RECLAMATION
Managing Water in the West

Central Valley Project Water Supply Contracts Under Public Law 101-514 (Section 206): Contract Between the U.S. Bureau of Reclamation and the El Dorado County Water Agency, Subcontract Between the El Dorado County Water Agency and the El Dorado Irrigation District, and Subcontract Between the El Dorado County Water Agency and the Georgetown Divide Public Utility District

Draft Environmental Impact Statement/ Environmental Impact Report

Folsom, California
Mid-Pacific Region

Volume I: Draft EIS/EIR
State Clearinghouse No. 1993052016

The proposed project consists of a new CVP M&I water supply contract for the El Dorado County Water Agency (EDCWA) under which Reclamation would provide up to 15,000 acre-feet/year from Folsom Reservoir or points upstream. Currently, EDCWA intends to divide the water equally between the El Dorado Irrigation District and Georgetown Divide Public Utility District.

U.S. Bureau of Reclamation, Mid-Pacific Region
El Dorado County Water Agency

July 2009

Mission Statements

The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to Indian Tribes and our commitment to island communities.

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.

Central Valley Project Water Supply Contracts Under Public Law 101-514 (Section 206): Contract Between the U.S. Bureau of Reclamation and the El Dorado County Water Agency, Subcontract Between the El Dorado County Water Agency and the El Dorado Irrigation District, and Subcontract Between the El Dorado County Water Agency and the Georgetown Divide Public Utility District

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Draft Environmental Impact Statement/Environmental Impact Report

El Dorado County, California

State Clearinghouse No. 1993052016
State of California

***Lead Agencies*:**
NEPA Lead Agency: U.S. Department of the Interior, Bureau of Reclamation (Reclamation)
CEQA Lead Agency: El Dorado County Water Agency (EDCWA)

ABSTRACT

This proposed action/proposed project is intended to implement those parts of Public Law 101-514 (P.L. 101-514), Section 206, pertaining specifically to the El Dorado County Water Agency (EDCWA) and the need for new water supply entitlements for El Dorado County. Under this new contract, up to 15,000 acre-feet per annum (AFA) of Central Valley Project (CVP) Municipal and Industrial (M&I) water would be made available to EDCWA for diversion from Folsom Reservoir, or from an exchange on the American River upstream from Folsom Reservoir. The contract would provide water that would serve existing and future M&I water needs in El Dorado County, establish and preserve entitlements to divert the water in accordance with State Water Resources Control Board (SWRCB) and Reclamation requirements, and provide new water supplies that would justify future construction, operation, and maintenance of new facilities to convey and treat the diverted water. Direct, indirect, and cumulative impacts resulting from the alternatives on the physical, natural, and socioeconomic environment of the region are addressed in the EIS/EIR.

This Draft EIS/EIR is prepared in compliance with the National Environmental Policy Act (NEPA), Reclamation NEPA procedures, and the California Environmental Quality Act (CEQA) and CEQA guidelines. Reclamation intends to adopt this EIS/EIR to satisfy the requirements of NEPA under P.L. 101-514 to execute a CVP Water Service Contract with EDCWA, as described in this EIS/EIR. The EDCWA intends to adopt this EIS/EIR to satisfy the requirements of CEQA for implementation of the proposed P.L. 101-514 CVP Water Supply Contract with Reclamation, as described in this EIS/EIR.

Comments on this document should be submitted by October 16, 2009.

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TABLE OF CONTENTS

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TABLE OF CONTENTS
VOLUME I: DRAFT EIS/EIR

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES
(Included separately as Volume II: Technical Appendices, on CD in the back of this volume)

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EXECUTIVE SUMMARY

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EXECUTIVE SUMMARY

PROPOSED ACTION DEFINED

The Proposed Action for this Environmental Impact Statement/Environmental Impact Report (EIS/EIR) is the execution of a new long-term Central Valley Project (CVP) Municipal and Industrial (M&I) water service contract between the El Dorado County Water Agency (EDCWA) and the U.S. Bureau of Reclamation (Reclamation). EDCWA is the "lead agency" for purposes of compliance with the California Environmental Quality Act (CEQA) (Cal. Pub. Resources Code § 21000 et seq.), and Reclamation is the "lead agency" for purposes of compliance with the National Environmental Policy Act (NEPA) (42 U.S.C. § 4321 et seq.).

This Proposed Action is intended to implement those parts of Public Law 101-514 (P.L. 101-514), Section 206, pertaining specifically to EDCWA and the need for new water supply entitlements for El Dorado County. Under this new contract, up to 15,000 acre-feet per annum (AFA) of CVP M&I water would be made available to EDCWA for diversion from Folsom Reservoir, or from an exchange on the American River upstream from Folsom Reservoir. The contract would provide water that would serve existing and future M&I water needs in El Dorado County, establish and preserve entitlements to divert the water in accordance with State Water Resources Control Board (SWRCB) and Reclamation requirements, and provide new water supplies that would justify future construction, operation, and maintenance of new facilities to convey and treat the diverted water. This EIS/EIR does not analyze at the project-level, the range of potential new facilities that might, in the future, be constructed, as these details and the commitments for these facilities are not yet available, and detailed analyses of the potential impacts of such facilities (including their operations) would be speculative.

EDCWA would make this new CVP water available to two of its member districts along the western slopes of El Dorado County, namely, the El Dorado Irrigation District (EID) and the Georgetown Divide Public Utility District (GDPUD) for use within specified areas within their respective service areas. Figures ES-1 and ES-2 show the regional location of the Proposed Action and the EID and GDPUD service area boundaries, respectively.

P.L. 101-514 does not specify how much of the up to 15,000 AFA would be allocated to each of the two EDCWA member districts that will receive this new water. Consistent with agreements reached between EDCWA, EID and GDPUD, however, it has been tentatively assumed, for purposes of formulating a proposed "project" (CEQA term) or proposed "action" (NEPA term), that the new CVP allocation would be split equally between EID and GDPUD. Figure ES-3 illustrates how diversions are proposed to be allocated between the two member districts.

For purposes of this EIS/EIR, however, several alternative diversion scenarios were developed to best cover the range of potential hydrologic conditions and variances that would accrue with differing allocations. This was undertaken to provide a more thorough environmental review and to address potential demand differences between EID and GDPUD in light of the realities involving current and

anticipated future growth in these areas. The diversion scenarios for the alternatives that covered the Proposed Action included:

- Alternative 2A – Proposed Action Scenario A – (e.g., 7,500 AF each to EID and GDPUD)
- Alternative 2B – Proposed Action Scenario B – (e.g., 15,000 AF to EID)
- Alternative 2C – Proposed Action Scenario C – (e.g., 4,000 AF to EID and 11,000 AF to GDPUD)

Each of the Proposed Action scenarios represented individual alternatives that offered variations of how the Proposed Action would, or could be implemented, again with full consideration of the maximum coverage necessary for environmental review and disclosure purposes. As noted, these variations in allocation apportionment were necessary given the possibility that either EID or GDPUD could, depending on actual realized growth, experience water needs in the future that could surpass the other. To maintain the maximum beneficial use of this new CVP M&I water allocation, wide flexibility in apportionment between the purveyors was considered not only prudent but necessary.

All yearly requested quantities of this new CVP water would be made by EDCWA, on behalf of its member agencies; deliveries to EID and GDPUD may vary from year to year, based on anticipated need by each district. EDCWA would hold the master contract with Reclamation, with EID and GDPUD holding subcontracts with EDCWA and Reclamation. Such an arrangement would allow EDCWA discretion to determine initial allocations between EID and GDPUD and to make modifications to the allocations over time as long as the apportioned quantities stayed within the environmental bounds set by the alternative diversion scenarios addressed in this document. These contracts would be long-term (40-year) CVP water service contracts, subject to all of the same provisions and periodic adjustments authorized under Reclamation Law as the other CVP water service contracts.

Diversions by EID would occur at their existing water supply intake on the south arm of Folsom Reservoir (currently being considered for expansion). No new facilities would be required by EID to divert this new water supply at Folsom Reservoir. Water would be conveyed (pumped) to its existing El Dorado Hills Water Treatment Plant (WTP) under current pumping capacity for treatment and subsequent distribution. In the future, however, it may also be possible and necessary for EID to pump this water further upslope to a new WTP at Bass Lake. Additional conveyance, pumping capacity, related appurtenances, and a new WTP would be required if EID were to extend service from this new contract further up into its service area.

For GDPUD, however, the facility and infrastructure requirements are markedly different. Since it holds no direct point of access (or diversion) from Folsom Reservoir, it would be compelled to negotiate a separate exchange agreement with an upstream purveyor, which also holds current CVP diversion rights from Folsom Reservoir. Under this scenario, GDPUD would exchange its new CVP contract water with this purveyor for a water supply (likely a water right) more readily accessible to them at some upstream location.

