due to the inclusion of climate change.

An important assumption for the operation of Folsom Reservoir, as simulated for the LT Ops DEIS, is that both the NAA and the SBC include operations to meet the Lower American River Flow Management Standard (FMS). The FMS was one of the RPA actions in the 2009 NMFS BO; however, it also is included in the SBC. The inclusion of the FMS in both the NAA and SBC is important when comparing results of the two studies because none of the differences between the NAA and the SBC are the result of implementing the FMS. Additionally, the majority of the other RPA actions apply to areas outside of the American River Basin. Therefore, changes in Folsom Reservoir operations and deliveries in the American River Basin are a result of CVP operations to meet RPA actions outside of the basin.

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For water users in the American River Basin, potential effects on the human environment are focused on the operation of Folsom Reservoir and water deliveries. Figure 3 illustrates the probability of exceedance for end-of-September (carryover) storage in Folsom Reservoir for the NAA with implementation of the BO RPA actions and the SBC without implementation of the BO RPA actions.

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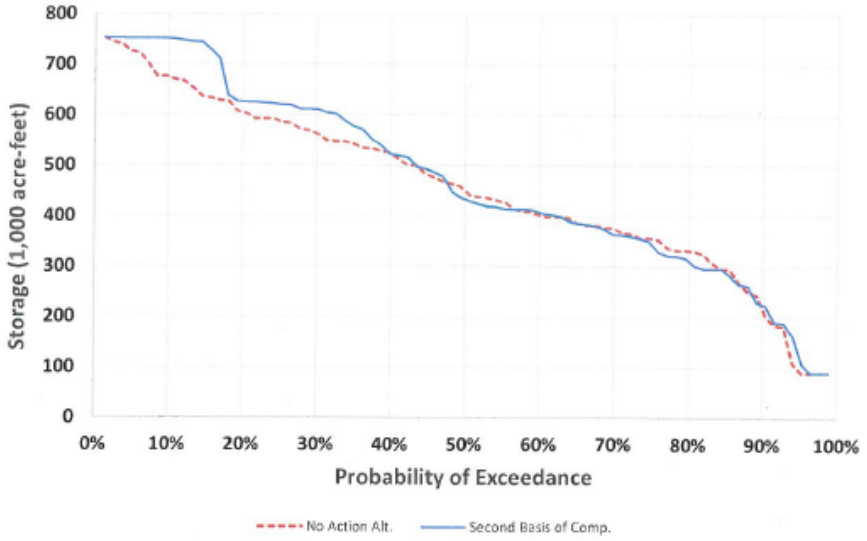

Figure 3: Probability of Exceedance for Folsom Reservoir End-of-September Storage

Results presented in Figure 3 illustrate one of the most significant effects of implementing the BO RPA actions on Folsom Reservoir. Folsom Reservoir carryover storage in wetter year types, i.e. below approximately the 40 percent exceedance level, is reduced as a result of additional releases to meet the fall X2 RPA action in the 2008 USFWS BO. In many years when Folsom Reservoir carryover storage is high, the reservoir will fill and spill in subsequent years. However, there are exceptions. Two examples included in the analysis are the years that preceded the 1976-1977 drought and the 1987-1992 drought. Both 1975 and 1986 are classified as wet water years by the Sacramento Valley Water Year Index and in both years carryover storage in Folsom Reservoir was reduced in the NAA by releases to meet the fall X2 RPA. Overall, the LT Ops DEIS lacks sufficient detail describing the effects of the different alternatives on CVP/SWP operations and the effects of implementing the BOs on the human environment. We recommend that more description of the operational changes and interpretation of the model results be included in the final EIS.

Changes in Folsom Reservoir storage can result in changes in CVP North-of-Delta (NOD) M&I water service contract allocations. Lower allocations result in less water deliveries to American River CVP contractors. Figure 4 illustrates the probability of exceedance for CVP NOD M&I allocations for the NAA and the SBC.

