CHAPTER 1

PURPOSE AND NEED FOR THE PROPOSED ACTION

1.0 PURPOSE AND NEED FOR THE PROPOSED ACTION

1.1 INTRODUCTION

California has historically been legally diverting more than its normal year apportionment of 4.4 million acre-feet (MAF) of Colorado River water. Prior to 1996, California's demands in excess of 4.4 million acre-feet per year (MAFY) were met solely by diverting unused apportionments of other Lower Division States (Arizona and Nevada) that were made available by the Secretary of the Interior (Secretary). Since 1996, California also has utilized surplus water made available by Secretarial determination. The other Lower Division States are, however, approaching full utilization of their apportionments, and declared surpluses of Colorado River water are expected to diminish in future years. California, therefore, needs to reduce its consumptive use of Colorado River water to its 4.4 MAF apportionment in normal years. In a major step toward achieving this goal, the Colorado River Board of California (CRB) developed California's draft Colorado River Water Use Plan (California Plan). The California water agencies consisting of The Metropolitan Water District of Southern California (MWD), Coachella Valley Water District (CVWD), Imperial Irrigation District (IID), and San Diego County Water Authority (SDCWA) negotiated the Key Terms for Quantification Settlement (Key Terms), and developed a draft Quantification Settlement Agreement (QSA). The QSA, which is described in more detail below and in Chapter 2, establishes a framework of water conservation actions and water transfers between the participating agencies for a period of up to 75 years. These provide an important mechanism for California to reduce its diversions of Colorado River water in normal years to its 4.4 MAF apportionment.

This Environmental Impact Statement (EIS) describes the potential environmental impacts of the proposed action, which is the execution of an Implementation Agreement (IA) that would commit the Secretary to making Colorado River water deliveries in accordance with the terms and conditions of the IA to enable implementation of the QSA, and related accounting and environmental actions. The three major components of the proposed action include the following:

- Execution of the IA, wherein the Secretary agrees to changes in the amount and/or location of deliveries of Colorado River water that are necessary to implement the QSA.
- Adoption of an Inadvertent Overrun and Payback Policy (IOP), which establishes requirements for payback of inadvertent overuse of Colorado River water by Colorado River water users in the Lower Division States. The IOP is a condition precedent to the execution of the IA and QSA and must be in place by the time these agreements go into effect.
- Implementation of biological conservation measures to offset potential impacts from the proposed action that could occur to federally listed fish and wildlife species or their associated critical habitats within the historic floodplain of the Colorado River between Parker Dam and Imperial Dam. These measures were developed and agreed to by the United States Bureau of Reclamation (Reclamation) and the United States Fish and Wildlife Service (FWS) in response to Reclamation's August 2000 *Biological Assessment for Proposed Interim Surplus Criteria, Secretarial Implementation Agreements for California Water Plan Components and Conservation Measures on the Lower Colorado River (Lake Mead to the Southerly International Boundary*) (BA) and were incorporated into the January 2001 *Biological Opinion for Interim Surplus Criteria, Secretarial Implementation Agreements, and Conservation Measures on*

the Lower Colorado River, Lake Mead to the Southerly International Boundary Arizona, California, and Nevada (BO).[1]

Each of these three components of the proposed Federal action is described in detail in Chapter 2. The IA, QSA, IOP, BA/Supplemental BA, and BO are attached to this EIS as appendices. This EIS is being prepared by Reclamation in compliance with the National Environmental Policy Act (NEPA), and Council on Environmental Quality (CEQ) regulations for implementing NEPA (40 Code of Federal Regulations [CFR] 1500-1508), which require the evaluation of potential environmental impacts resulting from Federal actions. Reclamation is also involved in the preparation of the IID Water Conservation and Transfer Project Environmental Impact Report (EIR)/EIS, which is described in more detail in section 1.5.1. The Secretary will make a final decision on this Federal action concurrent with a decision on the IID Water Conservation and Transfer Project EIR/EIS.

To better understand the context in which this proposed Federal action is being considered, background regarding the history and current use of Colorado River water in the lower Colorado River Basin is provided below (Figure 1.1-1 shows the Upper and Lower Basins of the Colorado River). This overview provides a brief explanation of the Colorado River System and its operation for flood control and water supply, the Law of the River, and California's historic Colorado River water use.

1.2 COLORADO RIVER WATER SUPPLY MANAGEMENT AND ALLOCATION

In order to understand the impact analysis in this EIS, it is necessary to have a basic understanding of the Colorado River system and how the system is operated. This section provides a general description of the River system and its associated reservoirs and diversion facilities, summarizes the water supply available in the Colorado River Basin from natural runoff, and describes how that water supply is distributed under the Law of the River, including the water order and accounting process.

1.2.1 Colorado River System and Water Supply

The Colorado River system serves as a source of water for irrigation, domestic and other uses in Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming and in the United States of Mexico (Mexico). The Colorado River also serves as a source of water for a variety of recreational activities, hydroelectric power, and environmental benefits.

Most of the total annual flow into the Colorado River Basin (Figure 1.1-1) is a result of natural runoff from mountainous snowmelt. The natural flow of the River is high in the late spring and early summer, diminishing rapidly by mid-summer. "Natural flow" is an estimate of flows that would exist without reservoir regulation, depletion[2], or transbasin diversion by humans. While flows in the late summer through autumn may increase following rain events, natural flow in the late summer through winter is generally low. Major tributaries to the Colorado River include the Green, San Juan, Gunnison, and Gila Rivers.

1. The conservation measures evaluated in this EIS are related to the change in point of delivery of up to 400 KAF.
2. Depletion is defined as consumptive use of Colorado River water (diversions minus return flows), and system losses (including, although not limited to, evaporation, and evapotranspiration).

Figure 1.1-1. Upper and Lower Basins of the Colorado River

The annual flow of the Colorado River varies considerably from year to year. The estimated natural flow at the Lees Ferry gaging station (see Figure 1.1-1), located 17 river miles below Glen Canyon Dam and above Lee Ferry, Arizona,[3] has varied annually from 5 MAF to 24 MAF.

Most of the water in the lower portion of the Colorado River flows into the Lower Basin from the Upper Basin and is accounted for at Lee Ferry, Arizona. In years when the minimum objective release is being made from Glen Canyon Dam, about 92 percent of the annual natural supply is attributed to the releases from the Upper Basin. The minimum objective release is a quantity of 8.23 MAF from Lake Powell for the water year. The remaining eight percent of the water in the lower portion of the River is attributed to sidewash inflows due to rainstorms and tributary rivers in the Lower Basin. In the Lower Basin, the Colorado River mean annual tributary inflow is approximately 1.3 MAF, excluding the intermittent Gila River inflow. Actual Lower Basin tributary inflows are highly variable from year to year.

1.2.2 The Law of the River

The use of Colorado River water is governed by a body of law commonly referred to as the "Law of the River." The Law of the River includes, but is not limited to, Federal and State laws, interstate compacts, an international treaty, court decisions, Federal contracts, Federal and State regulations, and multi-party agreements. Selected documents that comprise the Law of the River are discussed below, and a more comprehensive list is included in Table 1.2-1.

Colorado River Compact of 1922 (Compact) — The 1922 Compact divided the Colorado River into the Upper Basin and the Lower Basin. The drainage basin of the Colorado River, within the United States (U.S.), is shown on Figure 1.1-1. The Upper Basin includes those portions of Arizona, Colorado, New Mexico, Utah, and Wyoming within and from which waters drain naturally into the Colorado River above Lee Ferry, Arizona. The Lower Basin consists of those portions of Arizona, California, Nevada, New Mexico, and Utah within and from which waters drain naturally into the Colorado River system below Lee Ferry. The Compact apportioned to each basin, in perpetuity, the exclusive beneficial consumptive use of 7.5 MAFY. In addition to the 7.5 MAFY apportionment to the Lower Basin, the Lower Basin was given the right to increase its beneficial consumptive use by 1.0 MAFY.

The Compact also divided the seven Colorado River Basin States into the Upper Division and Lower Division States. The Upper Division States are Colorado, New Mexico, Utah, and Wyoming. The Lower Division States are Arizona, California, and Nevada.

Boulder Canyon Project Act of 1928 — In 1928, Congress enacted the Boulder Canyon Project Act of 1928 (BCPA) (45 Stat. 1057), which authorized the Secretary to construct Hoover Dam and the All-American Canal (AAC), and to contract for the delivery and use of water from these facilities for irrigation and domestic uses. Congress conditioned the BCPA upon the ratification of the Compact by at least six of the Colorado River Basin States, including California.

3. Lee Ferry, Arizona is the division point between the Upper and Lower Basins as established by the Compact (discussed in section 1.2.2) and is located below the Paria River; Lees Ferry is the site of the gaging station located above the Paria River.

Table 1.2-1. Selected Documents Included in the Law of the River

- The River and Harbor Act, March 3, 1899.
- The Reclamation Act of June 17, 1902.
- Reclamation of Indian Lands in Yuma, Colorado River, and Pyramid Lake Indian Reservations Act of April 21, 1904.
- Yuma Project authorized by the Secretary of the Interior on May 10, 1904, pursuant to section 4 of the Reclamation Act of June 17, 1902.
- Protection of Property Along the Colorado River Act of June 25, 1910.
- Warren Act of February 21, 1911.
- Patents and Water-Right Certificates Acts of August 9, 1912 and August 26, 1912.
- Yuma Auxiliary Project Act of January 25, 1917.
- Availability of Money for Yuma Auxiliary Project Act of February 11, 1918.
- Sale of Water for Miscellaneous Purposes Act of February 25, 1920.
- Federal Power Act of June 10, 1920.
- The Colorado River Compact, 1922.
- The Colorado River Front Work and Levee System Acts of March 3, 1925, June 21, 1927, June 28, 1946
- The Boulder Canyon Project Act of December 21, 1928.
- The California Limitation Act of March 4, 1929.
- The California Seven Party Agreement of August 18, 1931.
- The Rivers and Harbors Act of August 30, 1935.
- The Parker and Grand Coulee Dams Authorization Act of August 30, 1935.
- The Parker Dam Power Project Appropriation Act of May 2, 1939.
- The Reclamation Project Act of August 4, 1939.
- The Boulder Canyon Project Adjustment Act of July 19, 1940.
- U.S.–Mexico Water Treaty, February 3, 1944.
- The Flood Control Act of December 22, 1944.
- Gila Project Act of July 30, 1947.
- The Upper Colorado River Basin Compact of October 11, 1948.
- Consolidated Parker Dam Power Project and Davis Dam Project Act of May 28, 1954.
- 43 CFR Part 414
- 43 CFR Part 417
- Palo Verde Diversion Dam Act of August 31, 1954.
- Change Boundaries, Yuma Auxiliary Project Act of February 15, 1956.
- The Colorado River Storage Project Act of April 11, 1956.
- Water Supply Act of July 3, 1958.
- Boulder City Act of September 2, 1958.
- Report of the Special Master, Simon H. Rifkind, *Arizona* v. *California*, et al., December 5, 1960.
- United States Supreme Court Decree, *Arizona* v. *California*, March 9, 1964.
- International Flood Control Measures, Lower Colorado River Act of August 10, 1964.
- Minutes 218, March 22, 1965; 241, July 14, 1972, (replaced 218); and 242, August 30, 1973, (replaced 241) of the International Boundary and Water Commission, pursuant to the U.S.–Mexico Water Treaty.
- Southern Nevada (Robert B. Griffith) Water Project Act of October 22, 1965.
- The Colorado River Basin Project Act of September 30, 1968.
- Criteria for the Coordinated Long Range Operation of Colorado River Reservoirs, June 8, 1970.
- Supplemental Irrigation Facilities, Yuma Division Act of September 25, 1970.
- The Colorado River Basin Salinity Control Act of June 24, 1974, as amended.
- United States Supreme Court Supplemental Decrees, *Arizona* v. *California*, January 9, 1979, and April 16, 1984.
- Hoover Powerplant Act of August 17, 1984 (98 Stat. 1333).
- The Numerous Colorado River Water Delivery and Project Repayment Contracts with the States of Arizona and Nevada, cities, water districts, and individuals.
- Hoover and Parker-Davis Power Marketing Contracts.
- The Grand Canyon Protection Act of 1992 (Public Law 102-575, 106 stat. 4669).
- The Reclamation States Emergency Drought Relief Act of March 5, 1992, as extended by the Act of January 24, 2000.
- The Interim Surplus Guidelines Record of Decision, effective February 25, 2001.

The BCPA authorized the States of Arizona, California, and Nevada to enter into an agreement in which Nevada would be entitled to 0.3 MAFY and Arizona 2.8 MAFY of the 7.5 MAFY apportioned to the Lower Basin for beneficial use by Article III, paragraph A of the Compact, leaving 4.4 MAFY available for California. The authorized agreement would have also provided Arizona with one-half of the excess or surplus waters unapportioned by the Compact. Such an agreement was never executed by Arizona, California, and Nevada. The BCPA's implementation was conditioned upon the State of California irrevocably and unconditionally agreeing to the following if Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming had not ratified the Compact within six months of passage of the BCPA:

- Limiting annual consumptive use (diversions less return flow to the River) in California to no more than 4.4 MAFY of the 7.5 MAFY of the waters apportioned to the Lower Division States by the Compact; plus
- Utilizing not more than one-half of any excess or surplus waters unapportioned by the Compact.

California addressed this requirement by passing the California Limitation Act in 1929.

Section 5 of the BCPA authorizes the Secretary to contract with entities and individuals in the Lower Division States (including the States themselves) for delivery of Colorado River water. These contracts are generally referred to as "Section 5 Contracts," and are for permanent service.

California Seven Party Agreement of 1931 (Seven Party Agreement) — The 1964 Decree of the U.S. Supreme Court established the apportionment of Colorado River water among the Lower Division States. Prior to entering into Section 5 water delivery contracts with California agencies, the Secretary requested that those agencies recommend to the Secretary an apportionment of the California share of Colorado River water among California water users. In response, seven major California entities executed the Seven Party Agreement, in which the California entities agreed to an apportionment of California's share of Colorado River water and agreed to priorities among the seven parties, and recommended the adoption of such by the Secretary. The terms of the Seven Party Agreement were incorporated into the Secretarial regulations dated September 29, 1931 and into the Section 5 water delivery contracts with the Secretary, thereby placing the recommended apportionment into effect. Figure 1.2-1 schematically shows the allocation, by priority, of Colorado River water to entities within California under the Seven Party Agreement. Many of California's major diverters on the Colorado River do not have exact, quantified apportionments, although some individual and shared entitlements are capped at an overall maximum by priority. The amount of Colorado River water apportioned under the Seven Party Agreement total 5.362 MAFY, or 0.962 MAFY more than California's 4.4 MAF apportionment in a normal year. Therefore, diversions of more than 4.4 MAF under Priorities 5a, 5b, and 6 in any given year are dependent upon the following conditions: surplus water is available; Arizona and/or Nevada do not divert their full apportionments; less than 4.4 MAFY is used within California by entities with higher priorities; or entities with Priorities 1 through 3 and Present Perfected Rights (PPRs) take less than 3.85 MAFY. (PPRs are defined under the discussion of *Arizona v. California*, immediately below.)

United States-Mexico Water Treaty of 1944) — Under Article 10(a) of the *Utilization of Waters of the Colorado and Tijuana Rivers and of the Rio Grande — Treaty between the United States of America and Mexico* dated February 3, 1944, Mexico is entitled to an annual amount of 1.5 MAF of Colorado River water. Under Article 10(b) of the United States-Mexico Water Treaty of 1944, Mexico may

Priority	Allocation	Volume of Allocation (Acre Feet)
1	PVID	3,850,000
2	USBR Yuma Project	
3a	IID and CVWD[a] for Imperial and Coachella Valleys	
3b	PVID	
4	MWD	550,000
Total Priorities 1 - 4		**4,400,000**
5a	MWD	550,000
5b	City & County of San Diego[b]	112,000
6a	IID and CVWD for Imperial and Coachella Valley	300,000
6b	PVID	
Total Priorities 1 - 6		**5,362,000**
7[c]	Remaining Water for Agricultural use in the Colorado River Basin in California	

[a] Pursuant to the 1934 Compromise Agreement, IID has priority over CVWD within Priority 3a.
[b] Later transferred to MWD when SDCWA joined MWD.
[c] The Colorado River Basin in California is shown on USBR Map no. 23000.

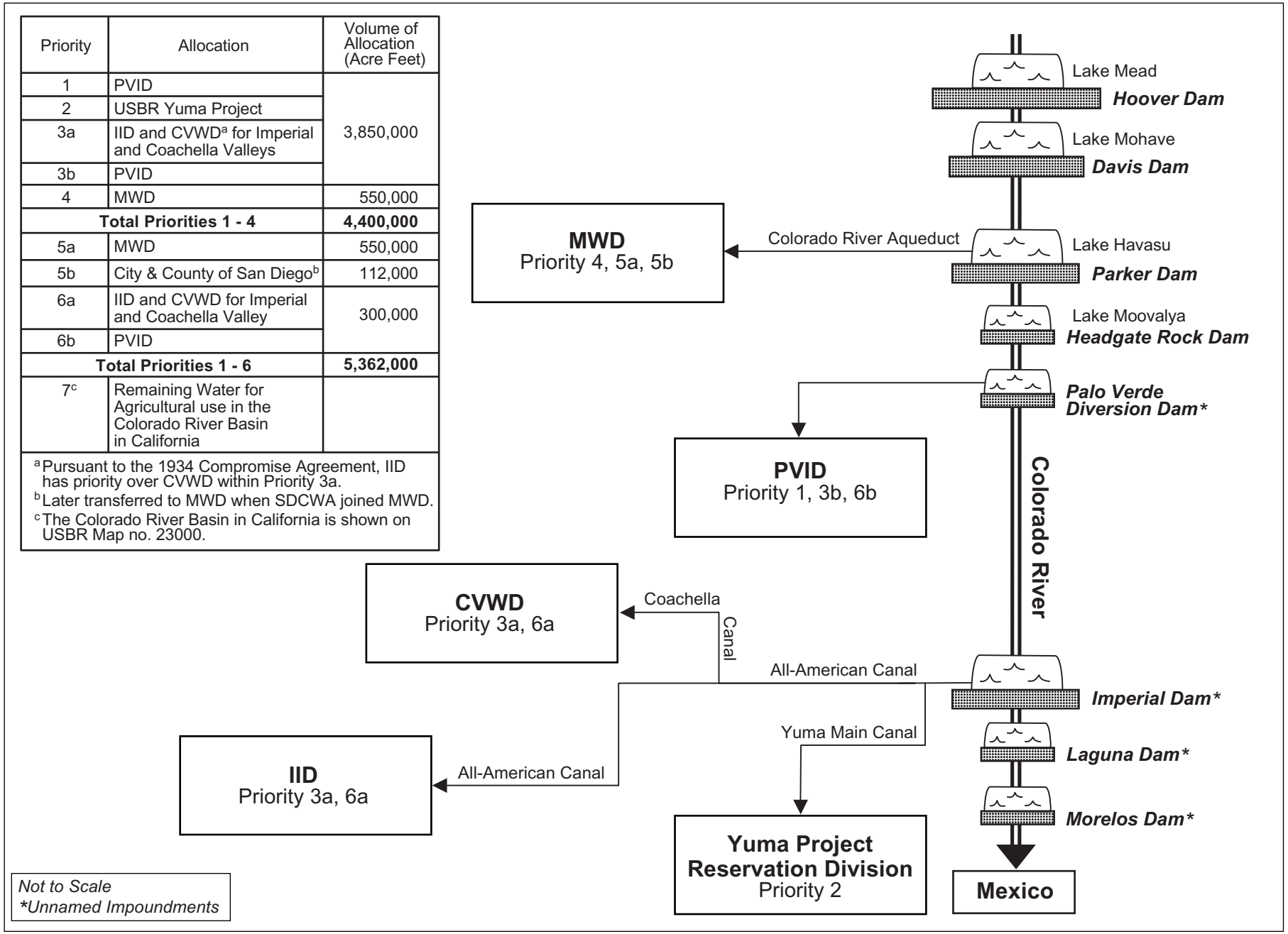

Figure 1.2-1. Colorado River Water Allocation Under the Seven Party Agreement

schedule up to an additional 0.2 MAF when "there exists a surplus of waters of the Colorado River in excess of the amount necessary to satisfy uses in the United States."