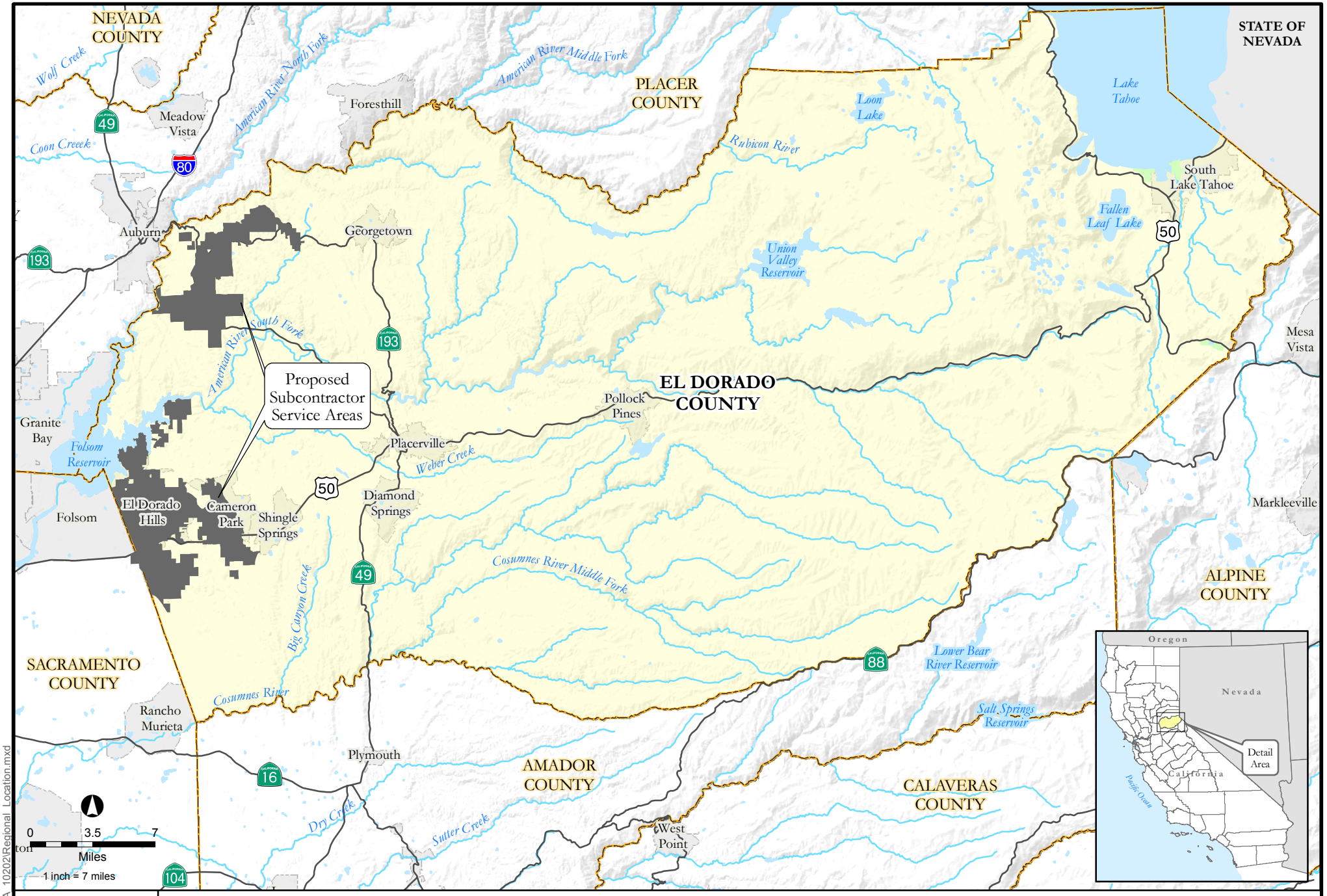

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FIGURE **ES-1**

Regional Location

D50202.00

P.L. 101-514 USBR/EDCWA
CVP Water Supply Contract EIS/EIR

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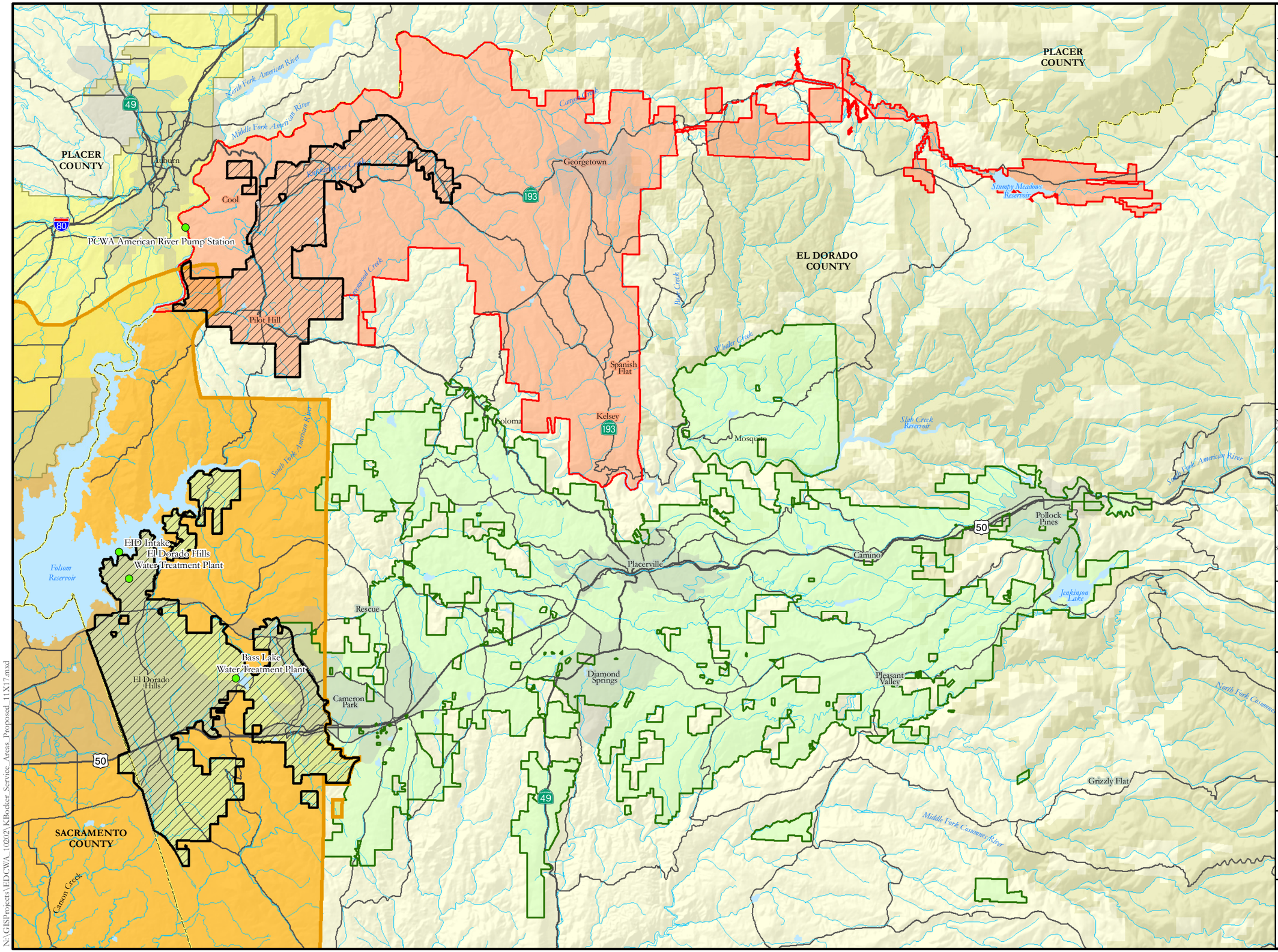
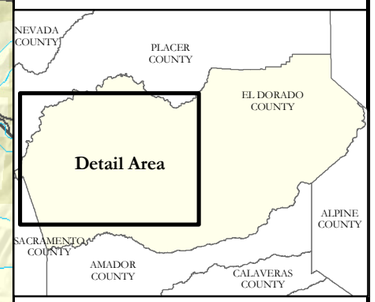
FIGURE ES-2

EID and GDPUD Service Area Boundaries and Proposed Subcontractor Service Areas

P.L. 101-514 USBR/EDCWA
CVP Water Supply Contract EIS/EIR

El Dorado County, CA





- Proposed Subcontractor Service Area
- Georgetown Divide Public Utility District Boundary
- El Dorado Irrigation District Boundary
- Placer County Water Agency District Boundary
- Consolidated Place of Use USBR Central Valley Project

0 2.75
Miles

1 inch equals 2.75 miles

Source: El Dorado County, GDPUD Boundary, August 2001; EID Boundary, June 2004; USBR & CDWR, PCWA Boundary, Oct. 2003; Consolidated Place of Use Boundary, May 2004.

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Project Number - D50202.00

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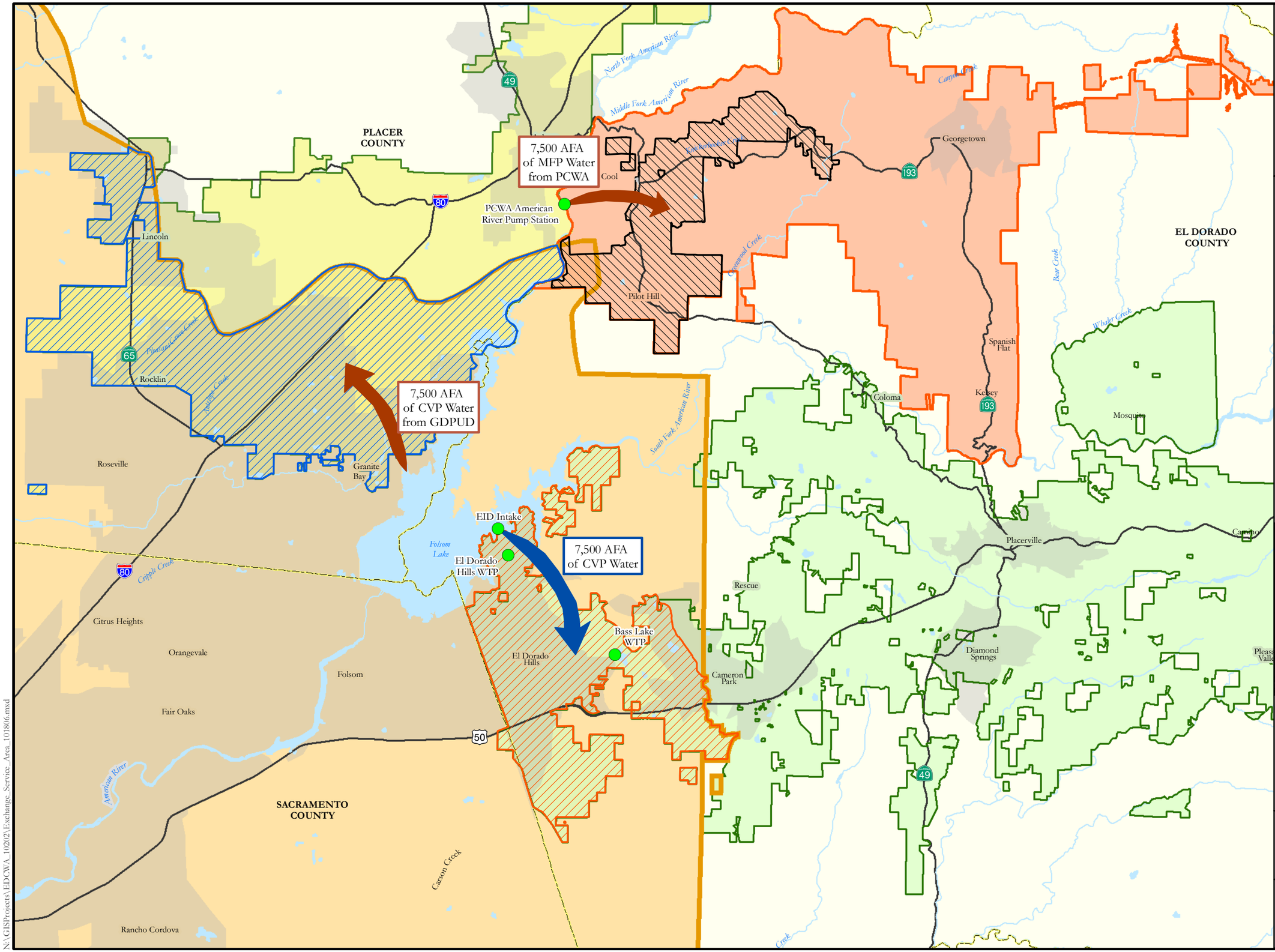
FIGURE ES-3
DIVERSIONS UNDER THE PROPOSED ACTION FEDERAL WATER USE AND POTENTIAL EXCHANGE

P.L. 101-514 USBR/EDCWA
CVP Water Supply Contract EIS/EIR

El Dorado County, CA



Subcontractor's Service Area

Exchange-party's Existing CVP Contractor Service Area **(Contract No. 14-06-200-5082A LTR1)**

Subcontractor's Service Area for New Exchange Water

Georgetown Divide Public Utility District

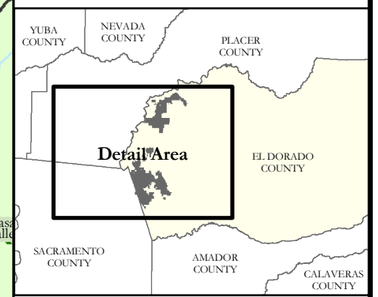
El Dorado Irrigation District

Placer County Water Agency Service Area Zone 1

Consolidated Place of Use USBR Central Valley Project

Potential Exchange Water Use

Subcontractor Direct Water Use



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Miles

1 inch = 2.75 miles

Source: El Dorado County, GDPUD Boundary, August 2001; EID Boundary, June 2004; USBR & CDWR, PCWA Boundary, Oct. 2003; Consolidated Place of Use Boundary, May 2004.

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Project Number - D50202.00

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At this time, the Placer County Water Agency (PCWA) and GDPUD have developed a Draft Memorandum of Understanding for cost sharing of the American River Pump Station construction, which could serve as the new point of diversion for GDPUD under an exchange. Under this scenario, GDPUD would take new water obtained from PCWA at the American River Pump Station on the North Fork American River in exchange for relinquishing a portion of its CVP allocation at Folsom Reservoir (where PCWA has historically diverted CVP water). At present, however, PCWA is not permitted to divert CVP water at Folsom Dam. As part of its amended CVP water service contract, its intended service area was inadvertently revised to include only its Zone 1 service area and omitted its service areas to the San Juan Water District (SJWD) (in Placer County), the City of Roseville, and the Placer Vineyards project in western Placer County. This service area, however, is being reallocated to PCWA as part of the environmental documentation and review process of the Sacramento River Water Reliability Study EIS/EIR. Once completed, PCWA will again have the ability to divert CVP water from Folsom Reservoir.

It is presumed that the likely source of PCWA exchange water would be from its Middle Fork Project (MFP) water rights, which are available along the North Fork American River as it passes the American River Pump Station; the actual quantities negotiated in any such exchange would consider long-term water availability and any differences in institutional reliability (e.g., Reclamation Water Shortage Policy provisions).

For GDPUD to physically acquire the new exchanged water, it would first have to ratify both an exchange agreement as well as the cost-sharing agreement for the American River Pump Station with PCWA. Additionally, it would be necessary for GDPUD to install the necessary pumping equipment at the American River Pump Station and build conveyance facilities from the southern shoreline of the American River Pump Station location, out of the American River canyon, to its service area.

At this time, two long-term options are possible for GDPUD regarding the ultimate location as to where this new water supply would be conveyed. GDPUD could either convey this water to its new Greenwood Lakes WTP (currently under design) which would require significant new additional raw water conveyance or, it could construct an entirely new WTP near the top of the canyon in the general area of Cool. At this time, no decision has been made on these two options and, accordingly, insufficient information exists from which a detailed facilities analysis could be included in this EIS/EIR. Any project-specific construction activities undertaken by GDPUD, therefore, would occur in the future, if or when it is decided, and would involve separate and independent environmental review, disclosure, and approval processes. This EIS/EIR, however, would provide the hydrological instream analysis that could be used at that time to address any water-related impacts associated with the anticipated new diversions associated with the construction and operation of various facilities. Where available, this EIS/EIR could also provide useful background information on the general types of construction- and operations-related impacts associated with those new facilities.

Finally, it should be noted the exchange of CVP and MFP water by GDPUD and PCWA would require a separate action by the SWRCB to change the authorized Place of Use for MFP water rights. The MFP water rights, under this exchange would be used in El Dorado County, which is

currently entirely outside of the authorized Place of Use for the MFP water entitlement. PCWA, as the permitted licensee, would be required to petition the SWRCB to change its authorized Place of Use for its MFP water rights to effectively include those portions within El Dorado County upon which the exchanged water would be served.

This EIS/EIR, to the extent it has focused on CVP/SWP system hydrology at the project-level, can be used by the SWRCB as part of its environmental review documentation to support the Place of Use petition by PCWA. Thus, both PCWA and the SWRCB are "responsible agencies" for purposes of CEQA compliance under this Proposed Action.

PURPOSE AND NEED

The purpose of P.L. 101-514 was to help meet the long-term water needs of El Dorado County. As a recognized initial phase, in a long-term contracting program for EDCWA, the action was appropriate at the time and, with the passage of time, has become increasingly more important to EDCWA. The purpose of the Proposed Action is to acquire a new water supply through the new CVP water service contract authorized by P.L.101-514 in order to meet planned growth within El Dorado County.

Total anticipated M&I needs for EID at the year 2025 are 49,257 AF; this includes 7,484 AF of projected distribution system losses. Total residential demand, at 33,805 AFA, make up the majority of EID's anticipated future M&I demands (i.e., almost 70 percent). Agricultural demands are anticipated to be 24,466 AFA. EID's total water demands (M&I plus AG) is projected to be 73,723 AFA by the year 2025. With a normal year yield available supply of 68,484 AFA, the projected future water need at 2025 is 5,239 AFA. With a safe yield available supply of 61,597 AFA, the projected future water need of EID at 2025 is 12,126 AFA.