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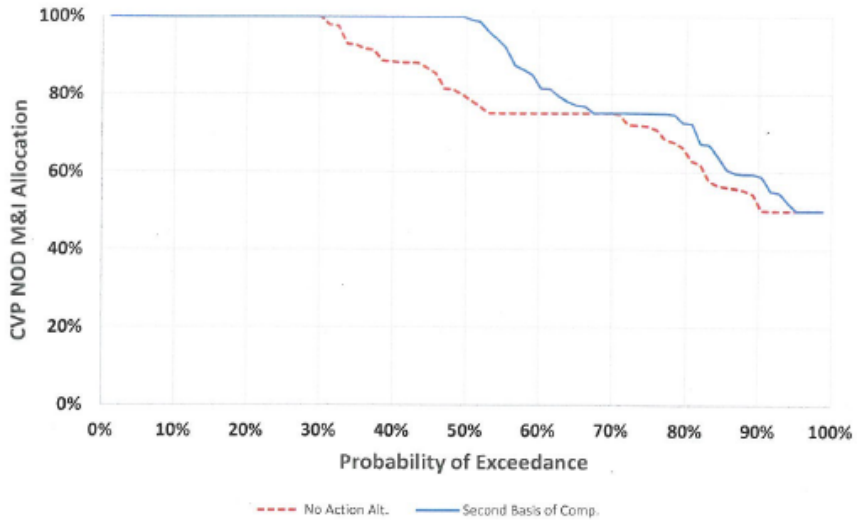

Figure 4: Probability of Exceedance for CVP NOD M&I Water Service Contract Allocations

Allocations illustrated in Figure 4 show a reduction in water available under CVP contracts as a result of implementing RPA actions contained in the BOs. The probability of receiving full allocations is reduced from approximately 50 percent to 30 percent, while the probability of receiving a 50 percent allocation is increased from approximately 5 percent to 10 percent. Changes in allocations are one parameter to understand the effects of implementing the BOs on American River water users. However, as described above, in the six percent of years when model results show that Folsom Reservoir would be drawn down to dead pool in both the NAA and SBC, there is not enough water in the simulation to meet the model allocations.

American River Basin Demands

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Demand assumptions in CalSim II for a future level of development in the American River basin can vary. Table 1 is a summary of the average annual demands, by water purveyor, assumed in all alternatives for the LT Ops DEIS.

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Table 1: Summary of American River Basin Water Purveyor Demands in LT Ops DEIS Model

Water Purveyor	Annual Demand (1,000 acre-feet)
Placer County Water Agency	65.0
PCWA – CVP Contract	35.0
City of Folsom	27.0
City of Folsom – CVP Contract	7.0
Folsom Prison	5.0
San Juan Water District (SJWD)	33.0
SJWD from PCWA	25.0
SJWD – CVP Contract	24.2
City of Roseville – from PCWA	30.0
City of Roseville – CVP Contract	32.0
Sac. Suburban Water District – from PCWA	0.0
El Dorado Irrigation District (EID)	0.0 or 17.0*
EID – CVP Contract	7.55
El Dorado County Water Agency (EDCWA) – CVP Contract	0.0 or 15.0*
So. Cal. Water Company/Arden Cordova Water Service	5.0
California Parks and Recreation	5.0
Sacramento Municipal Utilities District (SMUD)	15.0
SMUD – CVP Contract	30.0
City of Sacramento (Fairbairn and Sacramento River)	311.8
Carmichael Water District	12.0
Sacramento County Water Agency Total (SCWA)	109.7
SCWA – CVP Contract	45.0
East Bay Municipal Utilities District – CVP Contract	Up to 112.0

* These demands for EID and EDCWA are only included in sensitivity analyses performed for Alternatives 3 and 5.

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The majority of the demands summarized in Table 1 approximate a buildout level of demand. One exception to this is for Sacramento Suburban Water District (Sac Suburban). There is no demand/diversion simulated for Sac Suburban for any of the alternatives evaluated in the LT Ops DEIS.

American River Basin Water Budget

Appendix 5B of the LT Ops DEIS describes the sensitivity analysis that was conducted to evaluate the effects of additional diversions from Folsom Reservoir. Alternatives 3 and 5 are described to include a potential future Warren Act Contract between Reclamation and El Dorado Irrigation District (EID) for the use of Folsom Reservoir to convey 17,000 acre-feet annually, and a M&I water service contract with El Dorado County Water Agency (EDCWA) for up to 15,000 acre-feet annually, subject to CVP M&I allocations. These two additional demands for water from Folsom Reservoir were not included in the modeling for Alternative 3 or Alternative 5. However, additional simulations were performed for the LT Ops DEIS for both alternatives that included the additional demands. The LT Ops DEIS states comparisons of these additional simulations that include the EID and EDCWA demands can be made to results for Alternatives 3

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and 5, which do not include these demands, to understand the changes as a result of the additional 32,000 acre-feet of demand.