Arizona v. California 1964 Supreme Court Decree (Decree) — In 1964, the Supreme Court of the U.S. entered its Decree in *Arizona v. California* (376 U.S. 340), and supplemental Decrees were entered in 1979 (439 U.S. 419), 1983 (460 U.S. 605), and 2000 (531 U.S. 1). In accordance with the BCPA, and after providing that water may be released to satisfy the United States-Mexico Water Treaty of 1944, the Decree apportioned water available for release from Colorado River water controlled by the U.S. for use in the States of Arizona, California, and Nevada. The Decree also recognized certain Federal reserved rights and provided a process for the quantification of all claimed PPRs, all to be supplied from the existing apportionments of the respective States. In the context of Colorado River water, as set forth in the Decree, the term "PPRs" refers to water rights based upon diversion and beneficial use prior to the effective date of the BCPA (June 25, 1929).[4] A Federal reserved right PPR for an Indian reservation does not need to be diverted or put to beneficial use to be established or preserved but remains reserved for that reservation as of the date of creation of the reservation. All PPRs are numbered, and their relative priorities are set forth within the supplemental Decree entered January 9, 1979, although some of the Federal reserved right PPRs have been further modified by the supplemental Decrees entered in 1979, 1984, and 2000. The Federal reserved right PPRs identified in Article II(D)(1)-(5) of the Decree have the highest priority and are identified in the 1979 supplemental Decree as numbers 1-3, 22-25, and 81. The miscellaneous PPRs identified in the 1979 supplemental decree as numbers 7-21 and 29-80 have the next highest priority. After Federal and Miscellaneous PPRs are satisfied, the next category of water rights to be satisfied are the PPRs for water projects and water districts, which are identified in the 1979 supplemental decree as numbers 4-6, 26-28, and 82.

The Decree enjoins the Secretary from releasing or delivering water other than to water users in the U.S. with valid contracts made pursuant to Section 5 of the BCPA or to specified Federal reservations. The Decree provides the parameters for delivering water in "normal," "surplus," and "shortage" years. The Decree directs the Secretary to release 4.4 MAF of mainstream water controlled by the U.S. to California in a normal year. In addition to the normal year allocation, in a surplus year as determined by the Secretary, the Secretary shall apportion 50 percent of the water in excess of 7.5 MAF for use in California. In a shortage year, the Secretary must first satisfy all of the PPRs pursuant to the 1964 Decree and subsequent Decrees. The Secretary must then apportion the remaining water consistent with the BCPA and the Decree, but in no event shall more than 4.4 MAF be apportioned for use in California, including use by all PPRs. The Decree also provides that Colorado River water apportioned to a Lower Division State, but not used by that State, may be made available to another Lower Division State (unused apportionment). California, therefore, has historically been allowed to divert water that was apportioned to, but not used by, Arizona and Nevada.

Colorado River Basin Project Act of 1968. The purpose of the Colorado River Basin Project Act of 1968 (CRBPA) was to regulate the flow of the Colorado River; control floods; improve navigation; provide for the storage and delivery of Colorado River water for reclamation of lands, including supplemental water supplies, and for municipal, industrial and other beneficial uses; improve

4. Federal Reserved Rights do not require diversion and use to be considered valid water rights under the concepts embodied in the Federal Reserved Rights Doctrine.

water quality; provide for basic public outdoor recreation facilities; improve conditions for fish and wildlife and the generation and sale of electrical power as an incident of the foregoing purposes. This Act authorized construction of a number of water development projects, including the Central Arizona Project (CAP) and required the Secretary to develop the Criteria for Coordinated Long-Range Operation of Colorado River Reservoirs (LROC).

1.2.3 Operation of the Colorado River

Long-Range Operating Criteria

The CRBPA required the Secretary to adopt operating criteria for the Colorado River by January 1, 1970. The LROC, adopted in 1970, controls the operation of the Colorado River reservoirs in compliance with requirements set forth in the Compact, the Colorado River Storage Project Act of 1956, the BCPA, the CRBPA, the United States-Mexico Water Treaty of 1944, and other applicable Federal laws. Under the LROC, the Secretary makes annual determinations published in the Annual Operating Plan (AOP) (discussed in the following section) regarding the availability of Colorado River water for deliveries to the Lower Division States. A requirement to equalize the active storage between Lake Powell and Lake Mead when there is sufficient storage in the Upper Basin is also included in the LROC.

Section 602 of the CRBPA, as amended, provides that the LROC can only be modified after correspondence with the governors of the seven Basin States and appropriate consultation with such State representatives as each governor may designate. The LROC call for formal reviews at least every 5 years. The reviews are conducted as a public involvement process and are attended by representatives of Federal agencies, the seven Basin States, Indian Tribes with Federal reserved rights, the general public including representatives of the academic and scientific communities, environmental organizations, the recreation industry, water contractors, and contractors for the purchase of Federal power produced at Glen Canyon Dam. Past reviews have not resulted in any changes to the LROC.

Annual Operating Plan

The CRBPA also requires the preparation of an AOP for the Colorado River reservoirs that guides the operation of the system for the following year. The AOP describes how Reclamation will manage River resources over the 12-month period, consistent with the LROC and the Decree. The AOP is prepared annually by Reclamation in cooperation with the Basin States, other Federal agencies, Indian tribes with Federal reserved rights, State and local agencies and the general public, including governmental interests as required by Federal law. As part of the AOP process, the Secretary makes annual determinations regarding the availability of Colorado River water for deliveries to the Lower Division States as described below.

Normal, Surplus, and Shortage Determinations

The Secretary is required to determine when "normal," "surplus," and "shortage" conditions occur on the lower portion of the Colorado River.[5] These conditions are determined in the AOP and are

5. For the purposes of this EIS, the "lower portion of the Colorado River" is defined as the historic floodplain between Lake Mead and SIB, including reservoirs to full-pool elevations.

referred to as "normal," "surplus," and "shortage" years. As generally set forth in the Decree, a "normal year" occurs if sufficient mainstream Colorado River water is available to satisfy 7.5 MAF of annual consumptive use in the three Lower Division States (Arizona, California, and Nevada); a "surplus year" occurs if sufficient mainstream water is available for release to satisfy in excess of 7.5 MAF of annual consumptive use in the three Lower Division States; a "shortage year" occurs if insufficient mainstream water is available for release to satisfy 7.5 MAF of annual consumptive use in the Lower Division States. The Secretary makes an annual determination of the water supply conditions, in consultation with the Basin States, Indian Tribes with Federal reserved rights, and other parties, as described in more detail below.

Interim Surplus Guidelines

As discussed above, California has been legally diverting more than its normal 4.4 MAFY apportionment of Colorado River water for many years and has developed the California Plan to assist the State to reduce its use of Colorado River water to its apportionment of 4.4 MAF in a normal year. The Secretary has developed specific Interim Surplus Guidelines (ISG) that will provide mainstream users of Colorado River water, particularly those in California that currently utilize surplus water, a greater degree of predictability with respect to the likely existence, or lack thereof, of a surplus determination in a given year for the interim period (from 2002 to 2016). The guidelines facilitate California's transition to use of a reduced supply of Colorado River water. A Final EIS was released that assesses the impacts of these guidelines (U.S. Bureau of Reclamation [USBR] 2000b) and a Record of Decision (ROD) has been adopted (*Federal Register*, Vol. 66, No. 17, January 25, 2001, Notices).

The action addressed in that Final EIS was the adoption of specific ISG pursuant to Article III (3)(b) of the LROC. The ISG will be used annually during the interim period to determine the conditions under which the Secretary may declare the availability and volume of surplus water for use within the States of Arizona, California, and Nevada. The ISG are consistent with both the Decree and the LROC. The ISG will remain in effect for determinations made through calendar year (CY) 2015 regarding the availability and volume of surplus water through CY 2016. The ISG may be subject to 5-year reviews conducted concurrently with LROC reviews. The ISG would be applied each year as part of the AOP for Colorado River Reservoirs. The ISG, as adopted in the ROD, provide for certain benchmarks for reduction of California's Colorado River water use and other actions. In the event that California contractors have not executed the QSA by December 31, 2002, the Interim Surplus determinations identified in the ISG ROD will be suspended and surplus determinations will be based upon the 70R Strategy[6], until such time California completes all actions and complies with reductions in water use identified in Section 5(c) of the ISG ROD. Section 5(c) establishes benchmark quantities and dates for reductions in California agricultural usage, and states that in the event California has not reduced its use to meet the benchmark quantities, the Interim Surplus determinations identified in the ISG ROD will be suspended and determinations will be based on the 70R strategy. Section 5(c) also provides conditions regarding reinstatement of ISG surplus determinations if missed benchmarks are later met. The ISG ROD states, "At the conclusion of the

6. The 70R Strategy defined one of the factors considered by Reclamation prior to adoption of the ISG. The 70R Strategy process assumed a 70-percentile inflow into Lake Powell and after deducting consumptive uses and system losses and checks the results to see if all of the water could be stored or if flood control releases from Lake Mead would be required. If flood control releases from Lake Mead would be required, surplus water would be made available to Arizona, California, and Nevada beyond its normal year apportionment of 7.5 MAF.

effective period of these Guidelines [Calendar year 2016], California shall have implemented sufficient measures to be able to limit total uses of Colorado River water within California to 4.4 MAF, unless a surplus is determined….". The water conservation and transfer projects described in the QSA, which would be implemented by the IA, will facilitate compliance with the benchmarks and normal year apportionment.

Water Orders and Decree Accounting

Water Orders

Each September, Reclamation requires water users to submit diversion schedules, or estimates of the amount of water they would need to divert from the Colorado River during the following calendar year. These schedules, commonly referred to as annual water orders, are estimates of monthly diversions required by the water user for the following calendar year. Reclamation uses these annual water orders to determine a tentative schedule of monthly releases for Hoover Dam, Davis Dam, and Parker Dam.

In addition to the annual water order, weekly water orders are also submitted to Reclamation. Each Wednesday, a water user submits a weekly water order to Reclamation for the following week's (Monday through Sunday) water requirement. After Reclamation has accumulated all the weekly water orders from all water users in the Lower Division, Reclamation then prepares a master schedule of flows. Daily changes in water orders are made to accommodate emergencies, changes in weather and daily water schedules, holidays, dam maintenance and construction activities, and various other parameters. In December of each year, Mexico provides the U.S. with a monthly water order for the upcoming year.

Decree Accounting

In accordance with Article V of the Decree (376 U.S. 340), the Secretary compiles and maintains records for the following: diversions of water from the mainstream of the Colorado River; return flow of such water to the mainstream of the Colorado River as is available for consumptive use in the U.S. or in satisfaction of the United States-Mexico Water Treaty of 1944 obligation; and consumptive use of such water, for each State and diverter. Reclamation reports these data for each calendar year in the Decree Accounting Report. The Decree Accounting Report is released within the calendar year following the calendar year of water use (for example, the Decree Accounting Report for CY 1999 was released in July of 2000).

Records of diversions and measured return flows are furnished by a variety of sources including, the United States Geological Survey (USGS), International Boundary and Water Commission, U.S. Bureau of Indian Affairs (BIA), Reclamation, National Park Service, FWS, and Colorado River water users. For most Colorado River water users, diversion and measured return flow records are reported to Reclamation on a monthly basis, with records for any given month due on the 15th of the following month. Reclamation tabulates these reported diversions and measured return flows and issues a monthly report, similar in format to the Decree Accounting Report. These monthly reports contain the cumulative years' provisional diversions, measured return flows and consumptive use for most Colorado River water users (some of the smaller Colorado River water users report diversions on an annual basis only).

Colorado River water may also be diverted through wells or pumped directly from the river. The amount of Colorado River water pumped from wells or the river is reported by the USGS and is generally determined from records of power use. For most electric pumps, diversions are computed on a monthly basis from power records and a "kilowatt hour per acre-foot factor" determined by discharge measurement. For pumps where no power record is available, a consumptive use factor of 6 acre-feet (AF) per irrigated acre of land per year is used to estimate annual consumptive use.

1.2.4 System Reservoirs and Diversion Facilities

The Colorado River system contains numerous reservoirs and facilities constructed by Reclamation that combined, provide approximately 60 MAF of active storage. The Lower Basin dams and reservoirs include Hoover, Davis, Parker, Headgate Rock, Palo Verde Diversion, Imperial, Laguna and Morelos Dams. Hoover Dam created Lake Mead, which can store up to 27.4 MAF of live storage. Davis Dam was constructed to re-regulate Hoover Dam's releases to aid in the annual United States-Mexico Water Treaty of 1944 deliveries to Mexico. Davis Dam creates Lake Mohave and provides 1.8 MAF of storage. Parker Dam forms Lake Havasu, which provides up to 0.648 MAF of storage. Headgate Rock Dam forms Lake Moovalya and is a run-of-the-river structure (i.e. creates a small impoundment, but has no substantial storage capacity). Palo Verde Diversion Dam forms an unnamed impoundment and is a run-of-the-river structure. Imperial Dam approximately 28 miles northeast of Yuma, Arizona, is a diversion and desilting facility for the AAC and the Gila Main Gravity Canal. Laguna Dam forms an unnamed impoundment and can store up to 700 AF. Morelos Dam, near the Northerly International Boundary (NIB), is the primary delivery point for Colorado River water under the United States-Mexico Water Treaty of 1944. Table 1.2-2 summarizes the storage facilities and major diversion dams from Glen Canyon Dam to Morelos Dam (refer to Figure 1.1-1 for general location).

Table 1.2-2. Colorado River Storage Facilities and Major Diversion Dams from Glen Canyon to Morelos Dam

Facility	*Reservoir*	*Location*	*Storage Capacity (AF)*
Glen Canyon Dam	Lake Powell	Upstream of Lee Ferry, Arizona	24,322,000 Live
Hoover Dam	Lake Mead	Nevada and Arizona near Las Vegas, 270 miles downstream of Glen Canyon Dam	27,400,000 Live
Davis Dam	Lake Mohave	70 miles downstream of Hoover Dam	1,818,000
Parker Dam	Lake Havasu[1]	150 miles downstream of Hoover Dam	648,000
Headgate Rock Dam	Lake Moovalya	164 miles downstream of Hoover Dam	N.A.[3]
Palo Verde Diversion Dam	Unnamed impoundment	209 miles downstream of Hoover Dam	N.A.[3]
Senator Wash regulating facility[5]	Senator Wash Reservoir[2]	290 miles downstream of Hoover Dam near Imperial Dam	13,800[4]
Imperial Dam	Unnamed impoundment	290 miles downstream of Hoover Dam	1000
Laguna Dam	Unnamed impoundment	300 miles downstream of Hoover Dam	700
Morelos Dam	Unnamed diversion structure	320 miles downstream of Hoover Dam	NA[3]

1. Lake Havasu provides a relatively constant water level for water diversions.
2. Senator Wash Reservoir is an offstream reservoir with a pumping/generating plant.
3. Run-of-river diversion structure.
4. Current operating restrictions limit storage of water.
5. Elevation restrictions are in place, due to potential piping at West Squaw Lake Dike and Senator Wash Dam. Current elevation restrictions have decreased the storage elevation to 235 feet (from 240 feet), with normal operations ranging from 218 to 233 feet.

Major Diversions for the State of Arizona — There are several points of diversion of Colorado River water in Arizona, including, but not limited to, the following:

- the CAP facilities in Lake Havasu, for the Central Arizona Water Conservation District (CAWCD) and Indian contractors;
- water pumped from wells for the Fort Mojave Indian Reservation, near Needles, California;
- diversions at Headgate Rock Dam for the Colorado River Indian Reservation near Parker, Arizona;
- diversions in the Cibola area to irrigate lands adjacent to the River; and
- diversions at Imperial Dam into the Gila Gravity Main Canal, and into the AAC for subsequent release into the Yuma Main Canal.

Arizona is also apportioned the consumptive use of 50 thousand acre-feet per year (KAFY) of water from the Upper Basin. This water is diverted above Lee Ferry.

Major Diversions for the State of California — California receives most of its Colorado River water at three diversion points:

- the Whitsett Pumping Plant, owned and operated by MWD in Lake Havasu;
- the Palo Verde Diversion Dam, which diverts water for the Palo Verde Irrigation District (PVID); and
- the AAC diversion at Imperial Dam, which diverts water for the Yuma Project Reservation Division (YPRD), IID, and the CVWD.

Major Diversions for the State of Nevada

- Approximately 90 percent of Nevada's apportionment is diverted at Saddle Island in Lake Mead by the Southern Nevada Water Authority (SNWA); and
- the remainder of the State's apportionment is diverted below Davis Dam in the Laughlin area.

1.3 BACKGROUND RELEVANT TO THE PROPOSED ACTION

1.3.1 Background Relevant to the Implementation Agreement

Key Concepts

Several concepts are key to understanding the Law of the River. "Apportionment" refers to the distribution (allocation) of a share of available Colorado River water. An apportionment may be to the Upper and Lower Basins as provided pursuant to the Compact, to a Lower Basin State as identified in the BCPA and the Decree, or to a specific entity such as the apportionments made to agencies by the Seven Party Agreement. The Secretary's action of incorporating into his contracts with the California agencies the allocation of water that was recommended to him by the Seven Party Agreement made the recommended apportionments "entitlements."

"Entitlement" refers to an authorization to beneficially use Colorado River water pursuant to: (1) a decreed right, (2) a contract with the U.S. through the Secretary, or (3) a Secretarial reservation of water. Decreed rights for non-federal entitlement holders are based on rights acquired pursuant to State law (perfected rights) and exercised by the actual diversion of a specific quantity of water for beneficial use to a defined area of land or to definite municipal or industrial works. Perfected rights also include water rights created by the reservation of water for use on Federal establishments under Federal law whether or not the water has been put to beneficial use or used continuously. The Decree defines perfected rights existing as of June 25, 1929 (the effective date of the BCPA), as PPRs. An entitlement establishes the maximum volume of water that an individual or entity has a legal right to divert, or in some cases consume, on an annual basis. The right to divert is generally further limited to a certain diversion rate, point(s) of diversion, purpose(s) of use, place of use (service area), and a determination that water is being put to beneficial use as reasonably required. It is the entitlement, not the apportionment, which establishes a right to consumptively use Colorado River water.

"Beneficial use as reasonably required" refers to the appropriate consumptive use of water by an entitlement holder based on such factors as location of use, purpose of use, types of crops (for irrigation uses), condition of delivery facilities, and past record of water orders (see CFR Part 417).

Because the flow in the Colorado River is variable, it may not always be possible to meet all water demands. "Priority" refers to an entity's precedence to utilize its entitlement relative to all other entities with entitlements. When water demands cannot be met in the aggregate, the entity with the highest priority entitlement is entitled to have its request for beneficial use as reasonably required met first. The entity with the next highest priority entitlement is entitled to have its request for beneficial use as reasonably required met second, and so on through the descending priorities as long as supplies are available. Priority becomes crucial when not enough water is available to satisfy the beneficial use as reasonably required of all entitlement holders within the limits of their entitlements. In times of shortage, an entity with the lowest-priority entitlement might have only some or none of its request satisfied. In the Seven Party Agreement (described above), priority is ranked numerically, with Priority 1 being the highest in comparison to the other priorities established in that agreement.

Historic Water Diversions by California — The Decree accounting process established after the Decree forms the basis for comparing years of California use of Colorado River water. California's

use of Colorado River water from 1964 to 1999 varied from 4.2 to 5.4 MAFY, with an average of 4.9 MAFY. The 1990 to 1999 period includes ranges of 4.5 to 5.2 MAFY, with an average of 5.0 MAFY. To date, California's demands in excess of 4.4 MAFY have been met in part by Colorado River water apportioned to Arizona and Nevada but not used by those States (unused apportionment), and by water designated as surplus by the Secretary. The amount of unused apportionment that previously was available to California is diminishing, and unused apportionment is not likely to be available in future years. This is due to the commencement of operation of the CAP in 1985 (a project that delivers Colorado River water to central Arizona irrigation districts, cities, and Indian Tribes), its substantial completion in 1993, and growing demand for water in Nevada.

Recently, California water agencies completed a major step toward reducing California's reliance on Colorado River water in excess of its apportionment of 4.4 MAFY in a normal year when they negotiated the Key Terms and developed an overall California Plan. The California Plan describes an overall program that would assist California in limiting the State's use of Colorado River water to its 4.4 MAFY apportionment in a normal year. The QSA provides for implementation of major components of the California Plan and incorporates the contractual agreements necessary for California to reduce its use of Colorado River water. The QSA is a proposed agreement among CVWD, IID, and MWD to budget their portion of California's apportionment of Colorado River water among themselves and to make water conserved in the IID service area available to CVWD, MWD, and SDCWA. The QSA is composed of related agreements, activities and projects, which, when taken together, support the consensual agreement among the four agencies regarding the use of Colorado River water. The QSA Program Environmental Impact Report (PEIR) (CVWD et al. 2002) provides program-level California Environmental Quality Act (CEQA) analysis for the implementation of the QSA.

One of the agreements under the QSA is the IID/SDCWA Water Conservation and Transfer Agreement (as amended under the QSA). Project-level CEQA and NEPA analysis for the IID/SDCWA Water Conservation and Transfer Agreement, including the change in point of diversion of up to 300 KAFY from Imperial Dam to Lake Havasu, SDCWA use of conserved water, water conservation by IID, and the related Habitat Conservation Plan (HCP) is provided in the IID Water Conservation and Transfer Project EIR/EIS (IID and USBR 2002).