Total anticipated M&I needs for GDPUD at the year 2050 are 8,058 AF; this includes 1,058 AF of projected distribution system losses and 98 AF of unaccounted-for beneficial use. Residential demand, relative to non-residential demands (e.g., industrial/commercial) clearly make up the majority of GDPUD's anticipated future M&I demands (i.e., almost 80 percent). GDPUD's agricultural demands are anticipated to be 15,476 AFA by 2050, consistent with the 2007 Water Resources Development and Management Plan land use projections. GDPUD's total water demands (M&I plus AG) is projected to be 23,534 AFA by the year 2050. With a firm yield available supply of 12,200 AFA, the projected future water needs at 2050 is 11,334 AFA. With a safe yield of 10,500 AFA, the projected future water needs at 2050 would be 13,034 AFA.

ALTERNATIVES

Numerous alternatives were evaluated in this EIS/EIR. These resulted from a comprehensive alternative identification and screening process conducted as part of this EIS/EIR development. Each of the alternatives is fully described herein. As a joint NEPA/CEQA document, certain terminology and vernacular had to be reconciled. For the purposes of this EIS/EIR, the term "alternatives" included all actions, even the Proposed Action (under NEPA) and what would typically be referred to separately as the proposed project under CEQA.

Screening criteria were applied to a wide range of new diversion and non-diversion water supplies. The final alternatives that passed the screening process and carried forward for more detailed analysis in this EIS/EIR are:

- Alternative 1A – No-Action
- Alternative 1B – No-Project
- Alternative 2A – Proposed Action Scenario A
- Alternative 2B – Proposed Action Scenario B
- Alternative 2C – Proposed Action Scenario C
- Alternative 3 – Water Transfer
- Alternative 4A - Reduced Diversion (12,500 AFA)
- Alternative 4B – Reduced Diversion (10,000 AFA)
- Alternative 4C – Reduced Diversion (7,500 AFA)

Under NEPA, the No-Action Alternative must contemplate the resulting environmental impacts of not going forward with the proposed federal action. Where the choice of "no action" by a federal Lead Agency, however, could result in predictable actions by others, this consequence of the "no action" alternative should be included in the analysis. "No action" in such cases would mean the proposed activity would not take place, and the resulting environmental effects from taking no action would be compared with the effects of approving the Proposed Action. Under CEQA, the No-Project Alternative must also be analyzed (see CEQA Guidelines § 15126.6(e)). This requirement encourages a Lead Agency to compare the environmental effects of approving a proposed project with the effects of not approving it. Unlike the No-Action Alternative, the No-Project Alternative generally assumes that the land area or current environment would remain in its existing state. This is typically prefaced by the continuation of current plans, available infrastructure, and community services.

Under Alternative 1A, the **No Action Alternative**, as defined under NEPA[1], the proposed new CVP water service contract between Reclamation and EDCWA would not be executed. Notwithstanding no new CVP water supply, it is reasonable to expect that both EID and GDPUD would seek alternative supplies. Taking no action, under NEPA, would not restrict either purveyor from seeking alternative non-federal *actions* to meet their long-term needs. Accordingly, it would be possible for both EID and GDPUD to still pursue and acquire a new water supply from a non-federal entity and without requiring a federal nexus. Hydrologically, a new water right transfer or assignment would be possible, similar to the assumed conditions that would occur under the Water Transfer Alternative. Again, the total quantities requested would be similar with Alternatives 2A through 2C, the various Proposed Action scenarios (i.e., up to 15,000 AFA); the only difference being that it would not be this new CVP water supply.

1 NEPA defines the "no action" alternative as the most likely future condition that could be expected to occur in the absence of the project. (American Rivers v. Federal Energy Regulatory Commission, 187 F.3d 1186, 1199 (9th Cir. 1999) ("American Rivers"); see also 42 U.S.C. § 4332 (2)(c)(iii); 40 C.F.R. § 1502.14)

Under Alternative 1B, the **No Project Alternative**, as defined by CEQA,[2] the proposed water service contract between EDCWA and Reclamation would not be executed. Furthermore, under this alternative, it is assumed that no attempts by EDCWA, EID, or GDPUD to secure a new water supply would occur. Hydrologically, therefore, the baseline conditions across the CVP/SWP (including those within Folsom Reservoir, the lower American River, and the Delta), would be maintained at levels that existed at the time of circulation of the Supplemental Notice of Preparation (NOP) in September 2006.

Under each of Alternatives 2A through 2C, the Proposed Action scenario alternatives, varying quantities would be allocated to EID and GDPUD as discussed previously. The mechanisms of diversion, conveyance, treatment and end-user delivery would be identical under each of the alternatives, the only variation being the quantities assigned to EID and GDPUD. EDCWA would hold the master contract with Reclamation under each of these alternatives.

Under Alternative 3, the **Water Transfer Alternative**, both EID and GDPUD would seek an alternative water supply to the new CVP water contracts. It is assumed in this EIS/EIR that a water right transfer would be possible somewhere within the American River basin. Hydrologically, the quantities under any transfer would be the same as the Proposed Action (i.e., up to 15,000 AFA total), however, there may be long-term variances in delivery allocations depending on the specific nature of the water right transfer.

Under Alternatives 4A through 4C, the **Reduced Diversion Alternatives**, the total amount of the water that could be diverted under the proposed water service contract would be reduced from "up to 15,000 AFA" to variations of decreasing quantity. In other words, diversions would be reduced by increasing increments of 2,500 AFA. For purposes of analysis in this EIS/EIR, it is assumed that water diverted under these alternatives would be allocated evenly to EID and GDPUD. All other conditions associated with diversion, delivery, and treatment would be identical with Alternatives 2A through 2C, the various Proposed Action scenarios.

IMPACT ANALYSIS FRAMEWORK - OVERVIEW

As a new CVP water service contracting action, the primary focus of the environmental and socio-economic analyses was appropriately directed towards potential changes in CVP/SWP coordinated hydrology. This included a detailed assessment of the reservoirs, rivers, Sacramento-San Joaquin River Delta, and associated operations and constraints that make up the CVP/SWP. No new facilities are proposed; therefore, none was contemplated or evaluated under this EIS/EIR. Any new facilities selected and ultimately required to implement the P.L.101-514 water contract would be subject to future and separate environmental review processes. As noted previously, at this time, no

2 The CEQA "no project" alternative is defined as the most likely future condition that could be expected to occur in the absence of the project. More specifically, "[t]he 'no project' analysis shall discuss the existing conditions at the time the notice of preparation is published…as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services." (CEQA Guidelines, § 15126.6, subd. (e)(2)). This formulation is narrower than the NEPA formulation for a "no action" alternative, in that the CEQA concept assumes relatively limited future actions by third party agencies not involved in a proposed project.

adequate or currently applicable level of information exists that would have provided the framework for such an assessment.

For this EIS/EIR, project-level specificity pertained only to the potential changes in CVP/SWP and system-related hydrology. This was accomplished using the highly precise Reclamation planning and operational mass balance, reservoir routing model, CALSIM II. Along with Reclamation's other supporting environmental models (e.g., Reservoir Water Temperature Models, River Water Temperature Models, and Early Life-Stage Salmon Mortality Models) and their Long-Term Gen hydropower generation and capacity model, extensive modeling output were generated based on hindcasted 72-year historic hydrology. The impact framework compared modeled hydrology for any given parameter (e.g., Folsom Reservoir storage) between the Base Condition (assumed for the year 2005 level of development) and the Proposed Action or any of the action alternatives. The difference in simulated hydrology; therefore, represented the potential increment of impact. Modeling work for this EIS/EIR pre-dated the most recent upgrades to CALSIM II in terms of historical record (i.e., the CALSIM II historical record has now been extended to 2003).

In general, both *magnitude* and *frequency* were used as impact determinants in the modeling output assessment. Given that this EIS/EIR had the benefit of a 72-year hydrological record by individual year, it was possible to observe not only annual magnitude changes, but also the frequency with which such deviations from the Base Condition would occur. A large deviation from the Base Condition, while significant for a specific year, may not represent a significant environmental impact if its occurrence was infrequent (over the 72-year period of record). Conversely, where frequent deviations from the Base Condition would occur, but their magnitudes are of limited magnitude, such conditions may also not be indicative of a significant environmental impact. While it is acknowledged that, in reviewing time series data, outliers and deviations from the mean represent important data points, when assessing environmental effects on natural systems, long-term trends are often more important (e.g., variations in long-term monthly means). This is especially true when using data in a comparative mode, as is the case with CALSIM II and its associated environmental models. This EIS/EIR provides detailed discussion of the CALSIM II model, its assumptions, operations, limitations, and applications for this new CVP water contract.

The various resources potentially affected by the various alternatives were categorized as those directly affected by the proposed new water diversions and those indirectly affected. Diversion-Related Resources included the traditional water-related resources such as fisheries resources and aquatic habitat, water supply allocations, hydropower, flood control, etc. Non-Diversion Related Resources included those typically associated with service area activities under approved growth mandates (e.g., land use, transportation, air quality, noise, etc.). Some resources, such as recreation, possess both water-related and non-water related components; certain recreational activities (e.g., fishing, boating, swimming) rely on in-reservoir or instream hydrology while, at the same time, also possess recreational opportunities that are not hydrologically influenced (e.g., parks, playgrounds, outdoor sports facilities, etc.). For such resources, two separate analyses were conducted; one focusing on hydrological effects (using modeled hydrology) and the other focusing on service area effects.

The project area or, as it is sometimes referred (federal action area), therefore, represents the area covered by the integrated CVP as well as those portions of the EID and GDPUD service areas whereupon these new contract water supplies would be delivered. This is the collective geographic area upon which the environmental evaluations of this EIS/EIR were focused. The service areas, known collectively as the Subcontractor service areas represent a small portion of the total service areas for these water purveyors and are limited, primarily to the western regions of their larger service areas. These areas were based on the location of current and immediate future demands and/or constrained by current hydraulic pumping requirements.

Future cumulative effects were also assessed using the CALSIM II hydrological modeling platform. Past, present, and reasonably foreseeable future actions were identified and incorporated into a future cumulative condition within the modeling framework. This was set at year 2025 and incorporated as many of the most recent updates, projects, and institutional developments that are available in the public and private domains. Close coordination with Reclamation, the U.S. Fish & Wildlife Service, National Oceanic and Atmospheric (NOAA) Fisheries, California Department of Fish & Game, and other stakeholders as part of the ongoing Common Assumptions Workshops for the CVP-OCAP was rigorously upheld by the EIS/EIR modeling team.

It should be noted, however, that CALSIM II and other models relying on future prescribed timeframes, though the best analytical tools currently available, are only best guess snapshots in time. Adjusting future CVP/SWP operations and demands within the constructs of CALSIM II must be balanced against the likelihood of actually establishing increased accuracy. Within the context of known and verifiable future actions, it is virtually impossible to *accurately* predict the 2025 scenario. From a nomenclature perspective, a 2025 timeframe, within the context of CALSIM II, is no different than if the model were to identify 2030 or 2040. Moreover, while CALSIM II is extremely *precise*, as noted previously, it may not, in all circumstances, represent the most *accurate* depiction of hydrological changes resulting from small increments of change within the CVP/SWP. As most expert CALSIM practitioners acknowledge, CALSIM II modeling output is useful for observing large-scale, general trend sequences in the hydrologic regime. As discussed in this EIS/EIR, CALSIM II, along with its predecessors, Project Simulation Model (PROSIM) 2000 and PROSIM were originally intended to serve as broad system-wide planning tools to gauge Delta inflow/outflow from which to assign exports. It, nor any of its predecessors, was never intended to serve as an instrument of scrutiny for small-scale (e.g., less than 100,000 AF) changes in system hydrology. Caution, therefore, should be exercised when citing the numerical values or, making specific inferences as to what the quantification actually depicts.

Having disclosed these limitations, the CALSIM II modeling relied upon to support this EIS/EIR and made a part of it, still represents the most up-to-date rendition of the model used today as noted above. Moreover, it is still currently used as the planning and operational model by Reclamation and the California Department of Water Resources. The version used in this EIS/EIR, along with its specific updates, includes many of the newer improvements and new project actions that have occurred over recent years and have been generally accepted since the last CVP Operations Criteria and Plan (CVP-OCAP), Reclamation's guiding document for operating the CVP, which was completed in 2004.

The hydrologic modeling contained in this EIS/EIR insofar as modeling assumptions for project operations and incorporated actions represents the most up-to-date CVP-wide system simulation currently available. While EDCWA supports this rendition of CALSIM II as the most technically and institutionally advanced version of the model currently available, it should be acknowledged that Reclamation has not officially endorsed the complete set of new demand assumptions used in this version of the model. Still, as discussed previously, the model, in terms of its fundamental routing and operational triggers, remains the same.