Review of these sensitivity studies shows an error in simulating the additional diversions in the context of the CVP/SWP system. Model studies correctly simulate the additional diversion of water from Folsom Reservoir, an annual average of approximately 17,000 acre-feet to EID and 12,000 acre-feet to EDCWA, after adjustment for CVP M&I allocations. Model studies also include an assumption that approximately 46 percent of the additional diversion returns to the system. The return flow appears to represent the monthly indoor M&I use of the additional demand being met from the surface water diversion. However, there is no additional depletion from the American River Basin, or Depletion Study Area (DSA) 70. Instead, the additional diversion from Folsom Reservoir results in: (1) increased return flows above the specified 46 percent, (2) reductions in other surface water diversions, and (3) a reduction in groundwater pumping within DSA 70. This change in groundwater pumping within DSA 70 is not a correct response of the model because the additional surface water diverted to EID and EDCWA under these two contracts would not be used to meet demands within DSA 70 that are currently being met from groundwater. Figure 5 illustrates the average annual change in different flow arcs in the CalSim II representation of the American River Basin/DSA 70.

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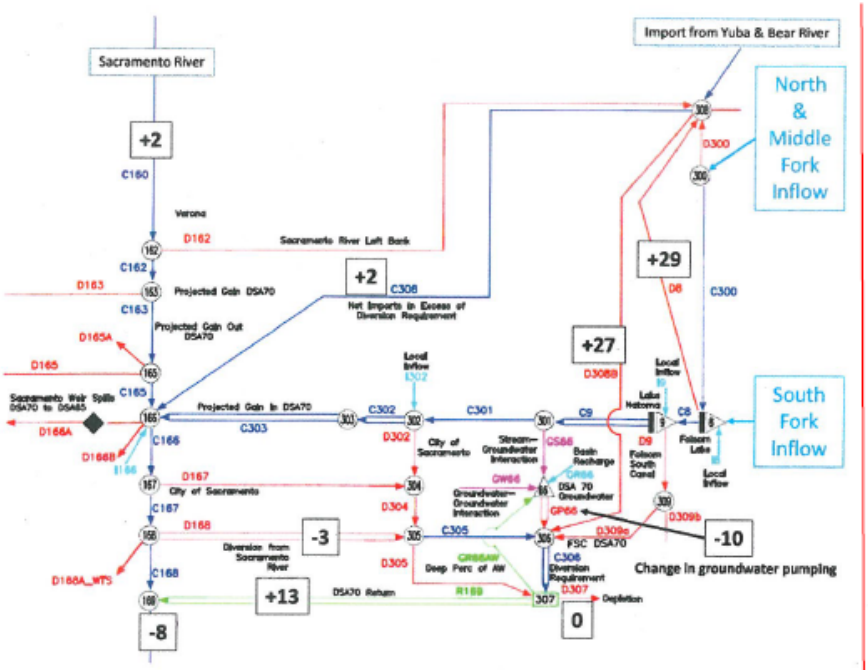

Figure 5: Average Annual Change in DSA 70 Water Budget for Sensitivity Analysis to Additional American River Basin Demands (1,000 acre-feet)

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The result of these errors is to underestimate the potential environmental effects of these additional demands in Alternatives 3 and 5. Figure 5 illustrates that the reduction in Delta inflow is approximately 8,000 acre-feet on an average annual basis as a result of meeting up to 32,000 acre-feet of additional demand. Return flows are approximately 13,000 acre-feet of the 29,000 acre-feet diverted from Folsom Reservoir. Therefore, the remainder of the water should be depleted from the DSA 70 water budget, resulting in an average annual reduction in Delta inflow of approximately 16,000 acre-feet. However, instead of being depleted, the additional diversions from Folsom Reservoir increase return flow to the Sacramento River through arc C308, decrease Sacramento River diversions through arc D168, and reduce groundwater pumping through arc GP66. None of these changes should occur as a result of diverting additional water from Folsom Reservoir for delivery within EID and/or EDCWA. Additionally, there is no additional depletion of water from DSA 70 through arc D307. It is expected that some portion of the additional diversions under the two contracts would be depleted from the system. These model errors affect only the analysis of Alternatives 3 and 5 as presented in the sensitivity studies in Appendix 5B.

Folsom Roseville SJWD 25 continued

Lee Bergfeld, P.E.