The IA, an agreement between CVWD, IID, MWD, SDCWA, and the Secretary, specifies the federal actions that are necessary to implement the QSA. Execution of the IA would commit the Secretary to making Colorado River water deliveries in accordance with the terms and conditions of the IA to enable the implementation of the QSA. The execution of the IA would authorize changes in the amount and/or location of deliveries of up to 388 KAFY of Colorado River water. Execution of the IA is a condition precedent to the QSA. This EIS evaluates the environmental impacts of the execution of the IA and related accounting and environmental actions as required under NEPA.

1.3.2 Background Relevant to the Inadvertent Overrun and Payback Policy

In accordance with Article V of the Decree, the Secretary compiles and maintains records for the following: diversions of water from the mainstream of the Colorado River; return flow of such water to the mainstream of the Colorado River as is available for consumptive use in the U.S. or in satisfaction of the United States-Mexico Water Treaty of 1944 obligation; and consumptive use of such water. Reclamation reports these data each year in the Decree Accounting Report, as described in section 1.2.3 above.

The Secretary annually consults with representatives of the governors of the Colorado River Basin States, general public and others, and then issues an AOP (described in section 1.2.3) for the coordinated operation of the Colorado River reservoirs. This is done pursuant to the LROC (described in section 1.2.3). Reclamation also requires each Colorado River water user in the Lower Division to submit diversion schedules or estimates of the amount of water the users would need to divert, in advance, for the following calendar year (the calendar year is the annual basis for Decree accounting of consumptive use in the Lower Division). Each user must also report actual water diversions and returns to the mainstream.

Pursuant to 43 CFR part 417, prior to the beginning of each calendar year, Reclamation consults, as appropriate, with holders of BCPA Section 5 contracts (Contractors) for the delivery of water. Under these consultations, Reclamation makes recommendations related to water conservation measures and operating practices in the diversion, delivery, distribution, and use of Lower Division water. Reclamation also reviews the Contractor's estimated water requirements for the ensuing calendar year to determine whether or not deliveries of Colorado River water to each Contractor will exceed those reasonably required for beneficial use under the respective BCPA contract or other authorization for use of Colorado River water. Reclamation then monitors the actual water orders, receives reports of measured diversions and return flows from major Contractors and Federal establishments, estimates unmeasured diversions and return flows, calculates consumptive use from preliminary diversions and measured and unmeasured return flows, and reports these records on an individual and aggregate monthly basis. After the end of the reporting year, when final records are available, Reclamation prepares and publishes the final Decree Accounting Report.

For various reasons, a user may inadvertently consumptively use Colorado River water in an amount that exceeds the amount available under its entitlement (inadvertent overrun). Further, the final Decree Accounting Report may show that an entitlement holder inadvertently diverted water in excess of the quantity of the entitlement that may not have been evident from the preliminary records. As noted in the QSA, IID, MWD, and CVWD have indicated that implementation of the water conservation and transfer projects as described in the QSA cannot be undertaken without the flexibility to payback inadvertent overruns over time. Reclamation is therefore proposing an administrative policy that defines inadvertent overruns, establishes procedures that account for the inadvertent overruns, and defines the subsequent requirements for payback to the Colorado River mainstream (see Appendix I for the complete text of the proposed IOP policy). The application of the IOP has been determined by IID, CVWD, and MWD to be essential to their willingness to enter into the QSA and related agreements.

1.3.3 Background Relevant to the Biological Conservation Measures

In August 2000, Reclamation submitted a BA to the FWS. This assessment covered potential effects to endangered species in the Lower Basin from the proposed ISG (formerly referred to as "Interim Surplus Criteria" and described above in section 1.2.3) and changes in points of delivery and diversion, or water transfers, pursuant to the IA[7]. As part of the BA, and to reduce impacts to endangered species, Reclamation included as part of the project a number of biological conservation measures, such as creation of additional backwaters, and other specific measures. The FWS issued its BO on January 12, 2001. The FWS concluded the proposed Federal actions, with

7. The conservation actions evaluated in this EIS are related to the change in point of delivery of up to 400 KAFY while IA related changes in points of delivery may range up to 388 KAFY.

implementation of the proposed conservation measures, would not jeopardize the continued existence of any threatened or endangered species. This EIS provides the analysis of impacts for the biological conservation measures at a programmatic level, based on available information. Although additional environmental assessment may be required to be undertaken by Reclamation prior to implementation of certain biological conservation measures, no additional assessment is required in order to implement the change in the point of delivery pursuant to the IA and QSA.

1.4 PURPOSE AND NEED

The Secretary, pursuant to the BCPA and Decree, proposes to take Federal actions necessary to support the implementation of the QSA. The purpose of the Federal action is to facilitate implementation of the QSA, which incorporates contractual agreements necessary for California to reduce its use of Colorado River water. The need for the Federal action is to assist California's efforts to reduce its use of Colorado River water to its 4.4 MAF apportionment in a normal year. This reduction in California's use of Colorado River water would benefit the entire Colorado River Basin.

The major components of the proposed action include execution of the IA, adoption of an IOP, and implementation of biological conservation measures associated with the water transfers included in the IA. The proposed IA identifies specific deliveries of Colorado River water that are to be made by the Secretary consistent with the components of the QSA (see Table 2.2-1). These deliveries would enable the participating California water agencies to undertake water conservation actions and transfers meant to contribute to the ultimate goal of reducing California's use of Colorado River water to its 4.4 MAF apportionment during a normal year.

The IOP establishes Decree accounting practices that account for overruns and provides a mechanism for payment of inadvertent overuse back to the River system. Decree accounting is the responsibility of the Secretary. Adoption of an IOP is a condition precedent to execution of the QSA. The underlying need for the IOP is to ensure that Colorado River water users do not exceed their entitlements, by providing a mechanism to "pay back" the River system for inadvertent overuse. The QSA cannot be fully implemented without the approval of the Secretary, since it involves transfers of Colorado River water among the three parties, and requires changes in points of delivery and diversion from the River, which must be approved by the Secretary. As indicated in the IA, the Secretary acknowledges the ongoing importance of the IOP to the QSA.

The biological conservation measures proposed to be implemented were identified in the BA as part of the QSA-related water transfers. These conservation measures are needed to mitigate impacts and avoid adverse modification of critical habitat anticipated to result from the reduction in downstream flow due to the proposed change to an upstream point of diversion of Colorado River water that is associated with the IA and QSA[8].

The components of the proposed action and their relationship to one another are explained in more detail in Chapter 2. This final EIS provides the analyses in compliance with NEPA to allow the Secretary to make a determination of whether or not to approve these Federal actions that would support the implementation of the QSA and, in the broader perspective, assist and support

8. The conservation actions evaluated in this EIS are related to the change in point of delivery of up to 400 KAFY while IA related changes in points of delivery may range up to 388 KAFY.

California's efforts to manage its water use and stay within its 4.4 MAF Colorado River water apportionment during normal years.

1.5 RELATIONSHIP TO OTHER PLANNED PROJECTS, PROGRAMS, AND ACTIONS

There are several water resources management plans, programs, and actions that affect the allocation and distribution of Colorado River water in California and adjacent States. A description of these plans, programs, and actions is provided below. The intent is to provide the reader a "road map" to the Colorado River water-related activities in California, indicating whether and how they relate to the IA. As appropriate, these same projects are included in the Chapter 4 analysis of cumulative impacts, where, in conjunction with the proposed action, they have the potential to contribute to a cumulative impact. This EIS tiers to and incorporates by reference the information contained in the documents listed below.

1.5.1 Related Projects to and Components of the IA

California's Colorado River Water Use Plan

The California Plan has been developed by the CRB to prepare for likely reductions of Colorado River water available to California. The California Plan, which was released in draft form in May 2000, is available for public review at http://ceres.ca.gov/crb/reports.htm. California's use of Colorado River water varied from 4.2 to 5.4 MAFY from 1964 to 1999, with an average of 4.9 MAFY. The goal of the California Plan is to put in place a realistic strategy to assure that California will be able to reduce its use of Colorado River water to its 4.4 MAFY apportionment in normal years, and to meet its needs from sources that do not jeopardize the apportionments of other States.

The California Plan provides a policy framework by which programs, projects, and other activities would be coordinated and cooperatively implemented, allowing California to most effectively satisfy its annual water supply needs within its annual apportionment of Colorado River water. It includes the conservation of water within Southern California and the transfer of conserved water from agricultural to predominantly urban uses. It also identifies future groundwater conjunctive use projects that could be used to store Colorado River water when available. The California Plan also outlines how California could continue to use surplus Colorado River water during the ISG period (2002 to 2016).

Quantification Settlement Agreement

The QSA provides for implementation of major components of the California Plan and incorporates the contractual agreements necessary for California to reduce its use of Colorado River water. The IA directly relates to the QSA in that the IA reflects the Secretary's agreement to make Colorado River water deliveries, which will enable implementation of the agreements specified in the QSA. However, the Secretary is not a signatory to the QSA, which is an agreement among IID, CVWD and MWD. SDCWA, although not a signatory to the QSA, is a recipient of water pursuant to the QSA, since the QSA would implement a 1998 agreement between IID and SDCWA for transfer of conserved water. The QSA would be in effect for up to 75 years. The QSA is the subject of a PEIR in compliance with CEQA, which was prepared in parallel with this EIS. The components of the IA and QSA are described in detail in Chapter 2 of this EIS. The Draft PEIR (CVWD et al. 2002) was

made available at CVWD, Highway 111 at Avenue 52, Coachella, CA 92236; IID Headquarters, 333 East Barioni Blvd., Imperial, CA 92251; MWD Headquarters, 700 N. Alameda St., Los Angeles, CA 90012; and SDCWA, 4677 Overland Avenue, San Diego, CA 92123. The Final PEIR was certified by the co-lead agencies during the week of June 24th.

Interim Surplus Guidelines

These guidelines are discussed in section 1.2.3 above.

Coachella Valley Water Management Plan

CVWD prepared the Coachella Valley Water Management Plan (CVWMP) (CVWD 2000a) to establish an overall program for managing its surface and groundwater resources in the future. The CVWMP involves a number of actions to reduce the current overdraft of the groundwater basin in the Coachella Valley. These include increased use of Colorado River water to reduce groundwater pumping, water recycling, and conservation actions to decrease the overall consumption of water. The CVWMP (CVWD 2000a) is available from CVWD, Highway 111 at Avenue 52, Coachella, CA 92236, and is published on the Internet at http://www.cvwd.org/Public_Docs.htm. The potential environmental impacts of the overall CVWMP were addressed in a PEIR issued by CVWD (the draft was issued in June 2002 and the final in September 2002). Copies of these documents are available from CVWD at the address above.

Water that becomes available through implementation of the IA and QSA will be used to reduce groundwater overdraft in the Coachella Valley. The IA/QSA related elements of the CVWMP are described in detail in Chapter 2 of this EIS. Under the IA and QSA, from 55 to 155 KAFY of Colorado River and an exchange of State Water Project (SWP) water would be used to replace an equivalent portion of the groundwater now used, or would be used for direct groundwater recharge. Reducing the amount of groundwater pumpage and increasing the use of imported water would allow the overdrafted aquifer to recover.

San Luis Rey Indian Water Rights Settlement

On November 17, 1988, the President approved the San Luis Rey Indian Water Rights Settlement Act (Title I of Public Law 100-675) as amended by the Act of October 27, 2000, and Public Law 106-377. The San Luis Rey Indian Water Rights Settlement Act authorizes a source of water to settle the reserved water rights claims of the La Jolla, Rincon, San Pasqual, Pauma, and Pala Bands of Mission Indians, the City of Escondido, the Escondido Mutual Water Company (which is no longer in existence), and Vista Irrigation District[9]. The Act authorizes the Secretary to arrange for development of a water supply for the benefit of the bands of not more than 16 KAFY and authorized the Secretary to use water conserved from the works authorized by Title II of the same Act for this purpose. The IA provides that the Secretary deliver Priority 3a water conserved from the AAC and Coachella Canal lining projects (described below) to MWD and/or IID and make water available for the benefit of the San Luis Rey Indian Water Rights Settlement Parties. The October 27, 2000 Amendment states the Secretary shall permanently furnish annually 16 KAF of the

9. La Jolla, Rincon, San Pasqual, Pauma, and Pala Bands of Mission Indians, the City of Escondido, the Escondido Mutual Water Company, and Vista Irrigation District are collectively termed the San Luis Rey Indian Water Rights Settlement Parties within this EIS.

water conserved by the works authorized by Title II for the benefit of the San Luis Rey Indian Water Rights Settlement Parties in accordance with the settlement agreement. The implementation agreement for the San Luis Rey Indian Water Rights Settlement Act was signed January 18, 2001, and a copy of this implementation agreement is provided in Appendix H of this EIS. The settlement agreement is under negotiation.

All-American Canal Lining Project

The lining of the AAC was authorized by Title II of Public Law 100-675, dated November 17, 1988 and in accordance with the terms of the Allocation Agreement. This Act authorizes the Secretary to construct a new lined canal or to line the previously unlined portions of the AAC to reduce seepage of water. Title II authorizes the Secretary to determine the amount of water conserved by this canal lining. The Act further directs that the water so conserved be made available for consumptive use by California contractors within their service areas according to their priority under the Seven Party Agreement. Reclamation prepared a Final EIS/EIR for the AAC Lining Project in March 1994 (USBR and IID 1994). This EIS/EIR states that the preferred alternative for reducing seepage from the AAC would conserve approximately 67.7 KAFY. The Final EIS/EIR was filed with the U.S. Environmental Protection Agency (EPA) on April 14, 1994 and noticed in the *Federal Register* on April 19, 1994. A ROD was prepared and signed by the Lower Colorado Region's Regional Director on July 29, 1994. The canal-lining project has been approved but not yet constructed.

The QSA divides the 67.7 KAF of annually conserved water as follows: 56.2 KAFY to MWD and/or IID under certain circumstances and 11.5 KAFY for San Luis Rey Indian Water Rights Settlement Act purposes. The State of California enacted legislation to assist in funding the lining of the AAC to help facilitate implementation of the California Plan. The change in point of delivery and the use of conserved water from this project is considered in this EIS.

Coachella Canal Lining Project

The lining of the previously unlined portions of the Coachella Branch of the AAC (Coachella Canal) was also authorized by Title II of Public Law 100-675. This Act authorizes the Secretary to construct a new lined canal or to line the previously unlined portions of the Coachella Canal to reduce seepage of water. As with the AAC, Title II authorizes the Secretary to determine the amount of conserved water and directs that the water so conserved be made available for consumptive use by California contractors within their service areas according to their priority under the Seven Party Agreement. Reclamation prepared a Draft EIS/EIR for the Coachella Canal Lining Project in December 1993. This draft was updated and recirculated for public review in September 2000. The Final EIS/EIR was filed with the EPA in April 2001. A ROD was prepared and signed by the Lower Colorado Region's Regional Director on March 27, 2002. The preferred alternative for reducing seepage from the Coachella Canal would result in projected water savings for purposes of the QSA of approximately 26 KAFY.

The QSA divides the 26 KAFY of conserved water as follows: 21.5 KAFY to MWD and/or IID under certain circumstances and 4.5 KAFY for San Luis Rey Indian Water Rights Settlement Act purposes. Title I of Public Law 100-675 authorizes use of some of the conserved water to settle the reserved water rights claims of the La Jolla, Rincon, San Pasqual, Pauma, and Pala Bands of Mission Indians in San Diego County, California. The legislation enacted by the State of California to fund

the lining of the AAC includes funding to line the Coachella Canal. The change in point of delivery and the use of conserved water from this project is considered in this EIS.

IID/SDCWA Water Conservation and Transfer Agreement

IID, as the lead agency under CEQA, and Reclamation, as the lead agency under NEPA, have prepared an IID Water Conservation and Transfer Project EIR/EIS (IID and USBR 2002) to assess the transfer of up to 300 KAFY of water conserved by IID to SDCWA, pursuant to the 1998 IID/SDCWA Water Conservation and Transfer Agreement. Also, that EIR/EIS assesses the water transfers by IID that would apply if the QSA is approved and implemented. The QSA limits SDCWA to 200 KAFY of water conserved by IID; provides an option to CVWD to acquire up to 100 KAFY of conserved water transferred by IID, in two 50 KAFY increments; and provides an option to MWD to acquire any portion of this 100 KAFY that CVWD elects not to acquire. The IID Water Conservation and Transfer Project EIR/EIS assesses the IID conservation program and the transfer and use of conserved water by SDCWA at a project level. The impacts of the receipt and use of conserved water by MWD pursuant to the QSA are addressed in the QSA PEIR. The effects of receipt and use of conserved water by CVWD pursuant to the QSA are addressed programmatically in the IID Water Conservation and Transfer Project EIR/EIS and at a project level in the QSA PEIR and the PEIR prepared for the CVWMP described above.

The IID Water Conservation and Transfer Project EIR/EIS also assesses the anticipated effects resulting from FWS's issuance of an incidental take permit and approval of an HCP related to the implementation of the IID/SDCWA Water Conservation and Transfer Agreement. The Draft EIR/EIS (IID and USBR 2002) was released January 2002. The IID Board of Directors certified the Final EIR/EIS in June 2002. In order to comply with CEQ regulations implementing NEPA, Reclamation is preparing a fully integrated, stand alone Final EIR/EIS, which is scheduled to be filed with the EPA concurrently with the filing of this Final IA EIS. As indicated in section 1.1, the Secretary intends to make a final decision on the October 2002 version of the IID Water Conservation and Transfer Project EIR/EIS concurrent with this EIS.

1.5.2 Geographically Related Projects

Lower Colorado River Multi-Species Conservation Program

The Lower Colorado River Multi-Species Conservation Program (MSCP) is a partnership of State, Federal, Tribal, and other public and private stakeholders with an interest in managing the water and related resources of the Colorado River in the Lower Basin. The underlying need for the MSCP is to implement a conservation plan that enhances the status of protected species and provides the basis for incidental take authorizations under the Federal Endangered Species Act (ESA) and the California Endangered Species Act (CESA), as amended, for ongoing operations and maintenance and proposed future operations of the lower portion of the Colorado River.

The purpose of the MSCP is to develop a Conservation Plan that will provide the following:

- Conserve habitat and work toward the recovery of "covered species" within the historic floodplain of the Lower Colorado River, pursuant to the ESA and attempt to reduce the likelihood of additional species listings under the ESA; and

- Accommodate current water diversions and power production and optimize opportunities for future water and power development, to the extent consistent with law.

The MSCP covers the mainstem of the lower portion of the Colorado River from below Glen Canyon Dam to the Southerly International Boundary (SIB) with Mexico. The program area includes the historic floodplain and reservoir full-pool elevations. Specific conservation measures are being developed in the following categories:

- Protection of existing habitat;
- Enhancement of existing habitat;
- Restoration to create new habitat;
- Management of habitat to maintain and preserve ecological functions;
- Avoidance and minimization of direct impacts on individuals and populations of covered species; and
- Population enhancement measures that directly or indirectly increase population levels of covered species.

Conservation measures would be implemented over a 50-year period and would focus on the lower portion of the Colorado River from Lake Mead to SIB. The MSCP is intended to cover any incidental take associated with a number of actions, including changes in point of diversion of up to 1.574 MAF of Colorado River water from below Parker Dam. This volume was based on a series of conceptual transfers and changes in points of diversion that would maintain full aqueducts to urban users and provide water for anticipated Federal programs. With the exception of the 400 KAFY change in point of diversion addressed in the BO, none of the conceptual "covered projects" are proposed and considered reasonably foreseeable from a CEQA perspective. An EIS/EIR is being prepared to analyze the impacts of the MSCP Conservation Plan. Reclamation and FWS are the lead agencies under NEPA, and MWD is the lead agency under CEQA.

Salton Sea Restoration Project

As described in the Salton Sea Restoration Project (SSRP) Draft EIS/EIR (USBR and Salton Sea Authority [SSA] 2000), the Salton Sea currently is an excessively saline, nutrient-rich lake in a closed basin. The Sea was formed by an accidental breach of an irrigation structure in 1905, which resulted in an uncontrolled flow from the Colorado River into the basin for 18 months. The Salton Sea is sustained by drainage from agricultural operations in the Imperial Valley. In discussing the legislation to reclaim the Salton Sea, House Report No. 105-621, released on July 14, 1998 by the U.S. House of Representatives Committee on Resources, states the following:

> Land, recreational, and ecological values associated with the Sea have declined over the last decade, due in large part to the rising salinity and surface elevation. Without efforts to reduce and stabilize the salinity level, it will continue to rise and will have severe impacts on the existing fish and wildlife resources, as well as causing odor and land value impacts.

The Salton Sea Reclamation Act of 1998 (Public Law 105-372), developed in response to these conditions, directs the Secretary to do the following:

> …complete all studies, including, but not limited to environmental and other reviews, of the feasibility and benefit-cost of various options that permit the continued use of the Salton Sea as a reservoir for irrigation drainage and (i) reduce and stabilize the overall salinity of the Salton Sea; (ii) stabilize the surface elevation of the Salton Sea; (iii) reclaim, in the long term, healthy fish and wildlife resources and their habitats; and (iv) enhance the potential for recreational uses and economic development of the Salton Sea.