ENVIRONMENTAL ISSUES OVERVIEW

As noted above, the primary environmental focus (at least in terms of project-level specificity) was on the hydrology of the CVP/SWP, including the Sacramento-San Joaquin River Delta and all associated system operations, constraints, and institutional agreements. Typical of contracting actions of this nature, environmental issues and concerns associated with water-related resources include, but are not limited to the following:

- Reduced reservoir end-of-month storages
- Reduced reservoir water surface elevations
- Reduced littoral habitat in reservoirs
- Reduced flow releases from dams
- Reduced instream flows
- Elevated instream water temperatures
- Reduced frequency in meeting certain regulatory standards
- Elevated early life stage salmon mortality
- Reduced Delta outflow
- Increased X2 position (the two parts per thousand, near bottom, isohaline line)

From an aquatic resource perspective, key issues addressed in this EIS/EIR included the potential for the alternatives to significantly impact aquatic species of primary management concern that inhabit reservoirs and rivers affected by the operation of the CVP and State Water Project (SWP). Of particular concern are those federally and State listed endangered and/or threatened species of fish, which include:

Chinook salmon (*Oncorhynchus tshawytscha)*;

- Sacramento River Winter-Run Chinook salmon (Ecologically Significant Unit) ESU (Endangered);
- Central Valley Spring-Run Chinook salmon ESU (Threatened);
- Central Valley Spring-Run Chinook salmon Designated Critical Habitat;
- Central Valley Fall and Late-Fall Run Chinook salmon Essential Fish Habitat;

Central Valley steelhead (*Oncorhynchus mykiss*);

- Central Valley steelhead (Distinct Population Segment) DPS (Threatened);
- California Central Valley steelhead Designated Critical Habitat;

Delta smelt, (*Hypomesus transpacificus*) (Threatened); and

Green sturgeon *(Acipenser medirostris)* southern DPS (Threatened).

Other fish species recognized as being of management concern included striped bass, splittail, and American shad. For these species and their habitat conditions, reservoir releases, downstream river flows, water temperatures, X2 position, and, in the case of Chinook salmon, early life stage mortality estimates were used by the generated modeling output to evaluate potential impacts.

Riparian habitats, primarily along the lower American and Sacramento rivers are host to a variety of sensitive wildlife species and were also evaluated in this EIS/EIR. These included modeled hydrological changes to river flows and their relationships to near-shore vegetative growth (e.g., cottonwoods) and important backwater ponds and marshes along the riparian corridor along with the potential for their recharge.

Both water supply and hydropower impacts represented potential economic effects, rather than environmental impacts. CALSIM II modeling provided the modeling output required to assess potential impacts on CVP/SWP contractor delivery allocations both north and south of the Delta covering both M&I and Agricultural (Ag) contractors, and also included area-specific allocations to the local purveyors who participated in the Water Forum Agreement.[3] Long-Term Gen modeling output was used to evaluate potential impacts on CVP hydropower generation and capacity at load center, potential effects on Western Area Power Administration (WAPA) preference customers, and assess pumping power requirements for diverters from Folsom Reservoir. Potential flood control and water quality impacts were assessed using modeled data to determine the magnitude of hydrologic changes in reservoir releases and river flows. As a new diversion focused action, it was intuitive that its potential effects on flood control, especially as they may pertain to system-wide reservoir empty space requirements would be beneficial.

Water-related recreational and cultural impacts relied upon reservoir water surface elevation and river flow data to evaluate potential effects on water enhanced recreational activities and facilities, as well as the potential impacts on near-shore or submerged cultural resources within project area waterbodies.

3 The Water Forum Agreement is a regional document signed in 1999 by various water purveyors, business interests, environmental groups, and government agencies participating in the Water Forum; a lower American River based consensus building process that sought to develop a long-term plan for the continued health, vitality and multiple-use benefits of the river. Two co-equal objectives lie at the heart of the Water Forum. These were; 1) ensure a safe, reliable and secured water supply for area's residents, commercial, industrial, and municipal users and, 2) ensure the protection of the river's ecosystems including its aquatic life, riparian habitats, and recreational activities.

Non-water related resources were evaluated as Non-Diversion Related impact analyses and focused on the indirect effects that would occur as a result of providing a new water supply within the service areas of the two water purveyors. Reclamation, EDCWA and both EID and GDPUD are not involved in land use planning; these entities hold no authority or control over any land use decision-making matters. This is rightfully the responsibility of El Dorado County (within the project area) through actions, projects, ordinances and policies approved by the El Dorado County Board of Supervisors. While a range of planning documents, master plans, specific plans, and resource planning documents are available and interactively used, the primary guidance document for in-County resources and community functions such as land use, housing, traffic, growth and utility services is the El Dorado County General Plan. Moreover, environmental impacts associated with the implementation of the General Plan were thoroughly addressed in the El Dorado County General Plan EIR prepared by the County in 2004 and subjected to subsequent analysis and consideration as a result of the El Dorado County General Plan litigation in 2005. Accordingly, this EIS/EIR does not attempt to re-evaluate those same impact analyses covered by the General Plan EIR, which was ultimately the subject of a litigation settlement and is now legally unassailable.

Notwithstanding the existence of the El Dorado County General Plan, its supporting EIR, as well as the many associated policies and plans, this EIS/EIR identifies and discusses the relevant portions of these documents and references special projects implemented by the County to protect, enhance, and, otherwise conserve the natural resources of the County. Where relevant, this EIS/EIR notes the significant impact determinations made in these other documents and, where significant unavoidable impacts were found, this EIS/EIR makes specific mention of those conclusions.

Reclamation does not involve itself in local County land use decision-making or governance at the local level. While acknowledging that water contracts indirectly may affect activities and resources within these jurisdictions, the implementation of such actions (i.e., new water contracts) are typically viewed as accommodating already approved growth. Water contractors have long since adopted this same position, and EDCWA, EID, and GDPUD are no different. Notwithstanding this position, this EIS/EIR takes a conservative view of new water acquisitions (even if supported by General Plan projections for new growth) and accedes to the growth-inducing potential of this project purely for CEQA purposes.

Growth-inducing impacts were addressed through the General Plan assumptions and provisions for planned future growth within the County. The nexus between water supply availability, current and future demands, and planned or anticipated population growth and associated urban/rural development was identified and discussed. Generalized discussions of this nexus, within the context of the County's General Plan provisions, were evaluated; however, it was impracticable to attempt to assign a specific increment of effect between this water supply and the multi-faceted resource driven alternatives of the General Plan and the broad range of effects they presented. This EIS/EIR drew upon the information provided by the County General Plan projections, as well as EDCWA's most recent water supply analyses associated with their Water Resources Development and Management Plan of 2007.

Future potential cumulative impacts for water-related resources relied upon CALSIM II and associated environmental modeling, as noted previously, using a future demand/accretion horizon

with which to compare modeled differences in various hydrologic parameters. All past, present and reasonably foreseeable future actions were included in this future horizon. Building off of the existing hydrologic modeling used in the development of the last CVP-OCAP in 2004, this EIS/EIR modeling team updated several of those model assumptions based on currently accepted changes in regional hydrology, operational practices, and ratified institutional agreements. These nuances are discussed in more detail in the following subsection (Areas of Controversy Known to Lead Agencies). The analysis documented the future cumulative condition for all water-related resources and identified the increment of change between the future no-action, relative to the future cumulative condition.

Finally, this EIS/EIR fully acknowledges the potential threat of climate change and provides extensive background, technical review from the recent scientific literature, and applied discussion of likely climate forced changes on California's water resources and natural resource environment including those specific to El Dorado County and the western slope water purveyors. Climate change effects, in many ways, represent a classic example of future cumulative impacts within the NEPA/CEQA contexts. Climate change discussions included both those associated with the effects of climate change on the natural and socio-economic environments, as well as the effects of the Proposed Action on climate change. Arguably, since the most significant climate change effects would first be observed as changes in system hydrology, any future attempt at establishing or generating more detailed documented evidence would need to first focus on a changing hydrologic baseline. Strict unadjusted application of CALSIM or any other models relying solely on historic hydrology, therefore, would be inappropriate for these purposes.

AREAS OF CONTROVERSY KNOWN TO LEAD AGENCIES

Several issues of controversy associated with the proposed new CVP water service contract were identified over the course of the EIS/EIR development. Since the passage of P.L.101-514 in 1990, the operational hydrology regarding the CVP/SWP has continued to evolve. Several major new project actions involving new system operations, facilities, environmental enhancement/flow standards, Biological Opinions (BiOp), flood control provisions, and regional/local water purveyor diversion agreements have taken place and continue to occur. While many of these actions are at the State-wide scale and, accordingly, have much broader implications than the issues specific to this action (i.e., P.L.101-514 contract), the fact that CVP contracts are intertwined within the context of overall CVP/SWP operations makes acknowledgment of these ongoing developments noteworthy. Moreover, while the term *controversy* is a matter of opinion over which parties may actively disagree, argue, or debate, the report preparers have broadened this section to include matters that have *relevance* to the proposed new contract, but may not necessarily be controversial at this time. In the interests of full and beneficial disclosure, this approach was thought to best meet the intent of NEPA/CEQA.

A complete listing of all of the changes occurring since 1990 would be exhaustive, but the more prevalent ones have been included. Many have been in place for a number of years and have been thoroughly discussed in other documents. This listing illustrates the long-standing nature of this Proposed Action. Suffice to say, at the State and CVP level, new initiatives and/or project actions

that have imparted particular relevance to system-wide hydrology since the authorization of this Proposed Action include, but are not limited to the following:

- Central Valley Project Improvement Act (CVPIA) (specifically, “b2” water)
- Refuge Water Supply Contracts
- CVPIA Programmatic EIS (PEIS)
- Anadromous Fish Restoration Plan (AFRP)
- CALFED Bay-Delta Program
- SWRCB Decision 1641 (D-1641)
- Bay-Delta Water Quality Control Plan
- California Environmental Water Account (EWA)
- Bay-Delta Conservation Plan (BDCP)
- South Delta Improvement Program (SDIP)
- 2004 CVP-OCAP

In summary, the main attributes of these various past and current actions having relevance to the proposed new water contract, as defined, are associated with changes in system hydrology and operations. These actions, such as §3406(b)(2) of the CVPIA or “b2” water, which requires the CVP to dedicate and manage annually 800,000 acre-feet of CVP yield for the primary purpose of implementing the fish, wildlife and habitat restoration purposes and measures of the CVPIA is one example. Some of this b2 water has also been used to meet Bay-Delta Water Quality Control Plan obligations. The AFRP pertains to §3406(b)(1) of the CVPIA which calls for the development and implementation of a program that makes all reasonable efforts to double natural production of anadromous fish in California's Central Valley streams on a long-term, sustainable basis. Since 1995, the AFRP has helped implement over 195 projects to restore natural production of anadromous fish.

It should be clearly noted, however, that the proposed new contracts under this action (and P.L.101-514, generally) have long since been included in the modeling and operational simulations of the CVP/SWP. Numerous individual actions including those of the Department of the Interior have long accepted and included the P.L.101-514 contracts in the environmental analyses supporting these past actions. As an example, the 2004 CVP-OCAP as well as Reclamation’s modeling for its most recent Biological Assessment on the Long-Term Central Valley Project and State Water Project Operations and Criteria Plan (released in August 2008), the California Environmental Water Account EIS/EIR, and the many Reclamation actions in the American River basin over the past 10 years have all included the P.L.101-514 contracts in their future baseline hydrology.

For over twenty years, the CVP/SWP has been operated in a coordinated manner under the Coordinated Operating Agreement (COA) dating back to 1986. Since that time, these coordinated

operations have evolved to reflect, among other things, changing facilities, delivery requirements, and regulatory restrictions. The most recent and applicable document addressing how the COA is implemented in light of these continually evolving circumstances is the CVP Operations and Criteria Plan (or CVP-OCAP). The CVP-OCAP was completed in 2004 and represents the official operational plan of Reclamation for the CVP.

In February 2005, the USFWS issued a BiOp on delta smelt that analyzed the potential effects of the coordinated, long-term operation of the CVP and SWP, as part of Reclamation's revised CVP-OCAP action. Several plaintiffs challenged this BiOp in federal court. The plaintiffs argued, on the essential points, that the BiOps were prepared without the benefit of the most recent data, did not account for climate change effects, unlawfully relied on certain management protocols (e.g., DSRAM), and, did not meaningfully analyze whether the CVP-OCAP would jeopardize the continued existence of listed species both in the Delta and mainstem tributaries. As part of the litigation in the matter of *Natural Resources Defense Council et al., v. Dirk Kempthorne, Secretary of the Interior, California Department of Water Resources, San Luis & Delta Mendota Water Authority et al.,* (E.D. Cal. Case No. 05-CV-01207 OWW), the court held, on May 25, 2007, that the BiOp was indeed "arbitrary and capricious" and "contrary to law". The court maintained that an appropriate interim remedy must be implemented.

The court ordered that the USFWS issue a new BiOp by September 15, 2008 (and later postponed to December 15, 2008). The USFWS issued its final BiOp on December 15, 2008. After reviewing the current status of the delta smelt, the effects of the Proposed Action and the cumulative effects, it was the USFWS's BiOp that the coordinated operations of the CVP and SWP, as proposed, are likely to jeopardize the continued existence of the delta smelt.

On October 22, 2004, NOAA Fisheries issued its BiOp on the proposed long term CVP and SWP CVP-OCAP. This opinion was challenged under *Pacific Coast Federation of Fisherman's Association/Institute for Fisheries Resources et al., v. Carlos Gutierrez, Secretary of Commerce, William Hogarth, National Marine Fisheries Service, NOAA, San Luis & Delta Mendota Water Authority et al*., E.D. Cal. Case No. 1:06-CV-00245-OWW-GSA). On April 26 and May 19, 2006, Reclamation requested reinitiation of consultation based on new listings and designated critical habitats.

It should be pointed out that the current consultation involving Reclamation, USFWS and NOAA Fisheries is for the long-term coordinated operations of the CVP and SWP. Several documents, however, including the NOAA draft BiOp (see below) refer to the OCAP as being the subject matter of these consultations. This is technically incorrect; Reclamation is continuing to operate to its 2004 OCAP and the subject matter of the current consultations is for the long-term coordinated operations of CVP and SWP, not the 2004 OCAP document. For ease of reference by reviewers of this document and, in deference to the wide-ranging use of the term CVP-OCAP, the term CVP-OCAP is carried forward in this EIS/EIR.