LB/jw
1978-3\TECH MEMO COMMENTS ON LT OPS DEIS 2015-09-29

1C.1.7.1 Responses to Comments from City of Folsom, City of Roseville, and San Juan Water District

Folsom Roseville SJWD 1: Comment noted.

Folsom Roseville SJWD 2: Reclamation has modified the Final EIS in response to comments; and will use the Final EIS in the development of the Record of Decision. On October 9, 2015, the District Court granted a very short time extension to address comments received during the public review period, and requires Reclamation to issue a Record of Decision on or before January 12, 2016. This current court ordered schedule does not provide sufficient time for Reclamation to include additional alternatives, which would require recirculation of an additional Draft EIS for public review and comment, nor does Reclamation believe additional analysis is required to constitute a sufficient EIS. Reclamation is committed to continue working toward improvements to the USFWS and NMFS RPA actions through either the adaptive management process, Collaborative Science and Adaptive Management Program (CSAMP) with the Collaborative Adaptive Management Team (CAMT), or other similar ongoing or future efforts.

Folsom Roseville SJWD 3: This comment is consistent with the information in the EIS.

Folsom Roseville SJWD 4: Comment noted.

Folsom Roseville SJWD 5: Please see response to Comment Folsom Roseville SJWD 2.

Folsom Roseville SJWD 6: The CVP and SWP operations prioritize meeting federal and state regulatory requirements and deliveries to water rights holders, including the City of Sacramento, prior to deliveries of water to CVP and SWP water contractors. The modeling analyses presented in the EIS include these prioritizations for long-term operation of the CVP and SWP without inclusion of changes that could be developed for specific extreme flood or drought events.

Folsom Roseville SJWD 7: As described in Section 3.3, Reclamation had provisionally accepted the provisions of the 2008 USFWS BO and 2009 NMFS BO, and was implementing the BOs at the time of publication of the Notice of Intent in March 2012. Under the definition of the No Action Alternative in the National Environmental Policy Act regulations (43 CFR 46.30), Reclamation's NEPA Handbook (Section 8.6), and Question 3 of the Council of Environmental Quality's Forty Most Asked Questions, the No Action Alternative could represent a future condition with "no change" from current management direction or level of management intensity, or a future "no action" conditions without implementation of the actions being evaluated in the EIS. The No Action Alternative in this EIS is consistent with the definition of "no change" from current management direction or level of management. Therefore, the RPAs were included in the No Action Alternative as Reclamation had been implementing the BOs and RPA actions, except where enjoined, as part of CVP operations for approximately three years at the time the Notice of Intent was issued (2008 USFWS BO implemented for three years and three months, 2009 NMFS BO implemented for two years and nine months).

As described in Section 3.3, Reclamation included the Second Basis of Comparison to identify changes that would occur due to actions that would not have been implemented without Reclamation's provisional acceptance of the BOs, as required by the District Court order. However, the Second Basis of Comparison is not consistent with the definition of the No Action Alternative used to develop the No Action Alternative for this EIS. Therefore, mitigation measures have not been considered for changes of alternatives as compared to the Second Basis of Comparison.

The analysis in the EIS includes hydrologic conditions projected to occur in 2030 with existing regulatory requirements, future population growth in areas located north of the Delta, climate change, and sea level rise, as described in Appendix 5A, Section A, CalSim II and DSM2 Modeling. These changes are not caused by changes in CVP and SWP operations, and would occur with or without implementation of the BOs or other actions in the alternatives. Because these changes are included in the No Action Alternative, Second Basis of Comparison, and Alternatives 1 through 5, the effects of these changes are not considered in the comparative analysis used in this EIS to determine effects of the alternatives.

Folsom Roseville SJWD 8: Comment noted.

Folsom Roseville SJWD 9: The CVP and SWP operations prioritize meeting federal and state regulatory requirements and deliveries to senior water rights holders, including the City of Sacramento. The modeling analyses presented in

the EIS include these prioritizations for long-term operation of the CVP and SWP without inclusion of changes that could be developed for specific extreme flood or drought events.