The Salton Sea study is separate from the proposed action, and can proceed with or without the proposed IA. PL 105-372 specifically directs the Secretary not to include any option that (1) relies on the importation of any new or additional water from the Colorado River; or (2) is not consistent with existing rights and obligations of persons under treaties, laws, decrees, contracts, and agreements that make up the Law of the River. In furtherance of this limitation, PL 105-372 directs the Secretary to:

> …apply assumptions regarding water inflows into the Salton Sea Basin that encourage water conservation, account for transfers of water out of the Salton Sea Basin, and are based on a likely maximum reduction in inflows into the Salton Sea Basin which could be 800,000 acre-feet or less per year.

House Report No. 105-621 specifically refers to efforts underway that would transfer between 130 and 300 KAFY of water from IID to SDCWA and acknowledges that this would reduce the inflow to the Sea.

To implement the directive provided in PL 105-372, the SSA, as the lead California agency under CEQA, and Reclamation, as the lead Federal agency under NEPA, released a Draft EIS/EIR in January 2000 (USBR and SSA 2000), which evaluated alternative methods of restoring the Salton Sea. A revised alternatives document and modeling and impact analyses are currently being prepared. The document is currently scheduled to come out in November 2002.

Rule for Offstream Storage of Colorado River Water

Reclamation developed, and the Department of the Interior (DOI) adopted, a rule to facilitate offstream storage of Colorado River water and development and release of intentionally created unused apportionment in the Lower Division States (Arizona, California, and Nevada). Reclamation prepared an Environmental Assessment (EA) to assess the environmental impacts of the rule, and a Finding of No Significant Impact was issued on October 1, 1999. The final rule was published in the *Federal Register* on November 1, 1999 and became effective December 1, 1999. It establishes a procedural framework for an authorized storing entity to enter into storage agreements with authorized entities in Consuming States to store Colorado River water offstream. Under the agreements, the Storing State will use water it stores under an interstate agreement and, in return, decrease its consumptive use of Colorado River water, thereby developing "Intentionally Created Unused Apportionment" (ICUA) that the Secretary will release for consumptive use in the Consuming State.

The Arizona Water Banking Authority (AWBA) has entered into an initial interstate banking agreement with SNWA and the Colorado River Commission of Nevada (CRC) under which Colorado River water will be stored by AWBA for the benefit of Nevada. AWBA, SNWA, CRC,

and Reclamation are developing a Storage and Interstate Release Agreement that will cover the actions to be taken by the U.S. AWBA is developing a third agreement with CAWCD for Development of ICUA under which Arizona will be committed to reduce its consumptive use of Colorado River water when water is recovered from offstream storage. Under these agreements, when, in the future, SNWA wants to receive the benefit of the stored water, AWBA will recover the stored water that will be used in Arizona, permitting CAWCD to reduce its consumptive use of Colorado River water, thereby allowing the Secretary to release the ICUA to SNWA under Article II (B)(6) of the Decree.

Reclamation adopted a programmatic approach to environmental compliance for the Offstream Storage Rule because many of the details of specific agreements under the rule were unknown at that time, such as conveyance, storage, and forbearance. Accordingly, Reclamation prepared a final programmatic environmental assessment (FPEA), dated November 1999, for the Offstream Storage Rule, which analyzed the most likely scenario that AWBA would store 1.2 MAF of Colorado River water offstream in Arizona for the benefit of SNWA. In the rule, Reclamation committed to complete environmental compliance documentation and appropriate consultations before executing a specific Storage and Interstate Release Agreement (SIRA). Accordingly, Reclamation and SNWA jointly prepared an associated EA that analyzes the potential impacts of the storage and retrieval actions that will occur under the SIRA. Under this proposed agreement, AWBA will store up to 1.2 MAF of recoverable water in its groundwater aquifers for the benefit of SNWA. Water is expected to be stored between 2002-2016, at a maximum annual rate of 200 KAF per year. The specific schedule for retrieval of stored water and delivery of ICUA is unknown because it is dependent upon several factors, including actual demands, available water resources, and conditions on the Colorado River. However, under Arizona law, the maximum quantity of ICUA that can be developed for interstate use in any given year is 100 KAFY. The FPEA for the rule identified and analyzed retrieval of water at this maximum rate of recovery. Under the ISG, if there are full surplus conditions on the Colorado River (Lake Mead elevation at or above 1,145 feet msl), SNWA may not need to utilize the ICUA until sometime after 2016. However, if there is limited or no surplus water available (Lake Mead elevation at or below 1,145 feet msl), SNWA may need to begin utilizing some of the ICUA as early as 2006. SNWA estimates the maximum annual retrieval of ICUA would be approximately 79 KAFY in the year 2025. SNWA's estimated schedule for diversion and consumptive use of ICUA in Nevada is provided in Table 2 attached to the EA. Reclamation and SNWA completed the EA for the SIRA in June 2002 and a Finding of No Significant Impact was executed by Reclamation on June 6, 2002, for the SIRA between the AWBA, CRC, SNWA, and the U.S. acting through the Secretary. The SIRA is in the process of being signed by the above parties.

Colorado River Basin Salinity Control Program

Pursuant to section 303 of the Clean Water Act of 1972, the EPA promulgated regulations requiring water quality standards for salinity, numeric criteria and a plan of implementation for salinity control. The Seven Colorado River Basin States, acting through the Colorado River Basin Salinity Control Forum, adopted and the EPA approved numeric criteria for flow-weighted average annual salinity.

Based on past and projected future water development, the Colorado River Basin Salinity Control Forum determined that 1,477,700 tons of salt must be removed or prevented from entering the system annually to maintain the numeric criteria through 2015 (DOI 1999). The plan of

implementation includes projects that remove the required salt tonnage. To meet the goal of 1.48 million tons of salinity control through 2015, it will be necessary to fund and implement potential new measures that ensure the removal of an additional 756,000 tons annually.

This action is pursuant to Title II of the 1974 Colorado River Basin Salinity Control Act, Public Law 93-320, as amended. Title I of this act provides for the construction, operation, and maintenance of salinity control projects in the Colorado River Basin. A wide range of salinity control actions has been undertaken in the Colorado River Basin as part of these programs. These actions include salinity control activities on U.S. Bureau of Land Management (BLM) land, a voluntary on-farm salinity control program by the U.S. Department of Agriculture (USDA), and a broad range of activities implemented by Reclamation. Reclamation projects include deep well injection of natural brines, irrigation efficiency projects, well plugging, and other projects that are found to be cost effective in Reclamation's competitive funding process.

Land Management, Crop Rotation, and Water Supply Program in the Palo Verde Valley

MWD and the PVID are developing a land management, crop rotation, and water supply program in the Palo Verde Valley. The program's objective is to develop a flexible and reliable water supply for MWD of approximately 100 KAFY for 35 years and to assist in stabilizing the farm economy within the Palo Verde Valley through sign-up payments and annual payments for participating farmers and through implementation of specific community improvement programs. Participation in the program would be voluntary. Participating farmers would, at MWD's request and with specific notice periods, not irrigate a portion of their farmland. The same land would not be irrigated for a minimum of a 1-year term and a maximum of a 5-year term at the farmer's option. A base area of 6,000 acres would not be irrigated each year of the 35 years. MWD would have the option to increase the non-irrigated area from 6,000 acres up to a maximum of 26,500 acres per year. Overall, a maximum of 24,000 acres per year in any 25-year period or 26,500 acres per year in any 10-year period during the 35-year program would be dedicated to the program. MWD would provide financial compensation to the participants. Not irrigating a portion of the Palo Verde Valley's farmland would result in less Colorado River water being used by PVID. The amount of water conserved by the Program would be determined on an annual basis. A draft EIR assessing the impacts of this program was released by PVID in May 2002, and a final EIR was issued in September 2002. The PVID Board filed a Notice of Determination on September 18, 2002.

Total Maximum Daily Load Program

Pursuant to the requirements of the Clean Water Act, the Colorado River Regional Board identified and ranked "impaired waterbodies" for which total maximum daily loads (TMDLs) need to be established. The Board will develop and adopt an Implementation Plan for each TMDL/water body combination and identify implementing actions, monitoring and surveillance for compliance, and technical and economic feasibility. The Regional Water Quality Control Board (RWQCB) has identified the Salton Sea and its tributaries (i.e., New River, Alamo River, Imperial Valley drains, Palo Verde outfall drain, Coachella Valley Stormwater Channel [CVSC]) as quality limited waters. The Salton Sea Watershed has also been identified as a priority watershed.

Brawley, California Constructed Wetlands Demonstration Project

The Brawley Constructed Wetlands Demonstration Project (Brawley Wetlands Project) involves the construction of two pilot treatment wetlands to improve water quality in the Imperial Valley's agricultural drains, the New River, and the Salton Sea. A 5-acre wetland has been constructed on a 7-acre site near the city of Brawley, which is designed to divert and improve the quality of approximately 2.4 million gallons of New River water per year. A second, larger wetland (40 acres) has been constructed on a 68-acre site near the City of Imperial. This 40-acre wetland would collect 6.9 million gallons of agricultural water per year from IID's Agricultural Rice 3 Drain. Both wetlands are designed to remove silt from inflows passing through a sedimentation basin and reduce nutrient loads, pesticide/herbicide toxicity, and selenium concentrations as water flows through a series of shallow ponds. A monitoring program has been underway for over 6 months. The purpose of the monitoring program is to determine relative water quality improvement and the effects on wildlife (SSA and Reclamation 2000).

1.6 RELATED DOCUMENTS

As discussed above, a number of projects are related to the actions considered in this EIS. These projects and the associated environmental documentation are discussed above under section 1.5.1. This EIS tiers to and incorporates by reference the information contained in the documents listed below.

- QSA PEIR
- IID Water Conservation and Transfer Project EIR/EIS
- CVWMP PEIR

The documents described below were previously completed and are on file at the following locations:

U.S. Bureau of Reclamation Lower Colorado Region 500 Date Street Boulder City, NV 89006-1470 (702) 293-8414	U.S. Bureau of Reclamation Phoenix Area Office (PXAO) 2222 W. Dunlap Ave., Suite 100 Phoenix, AZ 85021 (602) 216-3999	U.S. Bureau of Reclamation Southern California Area Office 27710 Jefferson Ave., Suite 201 Temecula, CA 92590 (909) 695-5310

All-American Canal Lining Project Final EIS/EIR

Reclamation prepared a Final EIS/EIR for the AAC Lining Project in March 1994 (USBR and IID 1994). This EIS/EIR states that the preferred alternative for reducing seepage from the AAC would conserve approximately 67.7 KAFY. The Final EIS/EIR was filed with the EPA on April 14, 1994 and noticed in the *Federal Register* on April 19, 1994. A ROD was prepared and signed by the Lower Colorado Region's Regional Director on July 29, 1994. On November 22, 1999, Reclamation determined that the EIS and the ROD continued to meet the requirements of NEPA.

Coachella Canal Lining Project Final EIS/EIR

A revised and updated Draft EIS/EIR for the Coachella Canal Lining Project was circulated for public review by Reclamation and CVWD in September 2000; a Final EIS/EIR was released in April 2001, the Final EIR was certified by CVWD in May 2001. A ROD was prepared and signed by the

Lower Colorado Region's Regional Director on March 27, 2002. This project is described in section 1.5 above. As noted, use of the conserved water from this project is being assessed in the IA EIS. The Final EIS/EIR is available from CVWD, Highway 111 at Avenue 52, Coachella, CA 92236.

Final PEIR on the Implementation of a Water Conservation Program by the Imperial Irrigation District and the Potential Initial Transfer of 100 KAFY of Conserved Water

A Final PEIR on the Implementation of a Water Conservation Program by the Imperial Irrigation District and the Potential Initial Transfer of 100 KAFY of Conserved Water was prepared in 1986 by IID. This document evaluates impacts associated with the existing water conservation program agreed to in the *Agreement for Implementation of a Water Conservation Program and Use of Conserved Water* (IID/MWD 1988 Agreement). Two additional agreements were implemented in 1989: (1) the IID/MWD/PVID/CVWD 1989 Approval Agreement, which represents the approval of CVWD and PVID to the IID/MWD 1988 Agreement, and 2) the MWD/CVWD 1989 Agreement to Supplement Approval Agreement, which deals with a limitation on CVWD's net Colorado River diversions and the circumstances under which MWD would reduce its use of conserved water. The terms of the three agreements extend for a minimum of 35 years after full implementation of the conservation program and continue until terminated. As described in Chapter 2, under the terms of the QSA, the amounts of water available to MWD and CVWD under these agreements would be modified. Implementation of the IA would commit the Secretary to deliver 20 KAFY to CVWD. The PEIR and agreements are available at IID Headquarters, 333 East Barioni Blvd., Imperial, CA 92251 or at MWD Headquarters, 700 N. Alameda St., Los Angeles, CA 90012.

Final EIR for Modified East Lowline and Trifolium Interceptors, and Completion Projects

It was initially assumed that the 14 projects approved as part of the 1986 PEIR described immediately above would adequately meet the conservation terms of the IID/MWD 1988 Agreement and subsequent agreements between IID and MWD. It was subsequently determined, however, that additional measures would be needed. The Final EIR for Modified East Lowline and Trifolium Interceptors, and Completion Projects (IID 1994) assesses the impacts of water conservation projects, including two new lateral interceptor systems (lined canals that extend across the lower reaches of lateral canals to capture unused flows) and a set of 13 potential "completion projects," such as additional lateral interceptor systems, seepage recovery, canal/lateral lining, water conservation/flood control through land retirement, and new reservoir construction. The IID Board of Directors certified the Final EIR on June 7, 1994. The Final EIR is available at IID Headquarters, 333 East Barioni Blvd., Imperial, CA 92251.

1.7 PUBLIC INVOLVEMENT AND SCOPING PROCESS

On January 18, 2001, Reclamation published a *Federal Register* Notice of Public Comment Period on a proposed policy that would identify inadvertent overruns, and define subsequent payback requirements to the Colorado River mainstream. On March 9, 2001, a second *Federal Register* notice was published, extending the public comment period to April 10, 2001. Sixteen letters of comment were received by Reclamation on the proposed IOP. Also on March 9, 2001, Reclamation published in the *Federal Register* a Notice of Intent (NOI) to prepare an EIS and initiation of scoping process for the IA, IOP, and implementation of the biological conservation measures. The scoping comment period also ended April 10, 2001. Six letters of comment were received in response to the NOI. Comments addressed a number of issues, including the following:

- Project description (the need for flexibility to accommodate future shifts in water policy and consideration of in-stream and other public interest beneficial uses in long-term water resource planning; the need for detailed descriptions of implementation, monitoring, and enforcement strategies).
- EIS content (the geographic scope of the analysis and the need to identify the relationship of the proposed action to all major proposed and related Federal and State actions along the lower portion of the Colorado River; specific resources to be analyzed; the need for a detailed mitigation plan; the need to include sufficient information and analysis from documents incorporated by reference; the need for an appropriate baseline and no-action scenario).
- Expansion of the range of project alternatives.
- The need for compliance with the ESA.

On April 26, 2001, a separate letter was sent to 55 Indian Tribal representatives, initiating government-to-government coordination pursuant to CEQ Regulations for Implementing the Procedural Provisions of the NEPA (40 CFR 1500-1508, § 1501.7); the National Historic Preservation Act (§ 101[d][2]) (16 U.S.C. § 470f), the new Section 106 regulations, "Protection of Historic Properties" (36 CFR Part 800.2[c][2]); and Executive Order 13175 of November 6, 2000, pertaining to consultation and coordination with Indian Tribal governments. The only comment letter received in response to this letter was from the Fort Mojave Indian Tribe, which requested that it be placed on the distribution list for the EIS. No concerns or issues were raised in this letter.

On February 15, 2001, Reclamation staff met with members of seven interested environmental groups at their request to discuss the proposed IOP. In addition, informal discussions and a meeting on March 22, 2001, were held with representatives of the Colorado River Basin States to discuss the technical details of the proposed IOP. A conference call to discuss these technical aspects was held with the same seven environmental groups on April 3, 2001. Coordination with the FWS pursuant to the Fish and Wildlife Coordination Act was initiated in April 2001, and several meetings and informal discussions were carried out. Extensive coordination with the FWS had been previously conducted pursuant to the Section 7 consultation on ISG and the IA. In August and September 2001, Reclamation met with the BIA and Colorado River Indian Tribes (CRIT) to review the impacts to power generation from the proposed water transfers. In addition, numerous meetings were held with the four affected California agencies regarding coordination of NEPA and CEQA compliance, and on July 26, 2001, Reclamation met with EPA staff to provide an overview of the proposed action. On November 7, 2001, Reclamation met with the Torres Martinez Band of Desert Cahuilla Indians to discuss potential impacts to the Salton Sea.

A scoping summary report was prepared to provide a synopsis of the scoping process conducted for the proposed action. The scoping summary report identifies efforts made to notify interested agencies, organizations, and individuals about the proposed action and to obtain input from those entities regarding the range of alternatives to be evaluated and the issues to be addressed in the EIS. The report also presents the major points made in the public comments received during the scoping process. The scoping summary report is available on Reclamation's Lower Colorado River Operations website at http://www.lc.usbr.gov.

The draft EIS was filed with the EPA on January 4, 2002, and the EPA's NOA for the draft EIS was published in the *Federal Register* on January 11, 2002. EPA's NOA initiated a 60-day public review of the draft EIS. Reclamation agreed to extend the public review period by 14 days. An NOA for the public review extension was published in the *Federal Register* on March 15, 2002. Public hearings were held in Blythe, California; Henderson, Nevada; and Los Angeles, California on February 5, 6, and 7, 2002, respectively. Forty-one people attended the public hearing in Blythe, 14 in Henderson, and six in Los Angeles. Issues of concern presented during the public hearings included confusion over the project description, the IOP process, potential impacts to biological resources, and the water agreement between the U.S. and Mexico. The public review and comment period ended on March 26, 2002. Comment letters received during the public review period and responses to those comments are provided in Chapter 11 of this EIS.

1.8 EIS ORGANIZATION AND APPROACH

The IA, IOP, and biological conservation measures are described in detail in Chapter 2 of this EIS; the affected environment, environmental impacts of these actions, and mitigation measures for potentially significant effects are described in Chapter 3 for each resource considered; and Chapter 4 includes other NEPA considerations, such as the regulatory framework, cumulative impacts, the relationship between short-term uses of the environment and long-term productivity, and irreversible and irretrievable commitments of resources. The remaining sections include a list of references and persons/agencies consulted; a glossary of technical terms; definitions of acronyms; a list of preparers; an index; a distribution list; and the comment letters and responses related to the draft EIS.

The EIS describes the direct impacts of the Federal action on the Colorado River, such as changes in flow and reservoir storage. The EIS also summarizes and incorporates by reference analyses of off-river impacts that would result from actions taken by the QSA participating agencies as a result of implementing the QSA. This is because the changes in water deliveries agreed to by the Secretary in the IA will enable the QSA to be fully implemented. It is important to recognize that while the EIS describes the indirect off-river impacts of actions taken by the QSA participating agencies, it does not "federalize" those actions, nor does it create a requirement for supplemental NEPA compliance for those actions. The non-Federal actions carried out by the participating agencies pursuant to the QSA will need to comply with CEQA, CESA, and other State and local requirements. Toward that end, the California participating agencies prepared a PEIR for the QSA, CVWD prepared a PEIR for the CVWMP (CVWD 2002), and an EIR/EIS was prepared for the IID Water Conservation and Transfer Project, pursuant to these State and local requirements.

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CHAPTER 2

DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

2.1 INTRODUCTION

This chapter describes the proposed Federal action and its three components previously presented in section 1.1, the No-Action Alternative (i.e., the likely consequences of not implementing the Federal action), and other alternatives considered.

2.2 PROPOSED ACTION

The proposed action is the execution of the IA, adoption of the IOP, and implementation of the biological conservation measures.

2.2.1 Execution of the Implementation Agreement

The IA component of the proposed action contains terms and conditions pertaining to delivery of Colorado River water, which enable implementation of the QSA. Execution of the IA reflects the Secretary's approval of the QSA. For purposes of the analysis in this EIS, the IA includes all of the components of the QSA that relate to water transfers and changes in delivery of Colorado River water. The QSA is an agreement among CVWD, IID, and MWD to budget their portion of California's apportionment of Colorado River water among themselves, and to make available water conserved in the IID service area to SDCWA (these four water agencies are collectively referred to as the participating agencies). The QSA quantifies, by agreement, the amount of Colorado River water available to the participating agencies and calls for specific, changed distribution of that water among the agencies for the next 75 years. This is referred to as the "quantification period" and extends for up to 75 years, from 2002 to 2077. The QSA is a major component of the California Plan (described in section 1.5) and is part of the means by which California would reduce its Colorado River water consumptive use to 4.4 MAF in a normal year. By approving the IA, the Secretary would agree to make Colorado River water deliveries to the participating agencies, which would enable them to implement this changed distribution. The agencies' service areas, as well as the affected portion of the Colorado River, are shown on the project location map (Figure 2.2-1). Table 2.2-1 lists the Federal actions associated with the QSA components and the various NEPA and/or CEQA documents that have been or are being prepared to address impacts of these components.