In a June 19, 2006, letter to Reclamation, NOAA Fisheries stated that there was not enough information in Reclamation's request to initiate consultation. NOAA Fisheries provided a list of information required to fulfill the initiation package requirements [50 CFR 402.14(c)]. From May

2007, until May 29, 2008, NOAA Fisheries participated in interagency forums, along with representatives from Reclamation, DWR, USFWS, and CDFG, in order to provide technical assistance to Reclamation in its development of a Biological Assessment and initiation package. NOAA Fisheries provided its draft BiOp on listed anadromous fish species potentially affected by the long-term CVP-OCAP on December 11, 2008. It did not, however, include the Reasonable and Prudent Alternatives (RPAs), Incidental Take Statement (ITS), or any of the associated terms and conditions or conservation measures. The final BiOp was released on June 4, 2009. Prior to its release, DWR issued a letter to Reclamation, USFWS, and NOAA Fisheries on May 7, 2009, requesting reinitiation of the delta smelt consultation and enhanced integration between the two separate consultations for delta smelt (under USFWS) and the listed anadromous fish species (under NOAA Fisheries).

Reclamation, while continuing to have concerns, has provisionally accepted the RPA contained in the Biological Opinion on the long-term coordinated operations of the CVP and SWP dated, June 4, 2009. Reclamation will immediately implement the near- term elements of the RPA by modifying the operations as required and continue with the planning and implementation associated with several major actions called for in the RPA, including construction of the Red Bluff Pumping Plant, replacement of the Whiskeytown Reservoir temperature curtain and fish passage improvements on Battle Creek. The provisional acceptance is conditioned on the need to further evaluate and develop many of the longer term actions. These actions are subject to future appropriations, and may be beyond Reclamation's authority, or require agreements from outside parties to implement, which are outside of Reclamation's control. Accordingly, Reclamation anticipates that re-initiation of Section 7 consultation may be needed as these actions are further developed.

Clearly, the revised BiOps for the CVP-OCAP represent a significant undertaking and have the potential to influence the entire State's water management and operational framework for many years. They involve a comprehensive analysis of system operations and the modeling relied upon to support those decisions; the long-term implications of these Opinions for many water users are significant. It is likely that the BiOps on the CVP-OCAP will be subject to continuing litigation. The final outcome of the CVP-OCAP is, therefore, admittedly uncertain.

During the pendency of this re-initiated consultation, Reclamation has committed and has been ordered by the court in the NRDC Case to take no action on approving or implementing several initiatives including: 1) SDIP, 2) Delta Mendota Canal/California Aquaduct Intertie, 3) Lower American River – Flow Management Standard, 4) Long-term EWA, and 5) execution of any long-term CVP water service contract or repayment contracts including, ostensibly, the Reclamation/EDCWA contract authorized under P.L.101-514. It is unclear, however, if the EDCWA contract authorized under P.L.101-514 would be subject to this order.

The long-term contract authorized by P.L.101-514 is the Proposed Action evaluated under this EIS/EIR. EDCWA and Reclamation also have negotiated a temporary one-year contract under the general authorization provided by P.L.101-514. A temporary contract would be a completely separate action from the long-term contract evaluated under this EIS/EIR, but with the completion of this EIS/EIR, all of the NEPA requirements would have been completed and issuance of a temporary contract (and any ensuing temporary contracts) would be able to rely on the environmental analyses

contained in this current document. A temporary contract has been viewed by Reclamation and EDCWA as a "bridging" contract, essentially accommodating the expected water needs of EDCWA, starting in Water Year (WY) 2009 that, but for the CVP-OCAP litigation, the long-term CVP water service contract would have been able to provide. For GDPUD, a place of use petition by PCWA to the SWRCB as described previously would have to be completed.

Notwithstanding the constraints and imposed delays associated with the ongoing CVP-OCAP consultations, this EIS/EIR proceeded with its own select CALSIM II upgrades based on the expert study team's current knowledge and direct participation in a number of local/regional project actions, including direct involvement with CVO and the Common Assumptions Workshop process. Some of these model assumption changes might appear intuitive; however, they are identified since they are departures from the original modeling used to support completion of the 2004 CVP-OCAP. Under the Base Condition hydrology, refinements to the original CVP-OCAP modeling included:

Trinity ROD – higher Trinity River minimum flow requirements of the ROD on the Trinity River Main Stem Fishery Restoration EIS/EIR.

Yuba River Operation – The inflow and diversion at Daguerre Point Dam were updated with values based on SWRCB D-1644 Interim standards on the Yuba River and existing level demands on the diversion developed in support of the Yuba Accord EIS/EIR.

American River Demands – Sacramento River Water Reliability Study (SRWRS) developed new American River demands including significantly higher City of Sacramento demands.

Upper American River simulations – Re-simulation of the Upper American River Model (UARM) to get the appropriate American River inflows to Folsom Reservoir similar to those used in the Common Assumptions (CVP-OCAP modeling development workshop) process.

For the Future Cumulative Condition modeling, the CALSIM II modeling upgrades for this EIS/EIR included:

Yuba River Operation – The Yuba Accord was assumed to be foreseeable and the inflow and diversion were updated based on Yuba Accord standards on the Yuba River and future level demands on the diversion developed in support of the Yuba Accord EIS/EIR.

Water Forum Agreement Cuts – EID and GDPUD cuts were imposed consistent with Reclamation Water Shortage Policy provisions for CVP North of Delta M&I contractors (e.g., the same shortage provisions typically imposed by Reclamation to its M&I contractors were also imposed on EID and GDPUD for its P.L.101-514 water, regardless of whether they are Water Forum Agreement signatories)

Lower American River Flow Management Standard – The Lower American River Flow Management Standard (FMS) was included.

Banks Pumping Capacity – South Delta Improvement Program (SDIP) was assumed not in place. Banks Pumping Plant was limited to 6,680 cfs.

Supplemental Water Rights Project – The El Dorado Water & Power Authority's proposed and pending Supplemental Water Rights Project for an additional 40,000 AFA is assumed to be in place for all future level simulations.

American River Demands – Sacramento River Water Reliability Study (SRWRS) developed new American River demands including significantly higher City of Sacramento demands.

Upper American River simulations – Re-simulation of the Upper American River Model (UARM) to get the appropriate American River inflows to Folsom Reservoir similar to those used in the Common Assumptions (CVP-OCAP modeling development workshop) process.

EID Temperature Control Device – The temperature control device was implemented in the temperature modeling for all future level simulations.

At the same time that the CVP-OCAP and its support modeling are being refined, work is also underway at Reclamation and the Department of Water Resources on the next version of CALSIM (i.e., CALSIM III). To be sure, it remains in the developmental stage, but will likely continue to gain interest over the next several years. A thorough documented analysis of the differences between it and the current CALSIM II model is not yet publicly available.

Apart from the ongoing CVP-OCAP issues, it must be acknowledged that the general level of concern regarding Delta ecosystem health and, Pelagic Organism Decline (POD) in particular, has increased significantly over the past several years. Today, in fact, Delta issues rank as one of the top issues facing California water resources management. The complexity of the Delta *issue,* if one can call it that, is accentuated by the fact that the Delta serves so many vital functions. These include; a natural estuary supporting a wide variety of sensitive flora and fauna, vital life-cycle migration corridor for listed anadromous fish species, recreational focal point for many water enthusiasts and prosperous tourism industry, a new home to an ever expanding Bay-Area and Central Valley population base, long-standing in-Delta farming practices, critical water quality source for southern State interests, essential transfer point for CVP/SWP exports, and as a key inland waterway for commerce traffic destined for the Ports of Sacramento and Stockton. There is overwhelming consensus that the Delta is now critically challenged regarding how best to manage the system among these competing interests. The Governor's *Delta Vision* Blue Ribbon Task Force is a testament to the importance being placed on collaboratively working to resolve this long-standing challenge along with the multi-agency effort to prepare the Bay Delta Conservation Plan.

The decline in Delta ecosystem function, habitat, and species has been thoroughly documented and continues to be exhaustively reviewed by numerous public trust resource agencies, universities, and interested stakeholders. While the causal factors in this decline are several and complex, increased diversions upstream of the Delta and, their collective long-term effect on freshwater flows into the Delta have been identified as one significant contributor to the observed decline in Delta health. Any proposed project that diverts water from ultimately entering the Delta will continue to be closely examined for its potential effects on this essential estuary. It should be clearly noted that export pumping and upstream depletions represent two of several factors that, collectively, have resulted in adverse environmental effects on the fragile Delta ecosystem. No one factor is solely responsible.

Within the American River basin or, having specific implication to either Folsom Reservoir or the lower American River, numerous actions have occurred since the passing of P.L.101-514 on November 4, 1990. These have included, to name but a few:

- Folsom Interim Re-Operation (400-670 TAF)
- Reclamation/PCWA American River Pump Station Project
- New Shutter Re-Configurations at the Folsom Power Penstock Intakes
- Water Forum Agreement including all Purveyor-Specific Agreements (and the Dry-Year "Wedge")
- Sacramento River Water Reliability Study (SRWRS)
- Folsom Dam Safety/Flood Damage Reduction
- Development of the Lower American River – Flow Management Standard

These actions, either directly or indirectly, each have some influence on Folsom Reservoir, the lower American River, and the operational decision-making regarding flow releases, temperature targets, reservoir coldwater pool management, dry-year delivery allocations, and flood control operations.

The completion of the environmental review and approval for the Reclamation/PCWA American River Pump Station Project in 2002, which were based on the desire to discard the temporary pumps in favor of a permanent pumping plant on the North Fork American River, was a significant accomplishment for Reclamation and PCWA. With the completion of final construction in 2008, PCWA now possesses permanent access to its North Fork American River diversion location. This paves the way for GDPUD to also gain access to the American River at the location of the American River Pump Station, the site of a potential exchange with PCWA for GDPUD's portion of the new CVP water service contract. As noted previously, there are several agreements and regulatory provisions that GDPUD and PCWA would have to negotiate and initiate in order for GDPUD to begin planning their own infrastructure at this location. Additionally, as previously noted, this exchange is contingent upon the completion of the environmental review and approval process for the Sacramento River Water Reliability Study in order to secure the revised CVP service area for PCWA.

Reclamation's operational strategies at Folsom Dam are, in part, directed toward water temperature preservation (i.e., Folsom Reservoir coldwater pool). Virtually all water released into the lower American River passes through Folsom Dam's three hydropower penstock intake shutters, of which there are nine. Access to the reservoir's coldwater pool once it is below the intake shutters, is accomplished through releases from Folsom Dam's lower river outlets which effectively bypasses power generation.

Reclamation has the ability to preferentially access various levels of the reservoir at these three hydropower penstock intake shutters. These were originally designed in a 1-1-7 configuration; where the top shutter could be opened independent of the others, as could the second shutter, while the remaining 7 shutters could only be opened as one unit. Reconfigured in 1994 under a 3-2-4

ganging configuration, these shutters now provide greater control over the depth of intake, and thus, the temperature of the water being released from the dam. Reclamation also has the ability to "blend" water between the three hydropower penstock intakes, adding yet more operational flexibility towards optimizing coldwater pool management and resultant downstream temperatures.

Coldwater pool management in Folsom Reservoir continues to represent an important component of annual and seasonal lower American River operations. Coldwater is defined as that at 56ºF or below[4]. Constrained in some respects by the existing flood encroachment curve for the reservoir (currently operating under an interim 400,000 AF to 670,000 AF empty space reservation), annual refill to storage can vary. Where low reservoir refill occurs (owing to decreased winter precipitation totals), the operating pool is limited, thermal stratification occurs earlier, and total *coldwater* pool volume can end up in short supply. This was the situation as it unfolded during the most recent 2007 WY. Any continued and new future diversions from Folsom Reservoir will require close operational planning with Reclamation, the Lower American River Operations Group, and Water Forum purveyors, especially in years when the coldwater pool is limiting. Currently, Reclamation strives to meet a 60ºF or less mean average daily water temperature as early in the fall-run season as possible.

The Water Forum Agreement included purveyor-specific agreements (PSAs) for numerous water purveyors signatory to the Agreement. While participating in the Water Forum process, neither EID nor GDPUD executed purveyor-specific agreements due to legal challenges to the El Dorado County General Plan. Additionally, as a non-purveyor, EDCWA could not enter into a purveyor-specific agreement. The dry-year "wedge" of the Water Forum Agreement was, and still is, a significant element of the Agreement. Purveyors have met their obligations under the dry-year "wedge"[5] provisions of their individual PSAs. It was always intended that the various PSAs negotiated through the Water Forum Agreement would be codified in some regulatory form; the original intent was to have each PSA drafted as a diversion agreement with Reclamation (for those drawing from Folsom Reservoir). These have yet to be executed. Inclusion of the Water Forum PSAs into Reclamation modeling for the CVP-OCAP was also an issue; Reclamation took the position that without regulatory standing, such voluntary diversion restrictions (i.e., PSAs) could not be assumed to represent a realistic baseline condition.