Reclamation is aware of the storage and diversion limitations that exist for the intakes in Folsom Lake during drought periods when Reclamation may be allocating and delivering water in consideration of federal and state regulatory requirements, including water rights. Droughts have occurred throughout California's history, and are constantly shaping and innovating the ways in which Reclamation and DWR balance both federal and state regulations, public health standards and urban and agricultural water demands. The most notable droughts in recent history are the droughts that occurred in 1976-77, 1987-92, and the ongoing drought. More details have been included in Section 5.3.3 of Chapter 5, Surface Water Resources and Water Supplies, in the Final EIS to describe historical responses by CVP and SWP to these drought conditions, including implementation of a barge and pump system in Folsom Lake to allow diversions when low water surface elevations would cause capacity issues for existing intakes.

Folsom Roseville SJWD 10: On October 9, 2015, the District Court granted a very short time extension to address comments received during the public review period, and requires Reclamation to issue a Record of Decision on or before January 12, 2016. This current court ordered schedule does not provide sufficient time for Reclamation to include additional alternatives, which would require recirculation of an additional Draft EIS for public review and comment, nor does Reclamation believe additional analysis is required to constitute a sufficient EIS. Reclamation is committed to continue working toward improvements to the USFWS and NMFS RPA actions through either the adaptive management process, Collaborative Science and Adaptive Management Program (CSAMP) with the Collaborative Adaptive Management Team (CAMT), or other similar ongoing or future efforts.

Folsom Roseville SJWD 11: The alternatives considered in the EIS were analyzed over a wide range of hydrologic conditions, including drought conditions in 1927 through 1934 and 1987 through 1992. The CalSim II model assumptions include assumptions for compliance with federal and state regulatory requirements. The model results indicate that CVP and SWP water deliveries under critical dry periods is minimal. For example, water deliveries to CVP and SWP water contractors (not water rights holders, settlement, or exchange contractors) would average about 22 to 30 percent of full contract amounts under critical dry year water conditions as shown in Tables C-19 and C-20 in Appendix 5A, Section C, CalSim II and DSM2 Model Results (see Table 5A.B.1 in Appendix 5A, Section B, CalSim II and DSM2 Modeling Simulations and Assumptions, for full contract amounts). The CalSim II model does not represent historical annual responses to extreme conditions by Reclamation, DWR, and other agencies to manage adverse conditions associated with wide range of water users, as described in Section 5.3 of Chapter 5, Surface Water Resources and Water Supplies, in the Final EIS.

Folsom Roseville SJWD 12: The No Action Alternative, Second Basis of Comparison, and Alternatives 1 through 5 all include hydrologic and water quality conditions with climate change and sea level rise at Year 2030. Because the EIS analysis is based upon a comparison of Alternatives 1 through 5 to the No Action Alternative, and a comparison of the No Action Alternative and Alternatives 1 through 5 to the Second Basis of Comparison, the effects of climate change and sea level rise are not included in the incremental differences between the alternatives. Therefore, the relative incremental differences between the alternatives at Year 2030 are representative of the differences between the alternatives with or without climate change and sea level rise.

Folsom Roseville SJWD 13: Section 7.4 of Chapter 7, Groundwater Resources and Groundwater Quality, has been modified in the Final EIS to provide more clarity related to localized groundwater issues in areas of the Central Valley in the vicinity of communities that use CVP and SWP water and that are not specifically addressed in the CVHM groundwater model. Information presented in Appendix 5A, Section C, CalSim II and DSM2 Model Results, (e.g., projected CVP water deliveries) and Appendix 5D, Municipal and Industrial Water Demands and Supplies, (e.g., urban water management plan projections for 2030) were used in the EIS to analyze effects of the alternatives as compared to the No Action Alternative and Second Basis of Comparison.

Folsom Roseville SJWD 14: The EIS describes that a suite of alternative water supplies could be used by the Year 2030 during drier years and over the long-term. The alternative water supplies include wastewater and stormwater recycling and water conservation, as well as water transfers from water rights holders as is projected for the American River Basin in the urban water management plans for the Year 2030.

Folsom Roseville SJWD 15: As described in the response to Comment Folsom Roseville SJWD 9, Reclamation is aware of the storage and diversion limitations that exist for the intakes in Folsom Lake during drought periods when Reclamation may be allocating and delivering water in consideration of federal and state regulatory requirements, including water rights. Droughts have occurred throughout California's history, and are constantly shaping and innovating the ways in which Reclamation and DWR balance both federal and state regulations, public health standards and urban and agricultural water demands. The most notable droughts in recent history are the droughts that occurred in 1976-77, 1987-92, and the ongoing drought. More details have been included in Section 5.3.3 of Chapter 5, Surface Water Resources and Water Supplies, in the Final EIS to describe historical responses by CVP and SWP to these drought conditions, including implementation of a barge and pump system in Folsom Lake to allow diversions when low water surface elevations would cause capacity issues for existing intakes.