Implementation of the IA and QSA would not affect the delivery, distribution, and/or use of Colorado River water by the States of Arizona and Nevada; nor would the IA and QSA affect the delivery, distribution, and/or use of Colorado River water by the Upper Division States. Also, the IA and QSA would not affect Colorado River water deliveries to Mexico under the United States–Mexico Water Treaty of 1944 and other applicable agreements and would not affect the delivery, distribution, and/or use of Colorado River water within Mexico. Within the State of California, the IA and QSA would only affect the delivery, distribution, and/or use of Colorado River water by the participating agencies (CVWD, IID, MWD, and SDCWA). The IA and QSA would not affect the delivery, distribution, and/or use of Colorado River water by other agencies within California that hold rights to Colorado River water under the Seven Party Agreement (i.e., Priorities 1, 2, 3b, 6b, and 7); nor would the IA and QSA affect the delivery, distribution, and/or use of Colorado

Table 2.2-1. QSA Component, IA Federal Action and Associated Environmental Review[1]

Quantification Settlement Agreement Component	*Implementation Agreement Federal Action*	*Associated Environmental Documentation*
Priority 3a Colorado River water capped at 3.1 MAFY IID consensually limits its consumptive use of Priority 3a water to a specified amount of 3.1 MAFY subject to adjustment as provided in the QSA and the IOP.	Secretary shall deliver Colorado River water to Imperial Dam in an amount up to, but not more than, IID's Priority 3a cap as defined in the IA or as may be acquired under the QSA subject to Secretarial approval where necessary.	1. This EIS provides NEPA compliance for the Secretary's delivery of Colorado River water in conformance with IID's Priority 3a cap (as defined in the IA and QSA). 2. The QSA PEIR provides program level CEQA compliance for IID's Priority 3a cap (as defined in the IA and QSA). 3. Project-level CEQA compliance for IID's Priority 3a cap (as defined in the IA and QSA) is provided in the IID Water Conservation and Transfer Project EIR/EIS.
IID/MWD 1988 Agreement, IID/MWD/PVID/CVWD 1989 Approval Agreement, and MWD/CVWD 1989 Agreement to Supplement Approval Agreement MWD would forego, and would not be charged with, the use of 20 KAFY of IID conserved water. CVWD would be allowed the use of 20 KAFY of this water under terms of the 1989 IID/MWD/PVID/CVWD Approval Agreement, and MWD/CVWD Supplemental Agreement, as amended.	Secretary shall continue to deliver Colorado River water to Lake Havasu in an amount equal to that amount of water conserved by IID for the benefit of MWD in accordance with the provisions of the amended 1988 and 1989 Agreements and the IA. Secretary shall deliver Colorado River water to Imperial Dam in the amount of 20 KAFY for the benefit of CVWD in accordance with the provisions of the amended 1989 Agreements, and the IA.	1. This EIS provides NEPA compliance for the change in point of delivery of 20 KAFY from Lake Havasu to Imperial Dam. 2. This EIS provides NEPA compliance for the Secretary's reduced delivery to MWD, and increased delivery to CVWD, of this water. 3. NEPA compliance for the 1988 IID/MWD Agreement was provided by Categorical Exclusion No. LC-89-2, dated January 6, 1989. 4. Program level CEQA compliance for the IID/MWD 1988 Agreement was included in the 1986 IID Proposed Water Conservation Program and Initial Water Transfer EIR. 5. CEQA compliance for the IID/MWD 1988 Agreement was included in 1994 IID Modified East Lowline and Trifolium Interceptors, and Completion Projects EIR. 6. CEQA compliance for MWD use of conserved water for the 1989 Approval Agreement was included in the 1986 IID Proposed Water Conservation Program and Initial Water Transfer EIR. 7. CEQA compliance for CVWD use of conserved water will be included in the Coachella Valley Water Management Plan PEIR. 8. The QSA PEIR provides project-level CEQA compliance for MWD's reduction in use of conserved water. 9. The QSA PEIR provides project-level CEQA compliance for the change in point of diversion of 20 KAFY from Lake Havasu to Imperial Dam.

Table 2.2-1. QSA Component, IA Federal Action and Associated Environmental Review[1]

Quantification Settlement Agreement Component	*Implementation Agreement Federal Action*	*Associated Environmental Documentation*
IID/SDCWA Transfer of conserved water (up to 200 KAFY) An amount of water equivalent to the amount of water conserved in the IID service area would be transferred to SDCWA. At SDCWA's election, the water would be delivered to Lake Havasu.	Secretary shall deliver Colorado River water to Lake Havasu in an amount equal to that amount of water conserved by IID for the benefit of SDCWA in accordance with the provisions, including the point of delivery of the 1998 IID/SDCWA Water Conservation and Transfer Agreement and the IA.	1. This EIS provides NEPA compliance for the change in point of delivery of up to 200 KAFY from Imperial Dam to Lake Havasu. 2. This EIS provides programmatic NEPA compliance for the IID/SDCWA Water Conservation and Transfer Agreement, as modified by the QSA. 3. Project-level NEPA and CEQA compliance for the water conservation and transfers by IID, and for the Habitat Conservation Plan for impacts to the IID service area and Salton Sea is provided in the IID Water Conservation and Transfer Project EIR/EIS. 4. The QSA PEIR provides project-level CEQA compliance for the change in point of diversion of up to 200 KAFY from Imperial Dam to Lake Havasu. 5. The QSA PEIR provides program level CEQA compliance for the IID/SDCWA Water Conservation and Transfer Agreement. 6. Project-level CEQA compliance for this component of the QSA is provided in the IID Water Conservation and Transfer Project EIR/EIS.
MWD/SDCWA Exchange of conserved water (up to 200 KAFY) SDCWA would exchange water conserved by IID under the IID/SDCWA Water Conservation and Transfer Agreement with MWD; MWD would divert that water into the CRA at Lake Havasu; MWD would deliver an equivalent amount of water to SDCWA at the SDCWA/MWD delivery point in San Diego County.	No Federal action required.	1. No NEPA compliance is required for the MWD/SDCWA Exchange of Conserved Water Agreement. 2. The QSA PEIR provides project-level CEQA compliance for the MWD/SDCWA Exchange of Conserved Water Agreement. 3. CEQA Notice of Exemption was prepared by SDCWA for the MWD/SDCWA Exchange of Conserved Water Agreement.

Table 2.2-1. QSA Component, IA Federal Action and Associated Environmental Review[1]

Quantification Settlement Agreement Component	*Implementation Agreement Federal Action*	*Associated Environmental Documentation*
IID/CVWD/MWD Transfer of conserved water (up to 100 KAFY, also known as the First and Second 50 KAFY) **First 50 KAFY** An amount of water equivalent to the amount of water conserved in the IID serve area, which CVWD elects to acquire, would be made available at Imperial Dam; any amount not acquired by CVWD may be acquired by MWD, and could be diverted at Lake Havasu. **Second 50 KAFY** An amount of water equivalent to the amount of water conserved in the IID service area, which CVWD elects to acquire, would be made available at Imperial Dam; any amount not acquired by CVWD may be acquired by MWD, and could be diverted at Lake Havasu. After year 45, MWD would bear the obligation to provide the Second 50 KAFY to CVWD.	Secretary shall deliver Colorado River water to Imperial Dam in an amount equal to that amount of water conserved by IID for the benefit of CVWD in accordance with the provisions of the IA. In the event CVWD may decline a portion of this water, the Secretary shall instead deliver such portion of water to IID or MWD in accordance with the provisions of the IA. Secretary shall deliver Colorado River water to Imperial Dam in the amount of up to 50 KAFY of water made available by MWD in Year 46 and thereafter, for the benefit of CVWD in accordance with the provisions of the IA.	1. This EIS provides NEPA compliance for the potential change in point of delivery of up to 100 KAFY from Imperial Dam to Lake Havasu, and for delivery of conserved water to CVWD and/or MWD. 2. The QSA PEIR provides project-level CEQA compliance for the change in point of diversion of up to 100 KAFY from Imperial Dam to Lake Havasu. 3. The QSA PEIR provides program level CEQA compliance for this water conservation and transfer component. 4. Project-level NEPA and CEQA compliance for the water conservation and transfers by IID, and for the HCP for impacts to the IID service area and Salton Sea is provided in the IID Water Conservation and Transfer Project EIR/EIS. 5. CEQA compliance for CVWD use of conserved water will be included in the CVWMP PEIR. 6. The QSA PEIR provides project-level CEQA compliance for MWD use of any amount of conserved water not acquired by CVWD. 7. After Year 45, MWD would bear the obligation to provide the Second 50 KAFY to CVWD. The source of water and mechanisms for MWD to fulfill this obligation are speculative at this time and may be subject to further NEPA compliance in the future.

Table 2.2-1. QSA Component, IA Federal Action and Associated Environmental Review[1]

Quantification Settlement Agreement Component	*Implementation Agreement Federal Action*	*Associated Environmental Documentation*
Transfer of conserved water (67.7 KAFY) An amount of water equivalent to the amount of water conserved by lining a section of the AAC would be diverted by MWD (56.2 KAFY) and delivered to San Luis Rey Indian Water Rights Settlement Parties (11.5 KAFY) via MWD and SDCWA facilities.	Secretary shall deliver Priority 3a Colorado River water to Lake Havasu in an amount equal to that amount of water conserved by lining this section of the AAC to MWD, and/or to IID, and make available Colorado River water for the benefit of the San Luis Rey Indian Water Rights Settlement Parties in accordance with the provisions of the IA and section 106 of Public Law 100-675.	1. NEPA compliance for the All-American Canal lining was provided in the All-American Canal Lining Project EIS/EIR. 2. Environmental impacts from the use of conserved water by MWD were described in the All-American Canal Lining Project EIS/EIR, and are also described in this EIS. 3. NEPA compliance for the change in point of delivery of up to 67.7 KAFY from Imperial Dam to Lake Havasu was provided in the All-American Canal Lining Project EIS/EIR, and is supplemented by this EIS. 4. This EIS provides NEPA compliance for the delivery of water for implementation of the San Luis Rey Indian Water Rights Settlement Act, and describes the environmental impacts from the use of this water by the City of Escondido, and Vista Irrigation District. 5. Use of water by the Indian Bands is not included in this EIS and would require additional NEPA compliance. 6. The QSA PEIR provides project-level CEQA compliance for the change in point of diversion of up to 67.7 KAFY from Imperial Dam to Lake Havasu. 7. CEQA compliance for canal lining was included in the All-American Canal Lining Project EIS/EIR. 8. CEQA compliance for use of the conserved water in the MWD service area was provided in the All-American Canal Lining Project EIS/EIR. 9. The QSA PEIR provides project-level CEQA compliance for the diversion of water for implementation of the San Luis Rey Indian Water Rights Settlement Act. 10. The QSA PEIR provides project-level CEQA compliance for use of the conserved water by the City of Escondido, and Vista Irrigation District through implementation of the San Luis Rey Indian Water Rights Settlement Act.
Priority 6a Colorado River priorities and volume allocations Diversion of Priority 6a water in the following priorities and volumes: 38 KAFY to MWD, 63 KAFY to IID, and 119 KAFY to CVWD, when available.	Secretary shall deliver Priority 6a Colorado River water, when available, to the diversion points for MWD, IID, and CVWD in the following order and volumes: (i) 38 KAFY to MWD; (ii) 63 KAFY to IID; and (iii) 119 KAFY to CVWD in accordance with the provisions of the IA.	1. This EIS provides NEPA compliance for the Secretary's delivery of this water for use by MWD, IID, and CVWD. 2. The QSA PEIR provides project-level CEQA compliance for Priority 6a Colorado River priority and volume allocations, including use by MWD within the MWD service area.

Table 2.2-1. QSA Component, IA Federal Action and Associated Environmental Review[1]

Quantification Settlement Agreement Component	*Implementation Agreement Federal Action*	*Associated Environmental Documentation*
Priority 3a Colorado River capped at 330 KAFY CVWD consensually limits its consumptive use of Priority 3a water to a specified amount of 330 KAFY, subject to adjustment as provided in the QSA and the IOP.	Secretary shall deliver Colorado River water to Imperial Dam in an amount up to, but not more than, CVWD's Priority 3a cap as defined in the IA or as may be acquired under the QSA subject to Secretarial approval where necessary.	1. This EIS provides NEPA compliance for the Secretary's delivery of Colorado River water in conformance with CVWD's Priority 3a cap (as defined in the IA and QSA). 2. QSA PEIR provides project-level CEQA compliance for CVWD's Priority 3a cap (as defined in the IA and QSA).
Transfer of conserved water (26 KAFY) An amount of water equivalent to the amount of water conserved by lining portions of the Coachella Canal would be diverted by MWD (21.5 KAFY) and delivered to San Luis Rey Indian Water Rights Settlement Parties (4.5 KAFY) via MWD and SDCWA facilities.	Secretary shall deliver Priority 3a Colorado River water to Lake Havasu or Imperial Dam in an amount equal to the amount of water conserved by lining the unlined portions of the Coachella Canal to MWD, and/or to IID, and make available Colorado River water for the benefit of the San Luis Rey Indian Water Rights Settlement Parties, in accordance with the provisions of the IA and section 106 of Public Law 100-675.	1. NEPA compliance was provided for the Coachella Canal lining project in the Coachella Canal Lining Project EIS/EIR. 2. Environmental impacts from the use of the conserved water by MWD were described in the Coachella Canal Lining Project EIS/EIR, and are also described in this EIS. 3. This EIS provides NEPA compliance for the delivery of water for implementation of the San Luis Rey Indian Water Rights Settlement Act, and describes the environmental impacts from the use of this water by the City of Escondido, and Vista Irrigation District. 4. NEPA compliance for the change in point of delivery of up to 26 KAFY from Imperial Dam to Lake Havasu was provided in the Coachella Canal Lining Project EIS/EIR, and is supplemented by this EIS. 5. Use of water by the Indian Bands is not included in this EIS and would require additional NEPA compliance. 6. The QSA PEIR provides project-level CEQA compliance for the change in point of diversion of up to 26 KAFY from Imperial Dam to Lake Havasu. 7. CEQA compliance for canal lining was included in the Coachella Canal Lining Project EIS/EIR. 8. CEQA compliance for use of the conserved water in the MWD service area was provided in the Coachella Canal Lining Project EIS/EIR. 9. The QSA PEIR provides project-level CEQA compliance for the diversion of water for implementation of the San Luis Rey Indian Water Rights Settlement Act. 10. The QSA PEIR provides project-level CEQA compliance for use of the conserved water by the City of Escondido, and Vista Irrigation District through implementation of the San Luis Rey Indian Water Rights Settlement Act.

Table 2.2-1. QSA Component, IA Federal Action and Associated Environmental Review[1]

Quantification Settlement Agreement Component	*Implementation Agreement Federal Action*	*Associated Environmental Documentation*
Transfer of water (35 KAFY) MWD would transfer 35 KAFY of its SWP entitlement to CVWD. CVWD would deliver 35 KAFY of its SWP entitlement to MWD at the Devil Canyon Afterbay, in exchange, MWD would forgo the use of 35 KAFY of Colorado River water for use by CVWD.	Secretary shall deliver Colorado River water to Imperial Dam in the amount of 35 KAFY for the benefit of CVWD, in accordance with the provisions of the IA. Per the MWD/CVWD SWP Transfer and Exchange Agreement, water may be delivered elsewhere.	1. This EIS provides NEPA compliance for the change in point of delivery of up to 35 KAFY from Lake Havasu to Imperial Dam, and describes the environmental impacts from the use of the 35 KAFY by CVWD. 2. The QSA PEIR provides project-level CEQA compliance for the change in point of diversion of up to 35 KAFY from Lake Havasu to Imperial Dam. 3. Project-level CEQA compliance for the use of this water by CVWD will be included in the CVWMP PEIR.
Over and Under Run of Priorities 1, 2 and 3b MWD shall be responsible, when necessary, in conjunction with the IOP for repayment of any overrun as a result of the aggregate use by Priorities 1, 2 and 3b in excess of 420 KAFY; to the extent that Priorities 1, 2 and 3b use less than 420 KAFY, MWD shall have the exclusive right to consumptively use such unused water.	Secretary shall deliver Colorado River water in accordance with the provisions of the IA and IOP.	1. This EIS describes the environmental impacts of MWD's repayment of any overrun as a result of the aggregate use by Priorities 1, 2 and 3b in excess of 420 KAFY, and for MWD's use of unused Priorities 1, 2 and 3b in the event that these priorities use less than 420 KAFY. 2. The QSA PEIR provides project-level CEQA compliance for this QSA component.

Table 2.2-1. QSA Component, IA Federal Action and Associated Environmental Review[1]

Quantification Settlement Agreement Component	*Implementation Agreement Federal Action*	*Associated Environmental Documentation*
Use by Miscellaneous and Federal Present Perfected Rights, including certain Indian Reservations Water forborne, when necessary, by CVWD and IID in the amount of 3 and 11.5 KAFY respectively, and water forborne by MWD in the aggregate amount in excess of 14.5 KAFY necessary to satisfy Miscellaneous and Federal PPR's, including Indian Reservations (amount forborne by MWD has been estimated by Reclamation at 47 KAFY).	Secretary may reduce the amount of water otherwise available for consumptive use to IID and CVWD by up to 11.5 KAFY and up to 3 KAFY, respectively, as a result of the satisfaction within the State of California of the Miscellaneous and Federal PPRs recognized in the Decree. The Secretary may reduce the amount of water otherwise available for MWD's consumptive use by the amount necessary to satisfy within the State of California the Miscellaneous and Federal PPRs, recognized in the Decree and not within Priority 2 of the Seven Party Agreement to the extent those uses exceed 14.5 KAFY.	1. This EIS provides NEPA compliance for the Secretary's reduced delivery of water to IID, CVWD, and MWD due to future use by Miscellaneous and certain Indian PPR holders, and for the change in points of delivery from Lake Havasu and Imperial Dam to various points along the Colorado River in the Lower Basin. 2. The QSA PEIR provides program level CEQA compliance for this QSA component. 3. The QSA PEIR provides project-level CEQA compliance for the change in point of diversion from Lake Havasu and Imperial Dam to various points along the Colorado River in the Lower Basin, due to the future use by Miscellaneous and certain Indian PPR holders. 4. Project-level CEQA compliance for IID's forbearance is included in the IID Water Conservation and Transfer Project EIR/EIS. 5. Project-level CEQA compliance for CVWD's forbearance will be included in the Coachella Valley Water Management Plan PEIR.
Shortage Sharing Agreement If there is less than 3.85 MAF of Colorado River water available under Priorities 1, 2, and 3 in any one year during the 75-year quantification period, there would be no termination of the QSA. Shortages would be shared pursuant to the particular provisions of the Acquisition Agreements[2] and the Allocation Agreement[3].	If, for any reason, there is less than 3.85 MAFY available under Priorities 1, 2, and 3 during the quantification period, any water that is made available by the Secretary to IID shall be delivered to IID, CVWD, MWD, and SDCWA in accordance with the shortage sharing provisions in the IA and the Acquisition Agreements[2].	1. This EIS provides NEPA compliance for the Secretary's water deliveries per the shortage sharing provisions among IID, MWD, CVWD and SDCWA. 2. The QSA PEIR provides project-level CEQA compliance for the impacts of the shortage sharing provisions among IID, MWD, CVWD and SDCWA.

(1) All QSA Components and IA Related Federal Actions would terminate prior to, or at the end of the quantification period pursuant to the terms and conditions of the IA and QSA, with the exception of the water transferred to the San Luis Rey Indian Water Rights Settlement Parties. The Secretary shall continue to deliver up to 16 KAFY for the benefit of the San Luis Rey Indian Water Rights Settlement Parties as identified in the IA and QSA.

(2) The Acquisition Agreements are collectively the IID/SDWCA Water Conservation and Transfer Agreement, the IID/SDCWA Early Water Transfer Agreement, the CVWD/MWD Acquisition Agreement, the IID/MWD Acquisition Agreement, the IID/CVWD Acquisition Agreement, and the MWD/CVWD SWP Transfer and Exchange Agreement.

(3) The Allocation Agreement is an agreement among the City of Escondido, PVID, SDCWA, San Luis Rey River Indian Water Authority, Vista Irrigation District, the La Jolla, Pala, Pauma, Rincon and San Pasqual bands of Mission Indians, and the Secretary concerning the allocation of conserved water created by the All-American and Coachella Canal lining projects.