Another issue of particular note regarding the Water Forum Agreement and its EIR are the modeling assumptions that went into its analysis. The Agreement essentially represented a future cumulative condition for the American River basin and, as such, its evaluation included all known diversions, allocations and other water project deliveries assumed to occur over the planning horizon (to the year 2030). The modeling, therefore, included the P.L101-514 contracts for both Sacramento and El Dorado counties (i.e., it included the 15,000 AFA diversions contemplated by this current action). The Agreement's mitigation (e.g., lower American River Habitat Management Element), out-year

4 Under the AFRP prescriptions and LAR FMS, it is acknowledged that Reclamation shall operate Folsom/Nimbus dams to meet daily average water temperatures of 60º F or less, and striving to achieve 56º F or less as early in the season as possible at Watt Avenue during the October 11 to December 16, fall-run

5 The Water Forum "wedge" is the vernacular for the dry-year cuts voluntarily adopted by signatory purveyors to the Agreement. It sets out allowed diversion quantities in any year based on water-year type, which is defined by the projected unimpaired inflow to Folsom Reservoir.

diversion totals, and proposed new fish-friendly flow standard for the lower American River (see Lower American River – Flow Management Standard, below) were all predicated on the modeling results for the Agreement. One could make the argument that the P.L.101-514 contracts, hydrologically, were fully mitigated insofar as Folsom Reservoir and lower American River aquatic effects were concerned.

A notable new action for the American River is the proposed Lower American River – Flow Management Standard (or LAR FMS). Resulting from one of the seven elements of the Water Forum Agreement, the LAR FMS is the culmination of several years of continued work on developing a fish-friendly flow pattern for the lower American River; its predecessors included several iterations during the development of the Water Forum Agreement (e.g., F-Pattern). The new recommended minimum flow requirements in the lower American River below Nimbus Dam would vary throughout the year in response to the hydrology of the Sacramento and American River Basins and based on various hydrological indices typically used by both Reclamation and DWR. This new flow standard would, when complete, be submitted to the SWRCB with a request to amend Reclamation's minimum flow release obligations under D-893. Reclamation, while supporting a new flow regime for the lower American River, has yet to proceed with moving this forward in light of the uncertainties surrounding the CVP-OCAP and Wanger litigation.

Specifically, for the American River, the NOAA Fisheries Biological Opinion RPA identified a flow management standard for implementation. Reclamation is still evaluating this flow standard. The RPA also includes a requirement to develop a genetic management plan for Nimbus Fish Hatchery, a new target temperature objective of 65°F at Watt Avenue and a flow threshold of 4,000 cfs. Specific cold water pool temperature management facilities and actions have been identified in the RPA for study and implementation as well as the planning and implementation of fish passage facilities at both Nimbus and Folsom Dams. Reclamation is working to better understand, in detail, how all of the RPA requirements CVP wide, may affect the CVP and its operations.

The El Dorado Water & Power Authority (EDWPA), which consists of the County of El Dorado, the El Dorado County Water Agency, and the El Dorado Irrigation District, is pursuing a long-term supplemental water supply through water right filings (the Supplemental Water Rights Project) before the State Water Resources Control Board (SWRCB). The Supplemental Water Rights Project is a separate and distinct project from the new CVP water service contract authorized under P.L. 101-514. At this time, the Supplemental Water Rights Project is a duly noticed and ongoing effort consistent with the processes defined under both CEQA and the Water Code. Under the regulatory provisions of both NEPA and CEQA this EIS/EIR is required to include the Supplemental Water Rights Project in its evaluation of potential future cumulative impacts as one of many reasonable and foreseeable actions. Accordingly, its inclusion in the hydrological modeling for the future cumulative impact analysis of this current EIS/EIR was required by CEQA. Its inclusion for such environmental review purposes, however, does not mean or imply that the U.S. Bureau of Reclamation supports the Supplemental Water Rights Project or that any future discretionary actions available to Reclamation are waived.

With the completion of the Reclamation/Corps of Engineers Flood Damage Safety/Flood Damage Reduction EIS/EIR in 2007, a significant milestone was reached in the long-term safety of Folsom

Dam and Reservoir. A significant feature of this project is the proposed auxiliary spillway along the south abutment near the left wing dam. Early construction activities were initiated in 2008.

Current flood control operations for Folsom Dam and Reservoir (including regulating criteria) are set out in the U.S. Army Corps of Engineers (Corps) *Folsom Dam and Lake, American River, California Water Control Manual* (1987). In 1996, the Interim Flood Control Plan Diagram for Folsom Reservoir (a.k.a. Interim Flood Operations) was developed cooperatively between Reclamation and the Sacramento Area Flood Control Agency (SAFCA). As noted previously, a significant component of the Interim Flood Operations was the variable 400,000 to 670,000 AF empty space storage requirements for Folsom Reservoir which changed the then authorized storage space which was fixed at 400,000 AF. As a 5-year Interim Agreement, this was intended to increase the available flood storage space in Folsom Reservoir to a maximum of 670,000 AF depending on upstream storage conditions providing ostensibly, greater flood storage relief during times of high runoff or reservoir inflow. Upon expiration in 2000, this Interim Agreement was extended for two years. From 2002 to 2004, however, no agreement was in place.

In 2004, a new agreement was negotiated between Reclamation and SAFCA to continue with the 400,000-670,000 AF *variable flood storage* operation unless and until such time as the Corps implemented a new water control manual and associated new flood control diagram. Under this current agreement, the operational criteria (e.g., 400,000-670,000 AF variable flood storage) will expire in 2018. As part of this joint federal effort, the Corps will be developing an Updated Flood Management Plan and Flood Control Manual (e.g., a new flood control diagram) for Folsom Reservoir.

The Sacramento River Water Reliability Study (SRWRS), also known as the Sacramento River Diversion Feasibility Study, was authorized in December 2002 under P.L.106-554. The SRWRS is intended to develop a series of water supply components, consistent with the Water Forum Agreement, designed to meet the long-term water supply needs of the Placer-Sacramento County region and to preserve the riparian and instream elements of the lower American River. Reclamation is the Lead Federal Agency for NEPA, and PCWA is Lead State Agency for CEQA. PCWA, Sacramento Suburban Water District (SSWD), and the cities of Roseville, and Sacramento are cost-sharing partners.

One of the proposed facility components (known as the Elkhorn Diversion Alternative) involves constructing a new joint diversion facility on the Sacramento River upstream of the mouth of the lower American River, along with on-site treatment facilities to serve the cost-sharing partners. The diversion facility would consist of expanding the existing Elkhorn Diversion owned by the Natomas Mutual Water Company (NMWC) on the east bank of the Sacramento River at approximately river mile 73.3, or constructing a new diversion near the existing Elkhorn Diversion. Water treatment, storage, and pumping facilities would be located near the river. Also, a transmission line would connect to the west end of the existing Cooperative Transmission Pipeline/Northridge Transmission Pipeline in Antelope to serve SSWD, and an extension of that line would be built north to the service areas of the City of Roseville and PCWA. A separate transmission line would extend south to connect to Sacramento's existing distribution system. Another option is for a stand-alone new water treatment plant at Elverta.

The additional water supplies considered in the SRWRS for each cost-sharing partner include: (1) additional water supply of up to 35,000 AF for PCWA's M&I demand with a treatment capacity of 65 million gallons per day (mgd); (2) additional water supply of up to 29,000 AF in Water Forum average, drier, and driest years for SSWD's M&I demand and groundwater stabilization program with a treatment capacity of 15 mgd, (3) additional water supply of up to 7,100 AF for the City of Roseville's M&I demand with a treatment capacity of 10 mgd, and (4) additional water supply of up to 58,000 AF with a water treatment capacity of 165 mgd for the City of Sacramento's M&I demand. Note the consistency of these demands with the Water Forum Agreement PSAs.

Consistent with the Water Forum Agreement, the SRWRS project, when completed, will support the long-term intent of the Agreement; namely, to move a significant portion of the current diversions taken from Folsom Reservoir (and hence, the lower American River) downstream to the Sacramento River without adverse supply allocation effects on the Water Forum purveyors. The SRWRS project would meet that intent. Additionally, with reduced diversions from the American River basin, the lower American River habitat and ecosystem improvement objectives as part of the Water Forum Agreement can also be met.

Locally, within El Dorado County, several initiatives have been completed since the passing of P.L.101-514. Of particular note is the current County General Plan. The Board of Supervisors previously adopted a General Plan on January 23, 1996. However, a lawsuit challenging that General Plan was filed. The Court held that, although the substance of the General Plan satisfied the statutory requirements of law, the environmental review process followed in the adoption of the General Plan did not comply with certain requirements of CEQA. As a result, the 1996 General Plan was set aside and the County was directed to readopt a General Plan in conformance with the Court's decision. From July 19, 1999, when the Court's judgment was entered, the County's land use regulatory authority was defined by the terms of a court order (the "Writ") that was issued on that date. The Writ also required court review of any new General Plan adopted before it could become effective to ensure that the deficiencies identified by the Court had been corrected.

The El Dorado County Board of Supervisors adopted a new General Plan for the County on July 19, 2004 after a lengthy process that included noticed public hearings before the Planning Commission and Board of Supervisors, a recommendation by the Planning Commission, and environmental review under CEQA, including preparation of a new environmental impact report. However, following adoption of the 2004 General Plan, a referendum petition containing the requisite number of signatures was filed which had the effect of "suspending" the Board's approval of the 2004 General Plan. As a result of the referendum petition, the 2004 General Plan was not to become effective unless it was approved by a majority of the voters at a special election.

On March 15, 2005 the voters of El Dorado County approved the referendum on the plan adopted by the Board of Supervisors. This provided the opportunity for the County to return to the Sacramento County Superior Court to have the writ of mandate in the matter of *El Dorado County Taxpayers for Quality Growth, et al. v. El Dorado County Board of Supervisors and El Dorado County* lifted. On September 1, 2005 the Court ruled that the County had satisfied every term of the writ and it was discharged. The Court's ruling was appealed by the plaintiffs. On April 18, 2006, a Settlement

Agreement was entered into by the County and the plaintiffs, settling the lawsuit and resulting in the withdrawal of the appeal.

The 2004, now-adopted General Plan: *A Plan for Managed Growth and Open Roads; A Plan for Quality Neighborhoods and Traffic Relief,* includes an introduction and nine elements. The Elements are: Land Use, Transportation and Circulation, Housing, Public Services and Utilities, Public Health, Safety and Noise, Conservation and Open Space, Agriculture and Forestry, Parks and Recreation, and Economic Development. Each General Plan Element includes an Implementation Program with an approved list of implementation measures that are linked to annual work schedules. Overall, the 2004 General Plan has a total of 234 implementation measures which are the collective responsibility of a number of County departments. Fifty-five of these measures are to be enacted on an ongoing basis, and 57 were scheduled to be completed within one year of General Plan adoption.

Pertaining to water supply, the Public Services and Utilities Element of the General Plan, GOAL 5.2: WATER SUPPLY states:

> The development or acquisition of an adequate water supply consistent with the geographical distribution or location of future land uses and planned developments.

A clear goal of the General Plan is the development or acquisition of an adequate water supply to meet future needs. Of particular relevance is Policy 5.2.1.15 which states;

"The County shall support the efforts of the County Water Agency and public water providers to retain existing and acquire new surface water supplies for planned growth and existing and planned agricultural uses within El Dorado County. New surface water supplies may include wastewater that has been reclaimed consistent with state and federal law." [Emphasis Added]

Other notable policies within the Public Services and Utilities Element pertaining to water supply can be found in the following:

> Policies
>
> 5.2.1.1 The El Dorado County Water Agency shall support a County-wide water resources development and management program which is coordinated with water purveyors and is consistent with the demands generated by the General Plan land use map.
>
> 5.2.1.13 The County shall encourage water purveyors to design water supply and infrastructure projects in a manner that avoids or reduces significant environmental effects to the maximum extent feasible in light of the water supply objectives of a given project.
>
> 5.2.1.14 The County, in cooperation with the Water Agency and water purveyors, shall collect and make available information on water supply and demand.

EDCWA has recently updated its final *Water Resources Development and Management Plan* (Plan). This Plan is designed to coordinate water planning activities within El Dorado County and provide a blueprint for actions and facilities needed to meet the County's water needs into the future. The major water agencies participating in development of the plan are: EDCWA, EID, GDPUD, Grizzly

Flat Community Services District, South Tahoe Public Utility District and the Tahoe City Public Utility District. The Plan addresses the water supply needs of the entire County including those areas presently not served by a purveyor, and identifies potential technical, environmental and institutional constraints for each water resource alternative.

Existing water supply infrastructure and operations have been able to absorb substantial urban growth in western El Dorado County, primarily within the EID service area. However, water demand forecasts indicate that considerably more water will be needed to support approved growth in the County and projected increases in agricultural demands. Based on the approved 2004 General Plan and refinements made to the agricultural projections, the estimated total water demand in the County in 2025 will be roughly 125,500 AF. Most of this demand would occur on the western slope of the county, while about 10 percent of the future demand would be in the Tahoe Basin.

Buildout of the General Plan will require a total water supply of about 194,820 AF. Based on the 2004 General Plan and refinements made to the agricultural projections, the additional water supply needed by 2025 is calculated to be 34,276 AF, and a total of 103,518 AF of additional water supplies will be needed to meet projected buildout demands. The Plan assumes a safe yield delivery of 5,625 AF to each of EID and GDPUD from the new CVP water service contract authorized under P.L. 101-514, which is the subject of this Proposed Action. Accordingly, even with these new CVP contracts in place, an additional 23,000 AF of new water supplies are needed to meet the County's 2025 General Plan growth projections and associated water needs.