Folsom Roseville SJWD 16: Please see response to Comments Folsom Roseville SJWD 2, Folsom Roseville SJWD 7, and Folsom Roseville SJWD 9.

Folsom Roseville SJWD 17: Comment noted. This comment is consistent with information presented in the EIS.

Folsom Roseville SJWD 18: As stated in Section 5A.A.5.4 of Appendix 5A, Section A, CalSim II and DSM2 Modeling, the median climate change scenario was based on more than hundred climate change projections and used for characterizing the future climate condition for the purposes of the EIS. Although projected changes in future climate contain significant uncertainty through time, several studies have shown that use of the median climate change condition is acceptable (e.g., Pierce et al. 2009). The median climate change is considered appropriate for the EIS because of the comparative nature of the NEPA analysis. Due to the use of the same climate change assumptions in the No Action Alternative, Second Basis of Comparison, and Alternatives 1 through 5, the results of the NEPA comparative analysis are indicative of the changes between the model runs without climate change at the Year 2030. The results of the CalSim II model run cannot be used in a predictive manner. Therefore, it was determined that a sensitivity analysis using the different climate change conditions was not required for this EIS.

Folsom Roseville SJWD 19: As stated in Appendix 5A, Section A, CalSim II and DSM2 Modeling, the hydrologic assumptions in all of the Sacramento Valley watersheds, including the American River watershed, were developed using historical hydrology and applying the climate change projections for each watershed to develop projected conditions in the Year 2030. However, the commenter is correct that the CalSim II model assumptions do not include any transient trends in the vegetation or water management that may affect stream flows that could be considered to be speculative under the NEPA No Action Alternative assumptions (see Section 5A.A.4 in Appendix 5A, Section A, of the EIS).

Folsom Roseville SJWD 20: Evaluation of water supplies over the 82-year simulation period of the CalSim II model includes several series of increased and decreased stressed conditions that range from extreme floods to extreme droughts. As described in Section 5A.A.3.5 of Appendix 5A, Section A, the CalSim II results may differ from real-time operations under stressed water supply conditions. Such model results occur due to the inability of the model to make real-time policy decisions under extreme circumstances. For example, reductions to senior water rights holders due to dead-pool conditions in the model can be observed in model results under certain circumstances as the CalSim II model makes month-by-month decisions based on values for that month only. These reductions would be lessened in real-time by making decisions in prior months as well as the current month to manage the actual available water supplies within legal and contractual obligations.

All of the CalSim II model runs in this EIS alternatives include consistent climate change conditions without consideration of potential regulatory or operational changes due to climate conditions in the future. Potential climate-related operational changes are currently unknown and it would be speculative to develop such assumptions for a NEPA analysis. Similarly, due to unique nature of each

flood or drought period, assuming a prescriptive "operation" would be considered speculative. The EIS acknowledges these uncertain conditions that cannot be quantitatively analyzed at this point; and attempts to qualitatively assess the effects of changes from current affected environment to conditions in 2030 in Section 5.4 of Chapter 5, Surface Water Resources and Water Supplies of the Final EIS.

The impact analysis compares conditions under the Alternatives 1 through 5 to the No Action Alternative; and under the No Action Alternative and Alternatives 1 through 5 to the Second Basis of Comparison. This comparative approach eliminates effects of future uncertainty that cannot be modeled because the uncertainty would occur under all compared alternatives. This comparative approach reduces the effects of climate change from the incremental changes which are used to compare the alternatives, No Action Alternative, and Second Basis of Comparison.

As described in response to Comment Folsom Roseville SJWD 9, Reclamation is aware of the storage and diversion limitations that exist for the intakes in Folsom Lake during drought periods when Reclamation may be allocating and delivering water in consideration of federal and state regulatory requirements, including water rights. Droughts have occurred throughout California's history, and are constantly shaping and innovating the ways in which Reclamation and DWR balance both federal and state regulations, public health standards and urban and agricultural water demands. The most notable droughts in recent history are the droughts that occurred in 1976-77, 1987-92, and the ongoing drought. More details have been included in Section 5.3.3 of Chapter 5, Surface Water Resources and Water Supplies, in the Final EIS to describe historical responses by CVP and SWP to these drought conditions, including implementation of a barge and pump system in Folsom Lake to allow diversions when low water surface elevations would cause capacity issues for existing intakes.