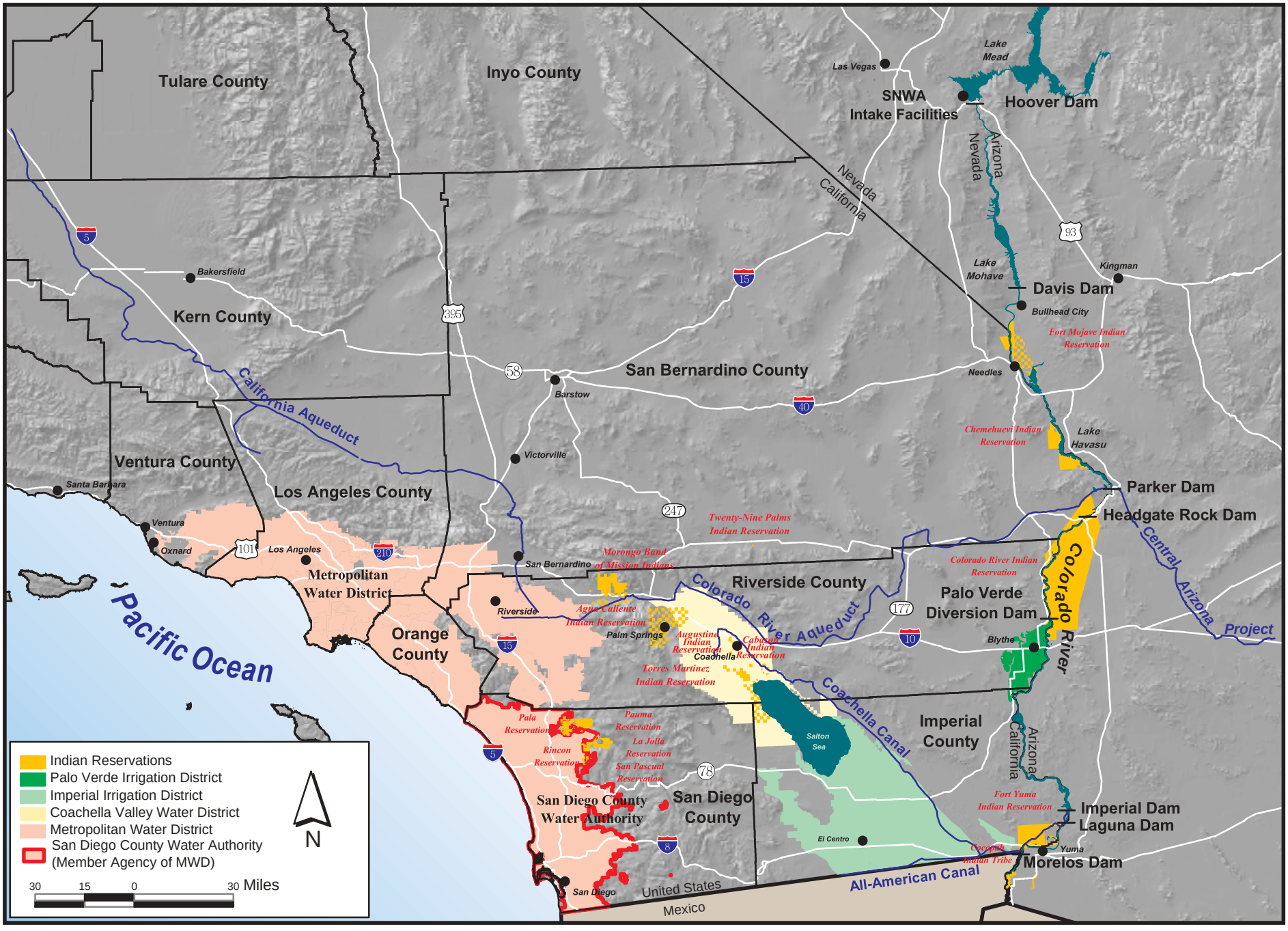

Figure 2.2-1. Project Location

River water by any PPR holders (including PPR holders in the States of Arizona and Nevada) as identified in the Decree, and supplemental Decrees.

Water Conservation, Transfers, and Exchanges

The cooperative and voluntary water conservation actions and transfers comprising the QSA play a critical role in California's ability to limit its use of Colorado River water to 4.4 MAF in a normal year. Execution of the IA commits the Secretary to make Colorado River water deliveries to the participating agencies according to the terms and conditions of the IA to enable implementation of the QSA.

The IA anticipates a transition period of approximately 25 years prior to full implementation of the water conservation/transfers and exchange projects. Many of the water conservation and transfer components of the IA and QSA would be implemented in a stepped, or phased fashion over a period of several years. For example, the water transfer under the IID/SDCWA Water Conservation and Transfer Agreement, as amended by the IA and QSA, would be expected to begin in 2002 and increase by 20 KAF yearly until full implementation under the IA and QSA between 2008 and 2011 (full implementation of this agreement, as amended by the IA and QSA is considered to be between 130 and 200 KAFY of water conserved in the IID service area and transferred to SDCWA). Full implementation of all IA and QSA water conservation and transfer components is expected in 2026, as shown on Figure 2.2-2.

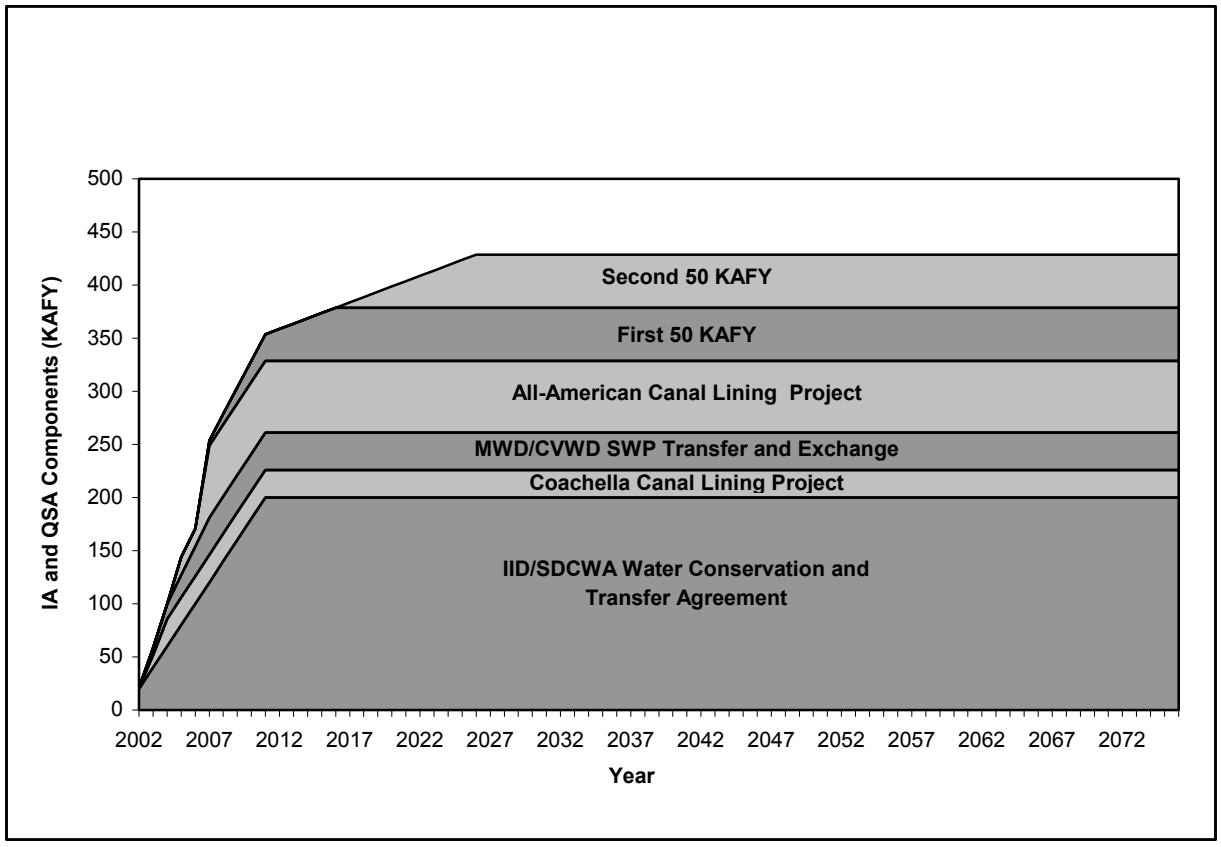

Figure 2.2-2. Timeline for Implementation of the Water Transfer Components of the IA and QSA

Water Conservation Actions

Cooperative and voluntary water conservation actions that are the basis of the QSA consist of both agricultural conservation activities within the IID service area and conservation through reduction of canal seepage losses by lining sections of the AAC and Coachella Canal.

System and On-Farm Activities. Conservation actions within the IID service area are expected to conserve up to 300 KAFY for transfer purposes. These actions could include both on-farm conservation and water delivery system improvements and may include fallowing, subject to certain contractual limitations set forth in the IID/SDCWA Water Conservation and Transfer Agreement. On-farm actions would improve the effectiveness and efficiency of irrigation by farmers. Water delivery system improvements would improve the effectiveness and efficiency of IID's water delivery system. IID is envisioning a flexible program that would permit the implementation of various methods of both on-farm conservation and water delivery system improvements to conserve water over the 75-year time period. The actions required to conserve water in the IID service area are evaluated on a programmatic level in this EIS. IID is preparing an HCP in support of IID's application for an incidental take permit in conformance with the ESA and CESA. NEPA and CEQA evaluations for the IID/SDCWA Water Conservation and Transfer Agreement and related HCP are provided by the IID Water Conservation and Transfer Project EIR/EIS. The Draft EIR/EIS (IID and USBR 2002) was released January 2002. The IID Board of Directors certified the Final EIR in June 2002. In order to comply with CEQ regulations implementing NEPA, Reclamation is preparing a fully integrated, stand alone Final EIS, which is scheduled to be filed with the EPA concurrently with the filing of this Final IA EIS.

The EIR/EIS described the environmental effects occurring within the IID service area and Salton Sea, from implementing IID's Water Conservation and Transfer Project. It also included a discussion of an HCP, which would mitigate the water conservation actions' impact on 96 covered species. Due to uncertainty regarding FWS' approval of IID's HCP and issuance of an incidental take permit, Reclamation entered into a voluntary Section 7 consultation with the FWS in July 2002. Reclamation proposes to undertake, in conjunction with the participating agencies, certain voluntary biological conservation measures to benefit federally listed species in IID's service area and in and around the Salton Sea. In this way, should an HCP not be approved for IID's Water Conservation and Transfer Project, the participating agencies would be able to use the incidental take statement issued to Reclamation for coverage from ESA's section 9 prohibition against take of listed species.

To ensure there is adequate NEPA coverage regardless of whether or not an HCP is approved by FWS, this final EIS includes the scenario under which biological conservation measures included in Reclamation's July 2002 BA (USBR 2002b) would be implemented to address impacts on listed species from IID's water conservation actions should the HCP not be implemented. The description of the effects of IID's water conservation actions, over which Reclamation has no control, are described in the EIR/EIS for the IID Water Conservation and Transfer Project. Where appropriate, they are excerpted and summarized in this final IA EIS. In addition, the description of the environmental effects from IID's implementation of its HCP, should it be approved by FWS, has also been expanded in this final IA EIS in response to public comments. The intent of this final IA EIS is to provide a succinct description of the range of impacts that could occur from IID's water conservation actions, with implementation of the IA and QSA, whether they are covered by an HCP

approved for IID or by voluntary biological conservation measures resulting from Reclamation's section 7 consultation.

Canal Lining Activities. Water conservation also would be achieved through lining sections of the AAC and Coachella Canal, which would reduce seepage from these canals. IID obtains water from the 82-mile long AAC, through which water is diverted from the Colorado River at Imperial Dam. It is estimated that 67.7 KAFY would be conserved by lining a 25-mile section of this canal (USBR and IID 1994). Transfers of water conserved by lining a section of the AAC would be expected to begin in 2005, with full implementation (67.7 KAFY conserved and transferred) in 2007. Environmental impacts of the AAC lining project were described in the All-American Canal Lining Project EIS/EIR (USBR and IID 1994). CVWD obtains water from the 122-mile long Coachella Canal, through which water is diverted from the AAC. Lining the remaining unlined portions of Coachella Canal would result in approximately 26 KAFY of conserved water available for transfer under the IA. Transfers of water conserved by lining the unlined portion of the Coachella Canal would be expected to begin in 2003, with full implementation (26 KAFY conserved and transferred) in 2006. The NEPA and CEQA compliance evaluations for the Coachella Canal lining project is provided in the Coachella Canal Lining Project EIS/EIR (USBR and CVWD 2001).

As noted above, construction of both the AAC and Coachella Canal lining projects have been covered under completed, separate NEPA analyses; therefore, the impacts of lining the canals are not addressed in this EIS. However, this EIS does consider impacts from the change in point of delivery of Colorado River water (from Imperial Dam to Lake Havasu) as a result of the canal lining projects specified in the IA and QSA.

Water Transfers

The water transfers are, for the most part, conserved Colorado River water from one area being made available to meet the needs of existing Colorado River water uses in another area, resulting in a net reduction in consumptive use of Colorado River water by users within the State of California. The following is a description of the various water conservation and transfer agreements that comprise the QSA and the associated actions under the IA.

IID/MWD 1988 AGREEMENT; IID/MWD/PVID/CVWD 1989 APPROVAL AGREEMENT; AND MWD/CVWD 1989 AGREEMENT TO SUPPLEMENT APPROVAL AGREEMENT

The IID/MWD 1988 Agreement (entitled "Agreement for Implementation of a Water Conservation Program and Use of Conserved Water," dated December 22, 1988) calls for MWD to bear the costs of various conservation projects implemented by IID within the IID service area. For bearing the costs, MWD is entitled to request and divert from the Colorado River an amount equal to the amount of water conserved by the conservation projects, estimated to range from 100 to 110 KAFY. Under the terms of the 1988 IID/MWD Agreement the conservation and transfer of water was to extend for a minimum of 35 years following completion of the last project implemented under the agreement, subject to certain conditions. The agreement provides no end-date, but rather the conservation and transfer of water continues until terminated voluntarily or by default by either party.

Water transfers under this agreement began in 1990, and reached full implementation in 1998. Environmental impacts of the IID/MWD 1988 Agreement are not addressed in this EIS, as impacts

of this agreement are assessed under a completed, separate NEPA analysis, and the agreement has been fully implemented.

The IID/MWD/PVID/CVWD 1989 Approval Agreement, and the MWD/CVWD 1989 Agreement to Supplement Approval Agreement, amended the IID/MWD 1988 Agreement. The IID/MWD/PVID/CVWD 1989 Approval Agreement provided the approval from other Colorado River water contractors for the IID/MWD 1988 Agreement and specified certain circumstances under which MWD would have to forebear the use of a portion of the conserved water. The MWD/CVWD 1989 Agreement to Supplement Approval Agreement further specified the conditions under which MWD would forebear use of the conserved water and CVWD would be allowed the use of this water. Environmental impacts of the IID/MWD/PVID/CVWD 1989 Approval Agreement and the MWD/CVWD 1989 Agreement to Supplement Approval Agreement are not addressed in this EIS, as impacts of these agreements are assessed under a completed, separate NEPA analysis, and the agreements have been fully implemented.

Under the above agreements, MWD is entitled to request and divert from the Colorado River an amount of water equal to the amount of water conserved by the conservation projects within the IID service area. This amount is estimated to range from 100 to 110 KAFY. Under certain conditions, CVWD is entitled to up to 50 KAFY of this water. Since the above agreements were implemented, the conditions necessary for CVWD's diversion of 50 KAFY have not existed, and all water conserved under these agreements has been diverted by MWD. Therefore, in this EIS, the description of existing conditions assumes that the amount of water conserved and transferred under the above agreements is 110 KAFY and that all conserved water is used by MWD.

Under the terms of the IA and QSA, the IID/MWD 1988 Agreement, IID/MWD/PVID/CVWD 1989 Approval Agreement and MWD/CVWD 1989 Agreement to Supplement Approval Agreement would be amended so that MWD would be entitled to an annual maximum of 90 KAF, and CVWD would be entitled to an annual maximum of 20 KAF of water conserved by IID (therefore, CVWD would be entitled to annually divert 20 KAF in lieu of diverting 50 KAF only in years where the necessary conditions exist, as specified in the above agreements). Under the terms of the IA and QSA, the IID/MWD 1988 Agreement would also be amended to delete the parties' early termination rights after year 45, in order to maintain the IID/MWD 1988 Agreement and subsequent agreements, as modified, throughout the quantification period. Implementation of the IA would commit the Secretary to deliver this 20 KAFY to CVWD at Imperial Dam. Under the IA and QSA, CVWD would begin receiving 20 KAFY starting in 2003. This EIS provides the NEPA analysis of MWD's reduction in use of conserved water and for the change in point of delivery of 20 KAFY of Colorado River water from Lake Havasu to Imperial Dam. This EIS also provides the NEPA analysis of CVWD's use of the conserved water.

IID/SDCWA Water Conservation and Transfer Agreement

The IID/SDCWA Water Conservation and Transfer Agreement provides for the transfer of between 130 and 200 KAFY of water conserved by IID to SDCWA, plus an optional amount of an additional 100 KAFY. SDCWA would take delivery of the water at Lake Havasu. Implementation of the IA would commit the Secretary to deliver between 130 and 200 KAFY of water conserved by IID to SDCWA at Lake Havasu. Transfers of water under the IID/SDCWA Water Conservation and Transfer Agreement, as amended by the IA and QSA, would be expected to begin in 2002 and increase by 20 KAF yearly until full implementation under the IA and QSA between 2008 and 2011

(full implementation of this agreement, as amended by the IA and QSA, is considered to be between 130 and 200 KAFY). This EIS provides the NEPA analysis for the change in point of delivery of Colorado River water from Imperial Dam to Lake Havasu associated with the IID/SDCWA Water Conservation and Transfer Agreement. This EIS provides the programmatic NEPA analysis for other related actions including IID's water conservation program, the transfer of conserved water to SDCWA, and use of conserved water by SDCWA related to the IID/SDCWA Water Conservation and Transfer Agreement. NEPA and CEQA analysis for these actions are provided by the IID Water Conservation and Transfer Project EIR/EIS (IID and USBR 2002).

IID/SDCWA Early Water Transfers — Under the IID/SDCWA Water Conservation and Transfer Agreement, and associated agreements, IID would conserve and transfer Colorado River water to SDCWA in the following years and amounts: 2.5 KAF in 2005; 5 KAF in 2006; and 2.5 KAF in 2007. SDCWA would also receive a one-time transfer of 10 KAF from IID prior to full implementation of the IID/SDCWA Water Conservation and Transfer Agreement. This water is in addition to the water to be transferred to SDCWA under the IID/SDCWA Water Conservation and Transfer Agreement, although the total amount of water transferred to SDCWA would not cumulatively exceed 200 KAFY, including years with early water transfers.

MWD/SDCWA EXCHANGE OF CONSERVED WATER AGREEMENT

The MWD/SDCWA Exchange of Conserved Water Agreement provides the mechanism for exchanging the IID conserved and transferred water to SDCWA. SDCWA would take delivery of the IID conserved water at Lake Havasu. MWD would divert this water at the Whitsett Pumping Plant in Lake Havasu. MWD would then exchange with SDCWA, the water received under the IID/SDCWA Water Conservation and Transfer Agreement for an equivalent amount of water at the SDCWA/MWD delivery point in Northern San Diego County. A CEQA notice of exemption for this action was issued by SDCWA. No further environmental documentation is required. No Federal action is required to implement the MWD/SDCWA Exchange of Conserved Water Agreement.

CVWD/IID/MWD WATER CONSERVATION AND TRANSFER AGREEMENT (FIRST AND SECOND 50 KAFY)

Under the terms of the IA and QSA, the parties to the QSA would consent to the transfer of 130 to 200 KAFY to SDCWA pursuant to the IID/SDCWA Water Conservation and Transfer Agreement. The additional 100 KAFY, optional water to SDCWA identified in the IID/SDCWA Water Conservation and Transfer Agreement, would be replaced by what is referred to as the First and Second 50 KAFY transfers of conserved water to CVWD and/or MWD. CVWD would have the first option to acquire this conserved and transferred water and would divert this water at Imperial Dam. If CVWD chooses not to exercise part of or its full option to this water, MWD could exercise an option to divert this water at Lake Havasu. The First and Second 50 KAFY would be supplied by conservation actions implemented by IID from Year 1 to Year 45. After Year 45, the obligation to provide the Second 50 KAFY to CVWD would no longer be the obligation of IID, but would become the obligation of MWD. Transfers of water under the First 50 KAFY would be expected to begin in 2007, and increase by 5 KAF yearly until full implementation in 2016. Transfers of water under the Second 50 KAFY would begin in the year following the transfer of the full First 50 KAFY, which is expected to be 2017, and would increase by 5 KAF yearly until full implementation in 2026. The IA provides that the Secretary deliver this water to the agreed upon Colorado River water point of diversion for CVWD and/or MWD as described in the QSA.