SUMMARY OF SPECIFIC POTENTIAL IMPACTS

This summary, including Table ES-1 below, provides an overview of the analysis contained in Chapters 5 through 9 of this EIS/EIR. It also includes correlated information covering the following (as required under CEQA): (a) effects found to be less than significant; (b) potential areas of controversy; (c) significant impacts; (d) mitigation measures to avoid or reduce identified significant impacts; (e) significant unavoidable impacts; and (f) alternatives.

Table ES-1, Summary of Project Impacts and Mitigation Measures, has been organized to correspond with environmental issues discussed in Chapter 5.0 (Environmental Consequences). For each alternative analyzed in Chapter 5.0, the summary table identifies the specific action impact, level of significance before mitigation, any proposed mitigation measures, and the level of significance after mitigation.

For most impacts, there is little, if any, distinction between alternatives. This is due to several reasons. First, the total project increment was 15,000 AFA; by CVP/SWP system operational standards this represented a small, almost indiscernible hydrological change. Second, the CALSIM II model, while extremely precise in its ability to quantify simulated changes in hydrology could not, in most instances, reflect notable changes in monthly system hydrology based on a 15,000 AFA diversion (even when the analysis forced the 15,000 AF into three months). Third, each of the Reduced Diversion Alternatives, all with increments less than 15,000 AFA revealed no changes (both between each other and, relative to the base condition). Fourth, the Water Transfer Alternative, by definition, assumed a diversion of equal quantity with Alternatives 2A through 2C (the

Proposed Action scenarios) differing only in the possible entitlement type; therefore, hydrologically, its impacts under CALSIM II were no different than those of Alternatives 2A through 2C. And fifth, the same conditions applied for the No-Action Alternative which assumed again, that without a new CVP water contract, EDCWA would seek an alternative supply allocation. CALSIM II could not detect or differentiate any changes under this alternative with those of Alternatives 2A through 2C.

So, unlike larger Reclamation projects where, significant variation can occur between alternatives (not only in facility location, design, capacity, and function, but also in terms of the quantities of water under consideration), these conditions simply did not exist for this project and environmental review.

Table ES-1, therefore, strove to present the results of the environmental evaluation in a reader-friendly and comprehensible manner. With an aim to reduce redundancy and, in due consideration of provisions in CEQA Guidelines § 15123 (b)(1), alternatives were categorized together if they were shown to impart identical environmental effects rather than list the comparative differences between alternatives which, as noted, in most cases, simply did not exist. The reader can easily view the full results of the environmental analysis, by alternative, by referring to the appropriate header identification for the resource of interest as well as the alternative(s) in question in Table ES-1. Abbreviations for impact determinations are: NI – No Impact; LS – Less than Significant; S – Significant; SU – Significant and Unavoidable.

SIGNIFICANT UNAVOIDABLE IMPACTS

The project-specific significant unavoidable diversion-related impacts of the proposed new CVP water service contracts are limited to those of an economic nature and related to hydropower generation and associated costs. They are:

- The proposed new contract would result in changes to CVP hydropower generation and capacity; this would impart an economic impact on power suppliers.
- The proposed new contract would result in additional pumping power requirements, over the long-term, to those purveyors relying on Folsom Reservoir and the current urban water supply intake.

There would be significant and unavoidable impacts resulting from growth that would be accommodated by the proposed water supply contracts. These significant and unavoidable impacts were fully evaluated in the certified El Dorado County General Plan EIR. Resources that would be affected are: land use, agriculture and forestry, visual resources, traffic and circulation, water, utilities, public services, human health and safety, noise, air quality, and biological resources.

TABLE ES-1

SUMMARY OF PROJECT IMPACTS AND MITIGATION MEASURES (CEQA)

Impact		Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
5.4 Water Supply (Diversion-Related Direct Impacts)				
5.4-1	**Effects on delivery allocations to CVP customers.**	LS	None required – All Alternatives	NA
5.4-2	**Effects on delivery allocations to SWP customers.**	LS	None required – All Alternatives	NA
5.4-3	**Effects of delivery allocations to purveyors of the Sacramento Water Forum Agreement as provided under their Purveyor-Specific Agreements (PSAs).**	LS	None required – All Alternatives	NA
5.4-4	**Reduction in pumping at the State pumps for annual delivery to South of Delta contractors.**	LS	None required – All Alternatives	NA
5.4-5	**Result in operations inconsistent with the existing or anticipated CVP-OCAP or COA.**	LS	None required – All Alternatives	NA
5.4-6	**Result in an inadvertent reduction in groundwater aquifer yields in any of the North, Central or South area aquifers.**	LS	None required – All Alternatives	NA
5.5 Hydropower (Diversion-Related Direct Impacts)				
5.5-1	**Effects on CVP hydropower generation and capacity.**	S	**Alternatives 2A through 2C, Alternatives 4A through 4C, Alternative 3, and Alternative 1A** would impart economic effects on power supply. There are no feasible mitigation measures that would reduce the economic impact to a less-than-significant level. Consequently, for full disclosure reasons, this EIS/EIR acknowledges that power supply impacts are considered economically significant and unavoidable. For purposes of CEQA, however, the effect is environmentally less-than-significant, and does not represent a significant unavoidable environmental impact.	SU
5.5-2	**Effects on CVP hydropower generation and capacity.**	NI	**Alternative 1B** would impart no change/impacts.	NA
5.5-3	**Effects on annual pumping power costs to purveyors relying on the Folsom Reservoir urban water supply intake.**	S	**Alternatives 2A through 2C, Alternatives 4A through 4C, Alternative 3, and Alternative 1A** would impart significant unavoidable economic impacts. These are considered unavoidable given that the process of delivering water using the	SU

LS = Less than Significant S = Significant NI = No Impact PS = Potentially Significant SU = Significant Unavoidable NA = Not Applicable

TABLE ES-1

SUMMARY OF PROJECT IMPACTS AND MITIGATION MEASURES (CEQA)

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		Folsom Reservoir facilities necessitates pumping and consequently, the use of electrical energy. The relatively small size of Folsom Reservoir, coupled with a large storage reservation for flood control, constrains operations from achieving large carryover storage volumes. Any additional use of water from Reservoir that alters the timing of storage, affects pumping requirements and these new CVP water service contracts are no exception. Pumping energy economic impacts are unavoidable and are borne by the Folsom Reservoir water diverters themselves.	
	NI	**Alternative 1B** would impart no change/impacts.	NA
5.5-3 Change in hydropower generation opportunities in the upper American River basin.	NI	None required – All Alternatives	NA
5.6 Flood Control (Diversion-Related Direct Impacts)			
5.6-1 Substantial change in the ability to adhere to the flood control diagrams for Folsom Reservoir under current operation or to its long-term re-operation.	NI	None required – All Alternatives	NA
5.6-2 Substantial change in floodplain characteristics that would increase the exposure of persons or property to flood hazards including a substantial change in the hydraulic stress imparted to lower American River levees or lower Sacramento River levees.	LS	None required – All Alternatives	NA
5.6-3 Result in operations inconsistent with the Joint Federal Project for Folsom Dam (including the Folsom Dam Safety/Flood Damage Reduction Project).	NI	None required – All Alternatives	NA
5.6-4 Result in operations inconsistent with SAFCA and Water Forum levee improvement/stabilization work in the lower American River corridor.	NI	None required – All Alternatives	NA

LS = Less than Significant S = Significant NI = No Impact PS = Potentially Significant SU = Significant Unavoidable NA = Not Applicable

TABLE ES-1

SUMMARY OF PROJECT IMPACTS AND MITIGATION MEASURES (CEQA)

Impact		Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
5.7 Water Quality (Diversion-Related Direct Impacts)				
5.7-1	**Effects of increased diversions and changes in CVP operations on water quality in reservoirs and rivers.**	LS	None required – All Alternatives	NA
5.7-2	**Effects on Delta water quality or operations contrary to the mandate of the Bay-Delta Water Quality Control Plan, California Inland Surface Waters Plan, Bay-Delta Pollutant Policy Document and Accord, Anti-Degradation Policy, and the pending Bay-Delta Conservation Plan.**	LS	None required – All Alternatives	NA
5.8 Fisheries and Aquatic Resources (Diversion-Related Direct Impacts)				
5.8-1	**Effects on warmwater fisheries in Shasta and Trinity reservoirs.**	LS	None required – All Alternatives	NA
5.8-2	**Impacts on Shasta and Trinity reservoirs' coldwater fisheries.**	LS	None required – All Alternatives	NA
5.8-3	**Flow-related impacts on fisheries resources in the upper Sacramento River.**	LS	None required – All Alternatives	NA
5.8-4	**Temperature-related impacts in the upper Sacramento River.**	LS	None required – All Alternatives	NA
5.8-5	**Temperature related impacts on fisheries resources in the lower Sacramento River.**	LS	None required – All Alternatives	NA
5.8-6	**Effects on Delta fisheries resulting from changes in inflow hydrology and water quality changes.**	LS	None required – All Alternatives	NA
5.8-7	**Flow impacts on fisheries resources of the North Fork American River downstream of the American River Pump Station site.**	PS	<u>Alternative 2C - Proposed Action – Scenarios C</u> Under Alternative 2C - Proposed Action – Scenario C, reductions in simulated mean monthly flows in the North Fork American River downstream of the Auburn Dam site, relative to the Base Condition were noted. Although small, these flow reductions could represent a significant impact on resident fisheries and associated aquatic resources within this reach of the North Fork. *Potential mitigation measures may include:*	LS

LS = Less than Significant S = Significant NI = No Impact PS = Potentially Significant SU = Significant Unavoidable NA = Not Applicable

TABLE ES-1

SUMMARY OF PROJECT IMPACTS AND MITIGATION MEASURES (CEQA)

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		1. *Altered seasonal diversion pattern; thus, avoiding a peaked mid-summer diversion (August through October as modeled);* 2. *Re-allocating the diversion quantities between EID and GDPUD, so as to follow either the Scenario A or B allocations; or* 3. *Reduction in the overall diversion total as represented by the Reduced Diversion Alternative.* **For Alternatives 2A and 2B - Proposed Action – Scenarios A and B, Alternatives 4A through 4C - Reduced Diversion Alternatives, Alternative 3, and Alternative 1A – No Action Alternative -** None required.	
5.8-8 Flow impacts on fisheries resources of the North Fork American River upstream of the American River Pump Station site.	LS	None required – All Alternatives	NA
5.8-9 Impacts on Folsom Reservoir warmwater fisheries.	LS	None required – All Alternatives	NA
5.8-10 Impacts on Folsom Reservoir's coldwater fisheries.	LS	None required – All Alternatives	NA
5.8-11 Impacts on Nimbus Fish Hatchery.	LS	None required – All Alternatives	NA
5.8-12 Impacts on fall-run Chinook salmon and steelhead in the lower American River.	PS	**Alternatives 2A through 2C - Proposed Action – All Scenarios** Under these Alternatives, reductions in simulated mean monthly flows in the lower American River at the mouth during the month of September, relative to the Base Condition were noted. Although small, these flow reductions could represent a significant impact on fall-run adult Chinook salmon immigration. *Potential mitigation measures may include:* 1. *Altered seasonal diversion pattern; thus, avoiding a peaked mid-summer diversion (August through October as modeled);* 2. *Reduction in the overall diversion total as represented by the Reduced Diversion Alternative.* **Alternatives 4A through 4C - Reduced Diversion Alternatives, Alternative 3 - Water Transfer Alternative, Alternative 1A - No**	LS

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TABLE ES-1

SUMMARY OF PROJECT IMPACTS AND MITIGATION MEASURES (CEQA)

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		Action Alternative, and Alternative 1B - No Project Alternative, None required. **Under Alternative 1B - No Project Alternative, t**here would be no additional diversions from the CVP system under the No Project Alternative. Consequently, flows and associated temperatures in the lower American River and lower Sacramento River would remain unchanged from existing conditions. Accordingly, there would be no temperature-related impacts on fall-run Chinook salmon/steelhead adult immigration under this Alternative.	
5.8-13 Impacts on splittail in the lower American River.	LS	None required –All Alternatives	NA
5.8-14 Impacts on American shad in the lower American River.	LS	None required – All Alternatives	NA
5.8-15 Impacts on striped bass in the lower American River.	LS	None required – All Alternatives	NA
5.9 Riparian Resources (Diversion-Related Direct Impacts)			
5.9-1 Effects on vegetation associated with changes in water surface elevations in Folsom, Shasta, and Trinity reservoirs.	LS	None required – All Alternatives	NA
5.9-2 Effects on riparian vegetation of the upper Sacramento River.	LS	None required – All Alternatives	NA
5.9-3 Effects on riparian vegetation in the lower Sacramento River and Delta.	LS	None required – All Alternatives	NA
5.9-4 Effects on Delta habitats of special-status species (non-fisheries).	LS	None required – All Alternatives	NA
5.9-5 Effects on riparian vegetation of the lower American River.	LS	None required – All Alternatives	NA
5.9-6 Effects on backwater pond hydrology in lower American River and its subsequent effect on pond vegetation.	LS	None required – All Alternatives	NA

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TABLE ES-1

SUMMARY OF PROJECT IMPACTS AND MITIGATION MEASURES (CEQA)