Folsom Roseville SJWD 21: Comment noted.

Folsom Roseville SJWD 22: This comment is consistent with the information presented in the EIS.

Folsom Roseville SJWD 23: Please see response to Comment Folsom Roseville SJWD 20.

Folsom Roseville SJWD 24: As described in Appendix 5D, Municipal and Industrial Water Demands and Supplies, it is assumed that Sacramento Suburban Water District supplies are met through water purchased from Placer County Water Agency water rights water and treated by San Juan Water District, and water purchased from City of Sacramento water rights water.

Folsom Roseville SJWD 25: The comment is correct that the depletion terms in CalSim II model for El Dorado Irrigation District and El Dorado County Water Agency deliveries are not well-represented. A subsequent CalSim II model study was developed using a different configuration that would represent a worst-case scenario in terms of water supply in Folsom Lake. Based on this study, the

changes in overall system operations show similar conditions to the analysis presented in Appendix 5B, Sensitivity Analysis on Representation of EID's Warren Act and EDCWA's Water Service Contracts with Reclamation in Alternatives 3 and 5.

1C.1.8 Friant Water Authority

September 29, 2015

VIA ELECTRONIC MAIL

Mr. Ben Nelson, Natural Resources Specialist
Bureau of Reclamation, Bay-Delta Office
801 I Street, Suite 140
Sacramento CA 95814-2536
bcnelson@usbr.gov

Re: Draft Environmental Impact Statement Regarding Coordinated Long-term Operation of the Central Valley Project and State Water Project

Dear Mr. Nelson,

The Friant Water Authority is a joint powers authority consisting of fourteen agencies that comprise 54% of the total Friant Division and Cross Valley Contract water supplies in the Friant Service Area. We have reviewed the draft EIS regarding the Coordinated Long-term Operation of the Central Valley Project (CVP and State Water Project (SWP) and have the following comments for your consideration. FWA 1

First, we are totally confused by the characterization of the implantation of the 2008 USFWS delta smelt biological opinion and the 2009 NMFS winter run salmon biological opinion as the "No Action" alternative. While we appreciate the inclusion of the Second Basis of Comparison, which represents the true "No Action", it is bizarre on its face to declare that the "No Action" alternative include the actions that are the subject of the environmental review. This appears to be a deliberate attempt to mislead the public as to the true impacts of the biological opinions and to mischaracterize the significant impacts on CVP contractor's water supplies. The Final EIS should correct this "Alice in Wonderland" logic and describe the Second Basis of Comparison as the No Action alternative. FWA 2

Second, we were disappointed to note that Reclamation did not even include the Friant Division facilities as part of the CVP facilities that are potentially impacted by the subject biological opinions, even though the Friant Water Authority is identified in Chapter 1, page 1-13 as an entity with which Reclamation had or was in the process of signing an MOU. Clearly, the Friant Contractors rely on the operations of the CVP and Delta exports to ensure delivery of water from the San Joaquin River. FWA 3

Third, Table 5.26. Changes in CVP Water Deliveries under the No Action Alternative as Compared to the Second Basis of Comparison, reflects no changes to deliveries to Exchange Contractors in any year. While we understand the limitations of modeling for comparison of long term operations, Reclamation is well aware that in both 2014 and 2015 there were insufficient exports of CVP water to meet the Substitute Water delivery requirements to the Exchange Contractors, which we are informed and believe to be largely the result of the implementation of the two subject biological opinions and their RPAs. As a result of these reduced exports, all of the San Joaquin River runoff in 2014 and a substantial portion of the San Joaquin River runoff in 2015 was delivered to the Exchange Contractors, which left Friant Long Term Contractors with a zero allocation in both years.