MWD would also receive a "secondary option" to acquire from IID conserved and transferred water in the following years and amounts: 5 KAF in 2007, and 10 KAF each year from 2008 to 2014, as part of the CVWD/IID/MWD Water Conservation and Transfer Agreement. MWD would annually receive this "secondary option" water in the years specified above provided that the First 50 KAFY is transferred to MWD (i.e., in the event that CVWD elects not to take the First 50 KAFY in any year from 2007 to 2014, and the First 50 KAFY is transferred to MWD, MWD would receive both the First 50 KAFY and the secondary water). In the event that CVWD elects to take the First 50 KAFY in any year from 2007 to 2014, CVWD does not have an option to this secondary option water. This secondary option water is in addition to the amount of water that would be transferred to MWD under the First 50 KAFY, although the total amount of secondary water and the First 50 KAFY water transferred to MWD would not cumulatively exceed 50 KAFY.

Associated Early Water Agreements — Under associated agreements, IID would conserve and transfer Colorado River water (termed "early water") to MWD in the following years and amounts: 2.5 KAF in 2005; 5 KAF in 2006; and, 2.5 KAF in 2007. This "early water" is in addition to the amount of water that would be transferred to MWD under the First 50 KAFY including the "secondary option water," although the total amount of early water, secondary option water, and the First 50 KAFY water transferred to MWD would not cumulatively exceed 50 KAFY.

This EIS describes the environmental impacts based on available information, for the diversion and use of this water by CVWD and/or MWD. It also describes the impacts of the change in point of delivery from Imperial Dam to Lake Havasu in the event that MWD diverts all or a portion of the First and Second 50 KAFY. There is no change in point of delivery on the Colorado River associated with CVWD's diversion of water conserved by IID.

After Year 45, the obligation to provide the Second 50 KAFY to CVWD would no longer be the obligation of IID, but would become the obligation of MWD. The source of this water and mechanisms for MWD to fulfill this obligation are speculative at this time and could be subject to further NEPA analysis in the future if Federal action or approval is required.

SAN LUIS REY INDIAN WATER RIGHTS SETTLEMENT

The San Luis Rey Indian Water Rights Settlement Act, enacted by Congress in 1988 (Title I of Public Law 100-675, as amended), authorized a settlement of water rights claims to San Luis Rey River water among the La Jolla, Rincon, San Pasqual, Pauma, and Pala Bands of Mission Indians, and the City of Escondido, the Escondido Mutual Water Company (which is no longer in existence) and Vista Irrigation District. This settlement is expected to be facilitated through the use of 11.5 KAFY of water conserved by the AAC lining project and 4.5 KAFY of water conserved by the Coachella Canal lining project. Under the IA, the Secretary would deliver this 16 KAFY of Priority 3a conserved Colorado River water to Lake Havasu. MWD would divert this water at the Whitsett Pumping Plant in Lake Havasu and would make water available for the benefit of the San Luis Rey Indian Water Rights Settlement Parties, in accordance with terms of a separate allocation agreement and a separate transportation agreement. MWD would then deliver an equivalent amount of water to SDCWA at the SDCWA/MWD delivery point in San Diego County. SDCWA would then deliver an equivalent amount of water to the San Luis Rey Indian Water Rights Settlement Parties. Transfers of water conserved by lining a section of the AAC are expected to begin in 2005, with full implementation in 2007. Transfers of water conserved by lining the unlined portion of the Coachella Canal are expected to begin in 2003, with full implementation in 2006.

This EIS evaluates the delivery, diversion and transport of water associated with this settlement, and use by the City of Escondido, and Vista Irrigation District. This EIS also provides the NEPA analysis for the change in point of delivery from Imperial Dam to Lake Havasu. Use of the water by the Indian bands is not included in this analysis and will require additional NEPA analyses if Federal action or approval is required. NEPA evaluations for the conservation of this water were included in the Coachella Canal Lining Project EIS/EIR and the All-American Canal Lining Project EIS/EIR.

MISCELLANEOUS AND FEDERAL PRESENT PERFECTED RIGHTS

Under the IA and QSA, CVWD, IID, and MWD have agreed, when necessary, to divide responsibility for foregoing use of Colorado River water to permit the Secretary to satisfy the water demands by holders of Miscellaneous and Federal PPRs specified in Decree and supplemental Decrees, and not within the priorities contained in the Seven Party Agreement. When necessary, CVWD and IID would forbear 3 KAFY and 11.5 KAFY, respectively, for use by Miscellaneous and Federal PPRs. If needed, additional water would be forborne by MWD. Reclamation has estimated that MWD may eventually need to forbear up to approximately 47 KAFY, although the actual amount could vary. PPRs have more senior water rights and therefore are satisfied before water is allocated under the Seven Party Agreement. This EIS evaluates the change in water deliveries to CVWD, IID, and MWD, based on the use Colorado River water by Miscellaneous and Federal PPR holders. This EIS also evaluates the change in volumes of Colorado River water provided to CVWD, IID, and MWD. PPR holders currently use water at numerous locations along the Colorado River, and the specific locations of their diversions would not change under the IA and QSA.

MWD/CVWD SWP TRANSFER AND EXCHANGE AGREEMENT

The IA and QSA include an exchange between CVWD and MWD involving water from the Colorado River and the SWP. The SWP is a large water supply, storage, and distribution system authorized by an act of the California State Legislature in 1959 and operated by the California Department of Water Resources (DWR). Currently, the SWP includes 32 storage facilities, reservoirs, and lakes; 17 pumping plants; three pumping-generating plants; five hydroelectric powerplants; and approximately 660 miles of aqueducts and pipelines. Total planned annual delivery from the SWP and total entitlements to SWP are approximately 4.1 MAFY. SWP deliveries from 1990 to 1999 varied from 0.55 MAFY to 3.4 MAFY. The primary purpose of the SWP is to distribute water to 29 urban and agricultural water contractors in Northern California, the San Francisco Bay Area, the San Joaquin Valley, Central Coast, and Southern California.

The MWD/CVWD SWP Transfer and Exchange Agreement would facilitate a multifaceted exchange of SWP entitlement and Colorado River water deliveries. The individual actions are as follows:

- MWD would transfer 35 KAFY of its SWP entitlement to CVWD. This would reduce MWD's total SWP annual entitlement to 1,976.5 KAF and would increase CVWD's total annual entitlement to 58.1 KAF.

- CVWD would request and pay for SWP water deliveries via the existing system administered by DWR. The delivery would be made to MWD at the existing Devil Canyon Afterbay located south of Victorville, California.

- In exchange for the deliveries of SWP water requested by CVWD, MWD would arrange with Reclamation for the delivery of 35 KAFY of Colorado River water to CVWD. It is expected that the delivery would be made via the diversion structure at Imperial Dam to the AAC for diversion into the Coachella Canal. However, at MWD's option, it is also possible that the delivery could be made from the Colorado River Aqueduct (CRA) to CVWD.

If diverted at Imperial Dam, this exchange would result in the delivery and diversion of 35 KAFY of Colorado River water at Imperial Dam that would have otherwise been diverted at the MWD facility at Lake Havasu. If diverted at the MWD facility at Lake Havasu and delivered to CVWD, this exchange would not result in a change in point of delivery on the Colorado River as this water is currently being delivered to MWD. The MWD/CVWD SWP Transfer and Exchange Agreement is expected to begin in 2003 and be fully implemented in 2007. Environmental evaluations for the use of the water in the MWD and CVWD service areas, as well as for the change in point of delivery of Colorado River water from Lake Havasu to Imperial Dam is provided by this EIS.

MWD and CVWD requests for and DWR deliveries of SWP water vary from year to year depending on a variety of conditions, including anticipated demands within each SWP contractor's service area, and the anticipated supplies available from various sources. The 35 KAFY entitlement exchange would not affect current or anticipated water deliveries by the SWP. Diversions of water for the SWP system are consistent with State Water Resources Control Board orders, the ESA and CESA, and other regulations and agreements, as applicable.

SURPLUS DISTRIBUTION

If a surplus year is declared by the Secretary or unused Colorado River water apportionments are available to California users holding Priority 5a, 5b, 6a, 6b, and 7 water rights, the water would be used in accordance with the existing priority system, with the exception of Priority 6a water. Priority 6a water would be divided as follows: the first 38 KAFY would go to MWD, the next 63 KAFY would go to IID, and the remaining 119 KAFY would go to CVWD.

SHORTAGE DISTRIBUTION

Shortage conditions as defined by the IA and QSA would occur in years when there is less than 3.85 MAFY available to Priorities 1, 2, 3a, and 3b.[1] If IA shortage conditions occur, and less than 3.85 MAF of Colorado River water is available under Priorities 1, 2, 3a, and 3b in any one year during the 75-year quantification period, shortages would be shared pursuant to the particular provisions of the IA and the Acquisition Agreements. The Acquisition Agreements are collectively the IID/SDWCA Water Conservation and Transfer Agreement, the IID/SDCWA Early Water Transfer Agreement, the CVWD/MWD Acquisition Agreement, the IID/MWD Acquisition Agreement, the IID/CVWD Acquisition Agreement, and the MWD/CVWD SWP Transfer and Exchange Agreement.

1. In this EIS, shortage conditions under the IA and QSA are referred to as "IA shortage conditions." Note that the IA shortage conditions are different than shortage years as defined by the Law of the River and specifically, the Decree. The IA, QSA, and QSA-related agreements, do not limit the Secretary's authority under Article II(B)(3) of the Decree.

Key Actions that Would Occur as a Result of Implementation of the IA

Under the IA, the Secretary would commit to certain actions required to facilitate implementation of the QSA. This section summarizes the key actions, by geographic area/service area, that would occur as a result of implementation of the IA and QSA and that could result in a change to the physical environment. Figure 2.2-3 illustrates the changed water deliveries with the implementation of the IA.

Colorado River

The IA would result in a change in the amount of water the Secretary would deliver to MWD's diversion point at Lake Havasu (above Parker Dam), and CVWD's and IID's diversion point at Imperial Dam. In a normal year, in aggregate, deliveries to Imperial Dam would be reduced by as little as 183 to as much as 388 KAF, and this water would instead be delivered to the MWD facility at Lake Havasu. Therefore, there would be a reduction in flow in the Colorado River between 183 and 388 KAFY from Parker to Imperial Dam.[2] The IA components that would reduce deliveries at Imperial Dam include the following:

- water conserved and transferred by IID (130 KAFY to 300 KAFY — minimum of 130 KAFY in the event that only 130 KAFY is transferred to SDCWA, and the First and Second 50 KAFY is transferred to CVWD — maximum of 300 KAFY in the event that the 200 KAFY is transferred to SDCWA and the First and Second 50 KAFY is transferred to MWD);

- reduced deliveries as a result of the AAC and Coachella Canal lining projects (together totaling 93.7 KAFY); and

- reduced deliveries by CVWD and IID to account for Miscellaneous and Federal PPRs (together totaling 14.5 KAFY).

Conversely, some IA components could increase deliveries at Imperial Dam, including the 20 KAFY transfer from MWD to CVWD per the amendments to the IID/MWD 1988 Agreement and subsequent amended agreements, and potentially the 35 KAFY transferred from MWD to CVWD per the MWD/CVWD SWP Transfer and Exchange Agreement, depending on where MWD elects to have the water delivered (Imperial Dam for diversion into the AAC and Coachella Canal or at Lake Havasu for diversion at the Whitsett Pumping Plant and delivery to CVWD). Table 2.2-2 outlines the various IA components that result in changes in River flows between Parker and Imperial Dams in a normal year.

2. Note that the biological conservation measures evaluated in this EIS are related to the change in point of delivery of up to 400 KAFY.

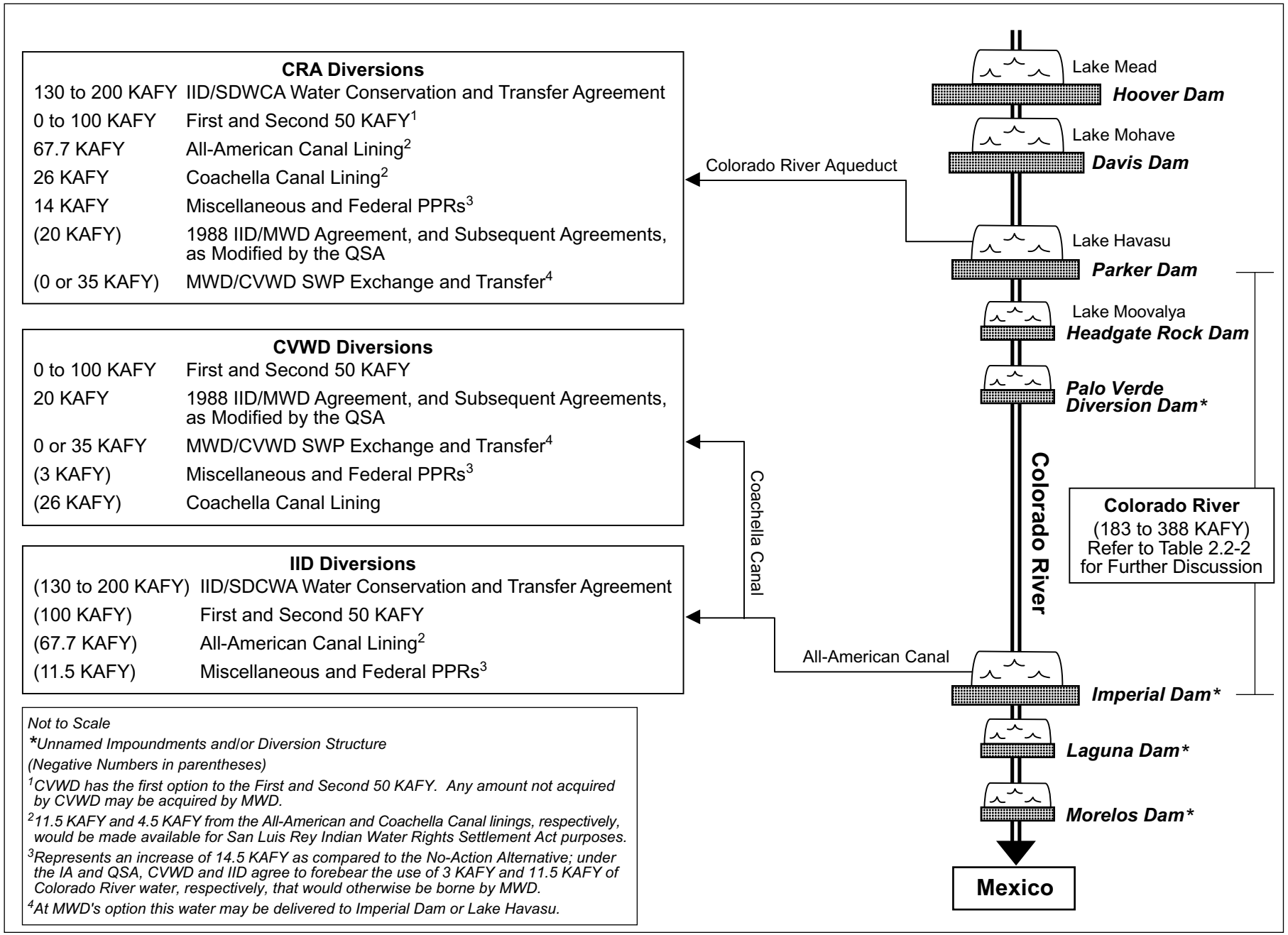

Figure 2.2-3. Changed Water Deliveries Under the IA

Table 2.2-2. IA Anticipated Changes in River Flow from Parker to Imperial Dams in a Normal Year
(*negative numbers in parentheses*)

	Minimum (KAFY)	*Maximum (KAFY)*
Amendment to the IID/MWD 1988 Agreement/Subsequent Agreements	20	20
IID/SDCWA Conservation and Transfer	(130)	(200)
First and Second 50 KAFY	0	(100)
AAC Lining Project[1]	(67.7)	(67.7)
Coachella Canal Lining Project[1]	(26)	(26)
CVWD/MWD SWP Transfer and Exchange	35	0
Miscellaneous and Federal PPRs	(14.5)	(14.5)
Total	**(183.2)**	**(388.2)**

1. 11.5 KAFY and 4.5 KAFY from the AAC and Coachella Canal linings, respectively, would be made available for San Luis Rey Indian Water Rights Settlement Act purposes.

Imperial Irrigation District

Under the IA and QSA, IID would agree to limit its consumptive use of Colorado River water under Priority 3a to 3.1 MAFY for the quantification period, less the amount of water equal to that conserved by IID for the benefit of others as outlined in the IA and QSA, and subject to adjustment as proved in the IOP. This consensual limitation of Priority 3a consumptive use constitutes a forbearance of IID's right to divert, for beneficial use, up to the entire balance (after Priorities 1 and 2) of the 3.85 MAFY amount allocated in the aggregate to Priorities 1, 2 and 3. This forbearance increases the certainty of water available to agencies with lower priorities (or higher priority numbers). With the implementation of the IA and QSA, IID would conserve between 230 and 300 KAFY for transfer purposes (in addition to the 100 to 110 KAFY of conservation under the existing IID/MWD 1988 Agreement). Additional conservation by IID may be needed to comply with IID's consensual Priority 3a Colorado River water diversion cap and the IOP. IID anticipates implementing a variety of methods in different combinations in order to achieve the desired amount of conservation. These may include the following:

- *On-Farm Conservation Actions* – On-farm conservation actions would be implemented by individual landowners or farmers within the IID service area, and could include, although are not limited to use of tailwater return systems; cascading tailwater systems; level basins; shortening furrows/border strip improvements; narrow border strips; cutback irrigation techniques; laser-leveling of fields; multi-sloping of fields; and drip irrigation. On-farm conservation actions may also include on-farm irrigation management techniques such as irrigation scheduling, water measurement, soil moisture measurements, and use of additional farm labor.

- *Water Delivery System Improvements* – These would entail construction and/or modification of the infrastructure of IID's water distribution system, including, but not limited to lateral interceptors, reservoirs, seepage interceptors, and conveyance lining.

- *Fallowing* – Subject to certain contractual limitations set forth in the IID/SDCWA Water Conservation and Transfer Agreement, fallowing could be implemented within the IID service area by individual landowners or farmers, or by IID. Methods could include removal of land from agricultural production or reduction of multiple crops to fewer crops or a single crop for one or more growing seasons or for multiple years.

Associated with these water conservation actions, IID has developed an HCP, which would mitigate impacts from the water conservation actions (as well as ongoing operation and maintenance activities) on 96 covered species. The HCP would provide the basis for FWS to issue "take" authorization (under section 10 of the ESA) to IID for its potential impacts to listed species. Because issuance of the section 10 permit by FWS is uncertain, Reclamation has initiated a consultation with FWS under section 7 of the ESA, which could provide an alternative mechanism for obtaining "take" authorization for IID impacts. The section 7 approach is based upon a more narrowly defined species conservation plan (addressing only four listed species) and would result in greater residual biological impacts than the HCP approach. The section 7 approach and its impacts are described programmatically in this final IA EIS[3]. Additional NEPA and CEQA compliance would be carried out as determined appropriate by the lead agencies prior to implementation of elements of the species conservation plan. A more detailed description of IID's water conservation actions and the HCP are included in the IID Water Conservation and Transfer Project EIR/EIS (IID and USBR 2002).

Coachella Valley Water District

Under the IA and QSA, CVWD would agree to limit its consumptive use of Colorado River water under Priority 3a to 330 KAFY for the quantification period, less the amount of water equal to that conserved by CVWD for the benefit of others as outlined in the IA and QSA, and subject to adjustment as proved in the IOP. CVWD also would receive Colorado River water and SWP water via transfers from both IID and MWD, resulting in an additional 55 to 155 KAFY of Colorado River water, of which 35 KAFY would be exchanged for SWP water. This water is part of the overall water supply addressed in the CVWMP (CVWD 2000a), which was prepared by CVWD to establish an overall program for managing its surface and groundwater resources in the future. The CVWMP involves a number of actions to reduce the current overdraft of groundwater in the Coachella Valley. The water delivered under the IA would be used to the benefit of Improvement District No. 1 (ID-1), which includes the lower portion of the Coachella Valley and a small portion of the Upper Valley. The Upper Valley consists of primarily open desert lands and resort areas, whereas the Lower Valley area is primarily agricultural land.