Impact		Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
5.9-7	**Effects on special-status species dependent on lower American River riparian and open water habitats.**	LS	None required – All Alternatives	LS
5.9-8	**Effects on species dependent on Folsom Reservoir near shore and open water habitats.**	LS	None required – All Alternatives	LS
5.9-9	**Direct impacts on the California red-legged frog and Foothill yellow-legged frog.**	LS	**Alternative 2C - Proposed Action – Scenario C** Although impacts on the California red-legged frog and Foothill yellow-legged frog could be significant in the portion of this reach of the North Fork American River, there is no legal authority requiring EDCWA to take action related to speculative future projects that could be implemented by GDPUD in the future. The obligation to adopt feasible mitigation measures only arises when an agency proposes to approve a project with significant environmental impacts. Future and specific mitigation measures would be prepared at the time project-specific actions are initiated and would become a part of the project-level environmental documentation for that action. This current EIS/EIR does not provide the environmental analysis necessary to support all of the new facilities ultimately required by GDPUD, at the location of the PCWA Auburn Pump Station to complete implementation of the new CVP water service contract for GDPUD. At present, no details are available as to the nature of these required facilities that would lend themselves to a project-specific analysis. Nevertheless, it is prudent to identify the types of mitigation measures that would benefit and help offset the potential hydrological effects revealed by the simulation modeling. In the future, when GDPUD actively proceeds with this new facility project, mitigation measures addressing the potential hydrological effects on either California red-legged frog and Foothill yellow-legged frog could include: • The EDCWA shall ensure that a spring survey in accordance with all applicable USFWS survey protocols is conducted by a	LS

LS = Less than Significant S = Significant NI = No Impact PS = Potentially Significant SU = Significant Unavoidable NA = Not Applicable

TABLE ES-1

SUMMARY OF PROJECT IMPACTS AND MITIGATION MEASURES (CEQA)

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		qualified biologist during the appropriate spring survey window in areas with suitable habitat that will be affected. • Should no CRLF adults or egg masses be observed during the spring survey, then no further mitigation shall be required. If CRLF are determined to be present, then the following mitigation measure could be implemented: • Either a no jeopardy biological opinion or an incidental take permit shall be obtained from the USFWS for potential impacts on the CRLF. All the terms and conditions of the biological opinion or the incidental take permit from the USFWS shall be implemented. While at the discretion of the USFWS, the above-mentioned terms and conditions will likely include a requirement to avoid and minimize habitat impacts and measures to restore impacted areas and enhance other areas along the creeks or reservoirs to benefit the CRLF. Regardless of USFWS direction, however, GDPUD, at a minimum, commit to a no net loss [of CRLF habitat] performance standard, but shall defer to the USFWS to determine if a higher mitigation ratio is required, and to determine how the performance standard will be satisfied. • Implementation of the above mitigation measure would reduce the potential impacts under Proposed Action – Scenario C, to less than significant.	
5.10 Water-Related Recreational Resources (Diversion-Related Direct Impacts)			
5.10-1 Result in a substantial conflict with established water-dependent or water-enhanced recreational uses in Folsom Reservoir, the lower American River, upper Sacramento River reservoirs, upper and lower Sacramento River, and the Delta or, result in activities inconsistent with the American River Parkway Plan.	LS	None required – All Alternatives	NA

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5.10-2 Result in a substantial change in river access or channel conditions that would decrease water-based recreational activities. For purposes of this analysis, the following thresholds are applicable: **1. Substantial decrease in the duration of Middle Fork American River flows below the 850 cfs threshold for boating.** **2. Substantial change in lower American River flows above or below the 1,750 to 6,000 cfs minimum/maximum range of adequate recreational flows; substantial change in lower American River flows above or below the 3,000 to 6,000 cfs optimum range of adequate recreational flows.**	LS	None required – All Alternatives	NA
5.10-3 Result in a substantial decrease in upper or lower Sacramento River flows below 5,000 cfs.	LS	None required – All Alternatives	NA
5.10-4 Shasta Reservoir boat launching criteria (reservoir elevation in msl; point at which boat launches must be closed): **1. Sacramento Arm: Antlers (995 ft) Sugarloaf #1 (955 ft) Sugarloaf #2 (918 ft).** **2. McLeod Arm: Baily Cover (1,017 ft) Hirz Bay #1 (1,020 ft) Hirz Bay #2 (973 ft) Birz Bay #3 (941 ft).** **3. Pit Arm: Packers Bay (951 ft) Centimundi #1 (943 ft) Centimundi #2 (876 ft) Centimundi #3 (848 ft) Jones Valley #1 (980 ft) Jones Valley #2 (924 ft) Jones Valley #3 (856 ft).**	LS	None required – All Alternatives	NA

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5.10-5	**Trinity Reservoir boat launching criteria (reservoir elevation in msl; point at which boat launches must be closed):** **1. Fairview – Trinity Dam area (2,310 ft)** **2. Main Arm – Trinity Center (2,295 ft)** **3. Stuart Fork Arm – Minersville (2,170 ft)**	LS	None required – All Alternatives	NA
5.10-6	**Folsom Reservoir recreational thresholds (reservoir elevation in msl) including:** **1. When all boat ramps are usable (420 feet or higher).** **2. When the marina wet slips are usable (412 feet or higher).** **3. When the swimming beaches are usable (420 feet to 455 feet).**	LS	None required – All Alternatives	NA
5.11 Water-Related Cultural Resources (Diversion-Related Direct Impacts)				
5.11-1	**Effects of changes in water surface elevations in Folsom, Shasta, and Trinity reservoirs on cultural resources.**	LS	None required – All Alternatives	NA
5.11-2	**Effects of changes in flows in the Sacramento River and Delta on cultural resources.**	LS	None required – All Alternatives	NA
5.11-3	**Effects of changes in flows in the lower American River on cultural resources.**	LS	None required – All Alternatives	NA
5.12 Land Use (Service Area Indirect Impacts)				
5.12-1	**Result in land uses that are incompatible with existing land use practices or land use policies.**	LS	None required – All Alternatives	NA
5.12-2	**Result in alteration of the region's planned capacity to accommodate projected future population growth.**	LS	None required – All Alternatives	NA
5.12-3	**Result in a physical change to the environment from changes in employment patterns.**	LS	None required – All Alternatives	NA
5.12-4	**Result in substantial conversion of agricultural lands to non-agricultural uses.**	LS	None required – All Alternatives	NA

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Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
5.13 Transportation and Circulation (Indirect Non-Diversion-Related)			
5.13-1 Result in increased traffic that is substantial in relation to the existing traffic load and capacity of the street system.	LS	None required – All Alternatives	NA
5.13-2 Result in the exceedance of the level of service standard established by the county congestion management agency for designated roads or highways.	LS	None required – All Alternatives	NA
5.13-3 Result in additional hazards due to a design feature resulting in inadequate emergency access.	LS	None required – All Alternatives	NA
5.13-4 Result in conflicts with adopted policies supporting alternative transportation.	LS	None required – All Alternatives	NA
5.14 Air Quality (Service Area Indirect Impacts)			
5.14-1 Conflict with or obstruct implementation of the applicable air quality plan.	LS	None required – All Alternatives	NA
5.14-2 Result in a cumulatively-considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors).	LS	None required – All Alternatives	NA
5.14-3 Violate any air quality standard or contribute substantially to an existing or projected air quality violation.	LS	None required – All Alternatives	NA
5.14-4 Substantially increase exposure of sensitive receptors to toxic air pollutants, or expose people to substantial levels of hazardous substance air emissions or create objectionable odors affecting a substantial number of people.	LS	None required – All Alternatives	NA

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Impact		Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
5.15 Noise (Service Area Indirect Impacts)				
5.15-1	**Substantially increase exposure of sensitive receptors to noise levels above established federal, State or local standards.**	LS	None required – All Alternatives	NA
5.16 Geology, Soils, Mineral Resources, and Paleontological Resources (Service Area Indirect Impacts)				
5.16-1	**Expose people or structures to major geologic hazards, such as rupture of a known earthquake fault, as defined on the most recent Alquist-Priolo Earthquake Fault Zoning Act Map, seismic ground shaking, liquefaction, slope failure, or landslides.**	LS	None required – All Alternatives	NA
5.16-2	**Place structures on soils that are likely to collapse or subside, or be located on expansive soils (defined in Table 18-01-B of the Uniform Building Code) that could damage foundations or structures.**	LS	None required – All Alternatives	NA
5.16-3	**Substantially increase erosion or loss of topsoil due to site disturbance.**	LS	None required – All Alternatives	NA
5.16-4	**Result in the loss of availability of a known mineral resource that would be of value to the region and residents of the state, or result in the loss of availability of a locally important mineral resource recovery site delineated in the El Dorado General Plan.**	LS	None required – All Alternatives	NA
5.16-5	**Directly or indirectly destroy a unique paleontological resources or site or unique geologic feature.**	LS	None required – All Alternatives	NA

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Impact		Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
5.17 Recreation (Service Area Indirect Impacts)				
5.17-1	**Result in permanent closure of recreation trails through the project area or result in a substantial increase in exposure to hazards for recreationists, for land-based activities due to project construction or operation.**	LS	None required – All Alternatives	NA
5.17-2	**Result in an increase in the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.**	LS	None required – All Alternatives	NA
5.18 Visual Resources (Service Area Indirect Impacts)				
5.18-1	**Result in a substantial adverse effect on a scenic vista or substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway.**	LS	None required – All Alternatives	NA
5.18-2	**Result in a substantial degradation to the existing visual character or quality of the site and its surroundings or create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area.**	LS	None required – All Alternatives	NA
5.19 Cultural Resources (Service Area Indirect Impacts)				
5.19-1	**Result in a substantial adverse change in the significance of an historical or archaeological resource.**	LS	None required – All Alternatives	NA
5.19-2	**Result in the disturbance of any human remains, including those interred outside formal cemeteries.**	LS	None required – All Alternatives	NA
5.20 Terrestrial and Wildlifel Resources (Service Area Indirect Impacts)				
5.20-1	**Have a significant adverse effect, either directly through habitat modifications, fragmentation, on any species in local or**	LS	None required – All Alternatives	NA

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	regional plan, policies, or regulations, or by the California Department of Fish & Game or U.S. Fish & Wildlife Service.			
5.20-1	**Substantially affect a rare, threatened or endangered species of animal or plant or the habitat of those listed species.**	LS	None required – All Alternatives	
5.22 Water Supply (Cumulative Impacts)				
5.22-1	**Effects on CVP Allocations.**	LS	None required – All Alternatives	NA
5.22-2	**Effects on SWP Allocations.**	LS	None required – All Alternatives	NA
5.22-3	**Effects of delivery allocations to purveyors of the Sacramento Water Forum Agreement as provided under their Purveyor-Specific Agreements (PSAs).**	LS	None required – All Alternatives	NA
5.23 Hydropower (Cumulative Impacts)				
5.23-1	**Effects on CVP hydropower generation and capacity.**	LS	None required – All Alternatives	NA
5.24 Flood Control (Cumulative Impacts)				
5.24-1	**Substantial change in the ability to adhere to the flood control diagrams for Folsom Reservoir under current operation or to its long-term re-operation.**	LS	None required – All Alternatives	NA
5.24-2	**Substantial change in floodplain characteristics that would increase the exposure of persons or property to flood hazards including a substantial change in the hydraulic stress imparted to lower American River levees or lower Sacramento River levees.**	LS	None required – All Alternatives	NA
5.25 Water Quality (Cumulative Impacts)				
5.25-1	**Effects of increased diversions and changes in CVP operations on water quality in reservoirs and rivers.**	LS	None required – All Alternatives	NA
5.25-2	**Effects on Delta water quality.**	LS	None required – All Alternatives	NA

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Impact		Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
5.26 Fisheries and Aquatic Resources (Cumulative Impacts)				
5.26-1	**Effects on CVP reservoir warmwater fisheries.**	LS	None required – All Alternatives	NA
5.26-2	**Impacts on Folsom Reservoir's coldwater fisheries.**	LS	None required – All Alternatives	NA
5.26-3	**Flow- and Temperature-related effects on upper Sacramento River fisheries.**	LS	None required – All Alternatives	NA
5.26-4	**Flow- and Temperature-related effects on lower Sacramento River fisheries.**	LS	None required – All Alternatives	NA
5.26-5	**Effects on Delta fisheries.**	LS	None required – All Alternatives	NA
5.26-6	**Effects on lower American River fall-run Chinook salmon and steelhead.**	LS	None required – All Alternatives	NA
5.26-7	**Effects on lower American River splittail.**	LS	None required – All Alternatives	NA
5.26-8	**Effects on striped bass.**	LS	None required – All Alternatives	NA
5.27 Riparian Resources (Cumulative Impacts)				
5.27-1	**Effects of changes in water surface elevations on Folsom, Trinity, and Shasta reservoir vegetation.**	LS	None required – All Alternatives	NA
5.27-2	**Flow-related effects on upper and lower Sacramento River riparian vegetation.**	LS	None required – All Alternatives	NA
5.27-3	**Flow-related effects on Delta riparian vegetation and special-status species.**	LS	None required – All Alternatives	NA
5.27-4	**Flow-related effects on lower American River riparian vegetation and special-status species dependent upon riparian and open water habitats.**	LS	None required – All Alternatives	NA
5.28 Water-Related Resources (Cumulative Impacts)				
5.28-1	**Impacts on recreational facilities and activities at Shasta and Folsom reservoirs.**	LS	None required – All Alternatives	NA
5.28-2	**Impacts on recreational activities along the lower American River.**	LS	None required – All Alternatives	NA
5.28-3	**Impacts on recreational activities in and along the upper and lower Sacramento River.**	LS	None required – All Alternatives	NA

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5.29 Water-Related Cultural Resources (Cumulative Impacts)				
5.29-1	**Effects of changes in magnitude and/or frequency of Folsom reservoir elevations on cultural resources.**	LS	None required – All Alternatives	NA
5.29-2	**Effects of changes in magnitude and/or frequency of lower American River and Sacramento River flows on cultural resources.**	LS	None required – All Alternatives	NA

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