This circumstance resulted in significant impacts to farms and communities in the Friant service area, including, but not limited to the following: Water users within the Friant Division were forced to rely on groundwater alone for their entire 2014 supply. The results were predictably disastrous. Thousands of acres of productive fruit and nut trees had to be abandoned due to lack of any or sufficient water supply. The total economic loss associated with the loss of nearly 30,000 acres of trees, including lost production until crops could be replanted and begin production again, was over $1 billion. Hundreds of domestic wells went dry. 15 communities in California ran out of drinking water supplies in 2014: 14 of those communities -- Alpaugh, Earlimart, Farmersville, Frazier Park, Huron, Lindsay, London, Madera County, Orange Cove, Pixley, Poplar, Porterville, Strathmore, Tipton, and Terra Bella -- are within the Friant Service Area. Some of these communities depend exclusively on Friant Division supplies to sustain them, while others rely on groundwater sources that are normally boosted by the surface water deliveries; last year, those sources were overtaxed and failed. Homes within these areas remain without adequate water for drinking, basic sanitation, and fire suppression. To this day, numerous families who have lost their domestic wells at their homes have to drive to a public park to shower. Some of these families have been without water in their homes for 7 – 9 months. The impact has been disproportionately large on low-income families that cannot afford to move or dig deeper wells. Impacts for 2015 have not been fully determined, but they are likely to be similar, if not greater.

This magnitude of economic damage from the implementation of the biological opinions cannot be ignored simply because the long-term CalSIM II modeling couldn't discern what was known to have happened in 2014 and 2015. The water supply analysis should be corrected to address the very real likelihood of reductions in Delta supplies to the Exchange Contractors caused by the subject biological opinions' Project modifications, which result in Friant Division water supply reductions, and the concomitant impacts of these supply reductions should be discussed in the Final EIS's resource chapters.

FWA 4

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If you have any questions regarding these comments, please feel free to contact me at sottemoeller@friantwater.org or (559) 306-9986.

Sincerely,

Stephen H. Ottemoeller
Acting Interim General Manager
Friant Water Authority

1C.1.8.1 Responses to Comments from Friant Water Authority

FWA 1: Comment noted.

FWA 2: As described in Section 3.3, Reclamation had provisionally accepted the provisions of the 2008 USFWS BO and 2009 NMFS BO, and was implementing the BOs at the time of publication of the Notice of Intent in March 2012. Under the definition of the No Action Alternative in the National Environmental Policy Act regulations (43 CFR 46.30), Reclamation's NEPA Handbook (Section 8.6), and Question 3 of the Council of Environmental Quality's Forty Most Asked Questions, the No Action Alternative could represent a future condition with "no change" from current management direction or level of management intensity, or a future "no action" conditions without implementation of the actions being evaluated in the EIS. The No Action Alternative in this EIS is consistent with the definition of "no change" from current management direction or level of management. Therefore, the RPAs were included in the No Action Alternative as Reclamation had been implementing the BOs and RPA actions, except where enjoined, as part of CVP operations for approximately three years at the time the Notice of Intent was issued (2008 USFWS BO implemented for three years and three months, 2009 NMFS BO implemented for two years and nine months).

As described in Section 3.3, Reclamation included the Second Basis of Comparison to identify changes that would occur due to actions that would not have been implemented without Reclamation's provisional acceptance of the BOs, as required by the District Court order. However, the Second Basis of Comparison is not consistent with the definition of the No Action Alternative used to develop the No Action Alternative for this EIS. Therefore, mitigation measures have not been considered for changes of alternatives as compared to the Second Basis of Comparison.

FWA 3: Reclamation was directed by the District Court to remedy its failure to conduct a NEPA analysis when it accepted and implemented the 2008 USFWS BO RPA and the 2009 NMFS BO RPA pursuant to the Federal Endangered Species Act of 1973 (ESA) as amended (United States Code [U.S.C.] 1531 ET SEQ.). The BOs did not address the Friant Division of the CVP; therefore, the EIS does not address the Friant Division of the CVP.

FWA 4: The EIS analysis assumes all water deliveries to the San Joaquin River Exchange Contractors are conveyed through the Delta; and water deliveries from Millerton Lake would be similar under all alternatives and the Second Basis of Comparison in all water year types. However, it is recognized that during extreme droughts, water can be delivered to the San Joaquin River Exchange Contractors from Millerton Lake and CVP deliveries to users along the Friant and Madera canals can be reduced. Droughts have occurred throughout California's history, and are constantly shaping and innovating the ways in which Reclamation and DWR balance both public health standards and urban and agricultural water demands while protecting the Delta ecosystem and its inhabitants. The most notable droughts in recent history are the droughts that occurred in 1976-77, 1987-92, and the ongoing drought. More details have been included in Section 5.3.3 of Chapter 5, Surface Water Resources and Water Supplies, in the Final EIS to describe historical responses by CVP and SWP to these drought conditions, including recent deliveries of CVP water to the San Joaquin River Exchange Contractors.