Under the IA and QSA, from between 55 and 155 KAFY of additional Colorado River and SWP water would replace current use of groundwater or would be used for direct groundwater

3. Displaying impacts under NEPA does not equate to the Secretary having the ability to influence or change a particular course of action. Some agencies, including Reclamation, undertake NEPA analysis of proposed actions even when it is not required by law. Contrarily, a proper effects analysis under the ESA *must* include the ability to influence the outcome. To include in the section 7 consultation process information which is superfluous to an action agency's discretion would be meaningless and otherwise confuse the process. See generally, *Sierra Club v. Babbitt*, 65 F.3d 1502 (9th Cir. 1995).. Displaying impacts in this NEPA document resulting from actions undertaken by the state parties under the QSA does not create within the Secretary discretion under the ESA to force these state entities to change or alter the manner in which they are conserving and transferring water in order to either lessen or eliminate impacts to listed species in or around the Salton Sea area.
NEPA is a tool that allows for a fully informed decision making process but does not mandate a particular outcome nor does it control the decision making process. "NEPA does set forth significant substantive goals for the Nation, but its mandate to the agencies is essentially procedural." *Vermont Yankee Nuclear Power Corp. v. NRDC*, 435 U.S. 519, 558 (1978); see also *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989). ("It is now well settled that NEPA itself does not mandate particular results, but simply prescribes the necessary process.") Alternatively, section 7 of the ESA can substantively affect the decision making process. *TVA v. Hill*, 437 U.S. 153 (1978). Clearly, application of the ESA can change the outcome of the agency action, while displaying impacts under NEPA does not change the outcome of the agency action. "NEPA is a procedural statute designed merely to bring environmental concerns into the agency decision-making process. . .[t]he ESA, on the other hand, contains the important substantive mandate that threatened and endangered species shall not be placed in jeopardy." *Connor v. Burford*, 848 F2d 1441, 1458 n. 40, (9th Cir. 1988).

recharge. This would involve the use of the existing canal and distribution systems and potential expansion of those systems. Construction of pumping stations and other facilities may also be required, along with recharge facilities for direct groundwater recharge. Construction of these facilities is evaluated in this EIS based on available information. The exact location of these facilities is not known at this stage of plan development, but two areas under consideration include the vicinity of Dike 4 (a flood control dike) and the Martinez Canyon alluvial fan located east of the community of Valerie Jean. Expansion of the distribution system and construction of the recharge project would be the subject of separate NEPA review once specific sites have been selected, since both sites under consideration would require construction of facilities that are on Federal land or otherwise involve Federal action(s).

Metropolitan Water District

In a year where only 4.4 MAFY of Colorado River water is available in the State of California, MWD is limited to 550 KAF of Priority 4 water, less the amount of water needed to satisfy PPRs, plus up to 110 KAF of water conserved by IID under the IID/MWD 1988 Agreement. Under the IA and in a normal year, MWD would receive up to 56.2 KAFY from the AAC Lining Project, 21.5 KAFY from the Coachella Canal Lining Project, and up to 100 KAFY from the First and Second 50 KAFY (in the event that CVWD elects not to take this water); under the IA and in a normal year, MWD would transfer 35 KAFY of Colorado River water to CVWD under the MWD/CVWD SWP Exchange and Transfer Agreement, and would transfer 20 KAFY to CVWD under the amended IID/MWD 1988 Agreement and subsequent amended agreements.

Under the IA and QSA and in a normal year, MWD would also divert into the CRA, between 130 to 200 KAFY of conserved IID water transferred to SDCWA and 16 KAFY to facilitate implementation of the San Luis Rey Indian Water Rights Settlement Act. The water that would be diverted as part of the San Luis Rey Indian Water Rights Settlement Act would result in a more secure water supply for the City of Escondido and/or Vista Irrigation District, which are part of the MWD service area.

Implementation of the IA would not require the construction of new MWD facilities or the modification of existing MWD facilities.

Under the IA and QSA, MWD would be responsible, pursuant to the IOP, for repayment of any overrun as a result of aggregate use by Priorities 1, 2, and 3b in excess of 420 KAFY. (These priorities are established by the 1931 Secretarial regulations incorporating the recommendations of the Seven Party Agreement to PVID [Priorities 1 and 3b] and the YPRD [Priority 2]). If Priorities 1, 2, and 3b used less than 420 KAFY, MWD would have the exclusive right to consumptively use any remaining water under these priorities until the net use of water reached 420 KAFY.

San Diego County Water Authority

SDCWA would receive 130 to 200 KAFY of Colorado River water conserved by IID. Implementation of the IA would not require the construction of new SDCWA facilities nor would the implementation of the IA require the modification of existing SDCWA facilities.

2.2.2 Adoption of an Inadvertent Overrun and Payback Policy

The IOP component of the proposed action includes adoption of a policy that would identify inadvertent overruns of Colorado River water, establish procedures that account for inadvertent

overruns, and define subsequent payback requirements. The IOP would not be materially modified for a 30-year period. The IOP is a condition precedent to the IA and QSA; that is, the IOP must be in place prior to implementation of the IA and QSA. The IOP would be applicable to all lower Basin States' users with quantified entitlements but would not be applicable to Mexico. The complete text of the proposed IOP policy is included as Appendix I.

An inadvertent overrun is defined as Colorado River water that is diverted, pumped, or received by an entitlement holder in excess of the water user's entitlement for that year. The overrun is termed inadvertent because it is deemed to be beyond the control of the water user. The IOP applies to all quantified Colorado River water entitlements in the Lower Basin and can only be applied to quantified consumptive use entitlements or entitlements that would take the remaining quantity of a State's apportionment. A procedure has not been established for applying the IOP to un-quantified Colorado River water entitlements since entitlements, that are not quantified, would have no baseline from which to make a determination that an overage occurred.[4]

Under the IOP, payback would be required to begin in the calendar year that immediately follows the release date of the Decree Accounting Record that reports inadvertent overruns for a Colorado River water user. Prior to the beginning of the calendar year, the user's water order, along with the payback plan, and the user's existing Reclamation-approved conservation plan would be submitted to Reclamation for review and approval within the normal 43 CFR 417 process. Reclamation would review the user's payback plan solely to assure that the plan would adequately result in water savings equal to their payback requirement. In their payback plan, the user would be required to demonstrate that the extra-ordinary measures are not part of any on-going measures intended to reduce use for a transfer. Under the 43 CFR 417 process, Reclamation would also determine the user's adjusted entitlement (entitlement - transfers - payback requirement) and require a water order that is consistent with the adjusted entitlement. The IOP includes the following provisions:

- Payback must be made only from water management measures that are above and beyond the normal consumptive use of water; actions must be taken to conserve water that otherwise would not return to the mainstream of the Colorado River and be available for beneficial consumptive use in the U.S. or to satisfy the United States–Mexico Water Treaty of 1944 obligation.

- Maximum cumulative inadvertent overrun accounts for individual entitlement holders are 10 percent of an entitlement holder's normal year consumptive use entitlement.

- The number of years within which an overrun, calculated from consumptive uses reported in final Decree accounting records, must be paid back, and the minimum payback required for each year shall be as follows:

  – In a year in which the Secretary makes a flood control release[5] or a space building release[6], any accumulated amount in the overrun account would be forgiven.

4. Unquantified Colorado River water entitlements are entitlements that specify the diversion of Colorado River water for irrigation of a certain acreage or specific area of land.
5. Flood control release is a release of water from Lake Mead for the purpose of meeting specific criteria as specified by the U.S. Army Corps of Engineers (USACE).
6. Space building release is a release of water from Lake Mead for the purpose of obtaining the required August 1 to January 1 available flood control storage space in Lake Mead as specified by the USACE.

- If the Secretary has declared a 70R[7] surplus in the AOP, any payback obligation would be deferred at the entitlement holder's option.
- When Lake Mead's elevation is between the elevation for a 70R surplus declaration and elevation 1,125 feet above mean sea level (msl) on January 1 of the first year of payback, the payback obligation must be paid back in full within 3 years. The minimum payback the first year would be the greater of 20 percent of the individual entitlement holder's maximum allowable cumulative overrun account amount, or 33.3 percent of the total account balance.
- When Lake Mead's elevation is at or below elevation 1,125 feet above msl on January 1 of the first year of payback, the total account balance must be paid back in full in that calendar year.

2.2.3 Implementation of Biological Conservation Measures

This component of the proposed action involves implementation of the biological conservation measures identified in the BO. They were developed to fully compensate for impacts of the changes in point of delivery of Colorado River water that would occur under the IA.[8] This EIS addresses these measures programmatically. As detailed plans are developed and specific land disturbing activities are identified, Reclamation will determine and carry out supplemental NEPA compliance evaluations, as appropriate. The conservation measures related to the IA water transfers consist of the following:

1. Reclamation would stock 20,000 razorback suckers, 25 centimeters (cm) or greater in length, into the Colorado River between Parker and Imperial Dams. This would be a continuation of present efforts and would bring the total number of razorbacks of 25 cm or greater in length stocked below Parker Dam to 70,000. This would be completed by 2006.

2. Reclamation would restore or create 44 acres of backwaters along the Colorado River between Parker Dam and Imperial Dam. This effort could include restoring existing decadent backwaters for which no on-going effort provides funding or responsibility for restoration, or the creation of new backwaters where water availability, access, and other considerations can be met. Maintenance of these backwaters for native fish and wildlife would be ensured for the life of the water transfers. This would be completed within 5 years of the first water transfers under the IA (excluding the on-going water transfer under the IID/MWD 1988 Agreement and subsequent agreements).

3. Reclamation would provide $50K in funding for the capture of wild-born or first generation (F1) bonytails from Lake Mohave to be incorporated into the broodstock for this species and/or to support rearing efforts at Achii Hanyo, a satellite rearing facility of Willow Beach National Fish Hatchery. These efforts would be funded for 5 years.

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7. The "R" Strategy is an operating strategy for distributing surplus water and avoiding spills. The R strategy assumes a particular percentile historical runoff, along with a normal year, or 7.5 MAF delivery to Lower Division States, for the next year. Applying these values to current reservoir storage, the projected reservoir storage at the end of next year is calculated. If the calculated space available at the end of next year is less than the space required by flood control criteria, then a surplus condition is determined to exist.
8. The biological conservation measures evaluated in this EIS are related to the change in point of delivery of up to 400 KAFY while IA related changes in points of delivery may range up to 388 KAFY.

4. A two-tiered conservation plan has been developed to minimize potential effects to occupied willow flycatcher habitat that could result due to reduced flows on the Colorado River between Parker and Imperial Dams as water transfers and associated changes in point of delivery are implemented. The details of the Plan may be found below, and in the BO in Appendix E.

Backwaters

No specific location has been identified for the restoration or creation of the 44 acres of backwaters along the Colorado River between Parker and Imperial Dams. Identification and design of these backwater habitats would be the subject of further site-specific studies and site-specific impacts would be addressed as further actions in subsequent NEPA evaluations, as deemed appropriate. Creation of the backwater habitat may involve dredging and other grading activities. These activities could include vegetation clearing, grading, and channel deepening. This backwater habitat restoration may be located in one area or may be scattered in several locations along the lower portion of the Colorado River. It is not expected that the backwater habitat restoration or creation would materially increase consumptive use of Colorado River water.

Two-Tiered Conservation Plan

The following discussion of the Two-Tiered Conservation Plan has been extracted directly from the January 2001 BO.

Tier One

The primary strategy of Tier One of the two-tiered conservation plan is to use management actions to prevent changes in the existing microhabitat and prey base of occupied willow flycatcher habitat. Reclamation would identify and monitor 372 acres of currently occupied habitat that may be affected by the water transfers and changes in point of delivery. Soil moisture would be monitored, and if soil moisture levels decrease, measures would be taken to maintain the monitored habitat. The monitoring program would be reviewed every 5 years to determine whether this is an appropriate level of effort to monitor the effects of the water transfer actions. Monitoring would continue for up to 5 years after implementation of all water transfer actions, unless it becomes part of a broader effort associated with other Reclamation recovery actions.

In addition, Reclamation would restore and maintain 372 acres of new replacement willow flycatcher habitat along the lower portion of the Colorado River. All 372 acres of new replacement would be in place within 5 years of the effective date of the IA.

Tier Two

A two-step contingency strategy would be initiated if Reclamation, in consultation with FWS, determines that management actions to prevent adverse changes to monitored habitat are no longer viable or would not be successful in maintaining "baseline" soil moisture conditions.

The two-step contingency strategy emphasizes replacement of the monitored habitat in Tier One impacted as a result of the IA. The status of willow flycatchers relative to success of recovery efforts along the lower portion of the Colorado River between Parker and Imperial Dams would

form the primary basis for determining the level of habitat replacement under this strategy using the two approaches outlined below.

Flycatcher Status Improving: If it is determined that the number of flycatchers along the lower portion of the Colorado River is increasing appreciably when compared to the year 2000, then one acre would be restored and maintained for every one acre that is adversely impacted. In combination with the 372 acres of newly enhanced habitat established under Tier One, the maximum acreage conserved would be 744 acres, and no further replacement of acreage would be required.

Flycatcher Status is Stable or Decreasing: Step 1 — If it is determined that the willow flycatcher population along the lower portion of the Colorado River is exhibiting an appreciable downward trend that is likely attributable to habitat factors along the River, then two acres would be restored and maintained for every one acre of monitored habitat that is impacted for the first 186 acres. Under this step, Reclamation would replace up to a maximum of 372 additional acres. Step 2 — If, after implementing Step 1, additional acreage of the monitored habitat is affected, then Reclamation would addresses the following two questions:

1. Are flycatchers occupying the 372 acres of replacement habitat already being maintained under Tier One?

2. Are the flycatchers along the lower portion of the Colorado River exhibiting an appreciable upward trend?

If the answer to either question 1 or 2 is yes, Reclamation would have no further requirement to restore acreage. If the answer to both questions is no, Reclamation would restore and maintain two acres for every one acre of monitored habitat that is impacted by the IA for the remaining 186 acres of monitored habitat. Under this step, Reclamation would replace and maintain up to a maximum of 372 additional acres. Should it be necessary to implement all of the Tier Two steps (744 acres) in addition to the Tier One actions (372 acres), a total of 1,116 acres would be replaced and maintained.

No specific locations for these actions have been identified; therefore, site-specific impacts would be addressed in subsequent NEPA evaluations, as appropriate. For the purposes of this analysis, it is assumed that the habitat creation or restoration may include the following:

1. Removal of large stands of salt cedar by mechanical means and revegetation with willow and cottonwood seedlings. Irrigation and monitoring would be required to ensure the development of the habitat.

2. Creation of cottonwood-willow "islands" within areas dominated by salt cedar. These "islands" would be expected to increase the overall habitat suitability for willow flycatcher in the area. Irrigation and monitoring would be required to ensure the development of the habitat.

3. Conversion of agricultural areas to cottonwood-willow habitat. Irrigation and monitoring would also be required for this process.

The manner of delivering water for the implementation of the biological conservation measures (i.e., for irrigation of revegetated areas) has not been identified since this would be site-dependent. The source and use of water for implementation of the biological conservation measures would be evaluated in future NEPA analyses if deemed appropriate.

2.3 NO-ACTION ALTERNATIVE

Under the No-Action Alternative, the IA, IOP, and the biological conservation measures would not be implemented.

2.3.1 No Action for Implementation Agreement

Execution of the IA commits the Secretary to make Colorado River water deliveries to the participating agencies according to the terms and conditions of the IA to enable implementation of the QSA; execution of the IA is a condition precedent to the QSA. Therefore, under the No-Action Alternative, the QSA also would not be implemented. The Secretary would continue to make deliveries of Colorado River water subject to the Law of the River, including the existing priority system, Section 5 contracts, and determinations identified in the ISG ROD. Because the QSA components are interdependent and represent a negotiated compromise of differing agency positions, under the No-Action Alternative it is assumed that none of the QSA components would be jointly and consensually approved, constructed, or implemented by CVWD, IID, and MWD.

Significant unresolved issues would remain regarding how California would divide Colorado River water among the participating agencies so as to limit the State's normal year diversion of Colorado River water to 4.4 MAFY. This would involve a reduction of approximately 600 KAFY from the 1990 to 1999 average Colorado River water diversion for the State of California, as required by the Secretary (pursuant to the Decree, and the LROC, and in accordance with the California Limitation Act). Specific implications of the No-Action Alternative are as follows:

- The IID/MWD 1988 Agreement, IID/MWD/PVID/CVWD 1989 Approval Agreement, and MWD/CVWD 1989 Agreement to Supplement Approval Agreement which have been implemented, would continue;
- There would be no consensual implementation of the new, cooperative, voluntary management plans or programs for water conservation, exchanges or transfers among the parties to the IA, and additional funding to support further agricultural conservation would be subject to pending disputes;
- The structural projects embodied in the QSA that would help conserve Colorado River water, such as lining the AAC and the Coachella Canal, could lose $200 million in State funding and may not be implemented; therefore, there may not be water available from canal lining projects to facilitate implementation of the San Luis Rey Indian Water Rights Settlement Act;
- There would be no consensual agreement between CVWD, IID, and MWD to forego use of water to permit the Secretary to satisfy the water demands of holders of Miscellaneous and Federal PPRs not within the Priorities contained in the Seven Party Agreement, up to the amount of each PPR, whereby satisfaction of PPRs would otherwise reduce the amount of water available to the lowest priority user (which, in a normal year, would be MWD); and,

- In the event that California contractors have not executed the QSA by December 31, 2002, the Interim Surplus determinations identified in the ISG ROD will be suspended and surplus determinations will be based upon the 70R Strategy, until such time California completes all actions and complies with reductions in water use identified in Section 5(c) of the ISG ROD. Section 5(c) establishes benchmark quantities and dates for reductions in California agricultural usage, and states that in the event California has not reduced its use to meet the benchmark quantities, the Interim Surplus determinations identified in the ISG ROD will be suspended and determinations will be based on the 70R strategy. Section 5(c) also provides conditions regarding reinstatement of ISG surplus determinations if missed benchmarks are later met.

Defining a Reasonably Foreseeable Division of Colorado River Supply among California Agencies

The Seven Party Agreement established the relative priorities of Colorado River water use among various California agencies. Water delivery contracts between the U.S. and the various California public agencies or individuals provide for water storage and delivery from Lake Mead in excess of 5.362 MAFY. This 5.362 MAFY was the amount prioritized in the Seven Party Agreement and incorporated into the water delivery contracts. Some of the PPRs specified in the Decree and supplemental Decrees were not included in the Seven Party Agreement or subsequent water delivery contracts. PPRs have more senior water rights and therefore are satisfied before water is allocated under the Seven Party Agreement.

Under the No-Action Alternative, in a normal year, and in the event that there is no unused Arizona and Nevada apportionment, California would be required to reduce diversions from the Colorado River to the State's 4.4 MAFY apportionment. Significant issues related to how California would reduce diversions to the apportioned level would remain unresolved. There are currently no alternative consensual water budgets established for the No-Action Alternative that identify how California could achieve reductions in overall use of Colorado River water; it is likely that such issues would be resolved only after protracted conflict and litigation. It is also likely that attention would be focused on the reasonable and beneficial use of water.

In addition to the 4.4 MAFY apportionment in a normal year described earlier, California is entitled to 50 percent of the surplus water in the Lower Basin and water allocated to, but not used by, other States when such water is made available by the Secretary. The surplus water and the unused portion of Arizona's and Nevada's apportionment historically have been used by holders of California's Priority 5a and 5b (allocated to MWD) and Priority 6 (allocated to PVID, IID, and CVWD) as defined in the Seven Party Agreement, although in the event that this water is available in the future, it would be utilized pursuant to the Law of the River. Under the No-Action Alternative, the availability of water for California's Priority 5a and 5b (together totaling 662 KAFY) and Priority 6 (300 KAFY) users would be uncertain. Depending on hydrologic conditions, the Secretary may determine a surplus on the Colorado River consistent with Article III(3)(b) of the LROC and Article II(B)(2) of the Decree, and the ISG.

Under the No-Action Alternative, there would be no further quantification of Priority 3a water between CVWD and IID. In a normal year, Priorities 1, 2, 3a, and 3b, in combination, would be limited to 3.85 MAFY. In a normal year, MWD would be required to reduce Colorado River water diversions to 550 KAFY of Priority 4 water, less the amount of water needed to satisfy PPRs, and pursuant to the IID/MWD 1988 Agreement and subsequent agreements, could divert up to an

additional 110 KAFY of water conserved by IID. In a normal year, and in the event that holders of Priorities 1 through 3 together use less than 3.85 MAFY, MWD may divert the remainder up to the State's cumulative diversion amount of 4.4 MAFY or up to MWD's Priority 5a and 5b apportionment of 662 KAFY. However, in a normal year, MWD's diversions may be reduced below the amounts specified above by the amount of Colorado River water diverted by PPRs in California that is not accounted for under Priorities 1, 2, 3a, and 3b. Colorado River water diversions to the State of California could be greater than 4.4 MAF in a normal year in the event that there is unused Arizona and Nevada apportionment; this water would be allocated to entities within the State of California pursuant to the Law of the River.

Under the No-Action Alternative, MWD would be able to draw upon the approximately 80 KAF MWD has stored in central Arizona under an agreement with the CAWCD and may also be able to draw, annually, up to 111 KAF from the PVID Land Management, Crop Rotation, and Water Supply Program; however, diversions of Colorado River water by MWD would still likely be less than MWD's historic diversions because surplus or unused apportionment water historically has been diverted to fill a portion of the CRA.

The Secretary would continue to complete annual review and approval of water orders from users of Colorado River water in the Lower Division States. This process would be completed pursuant to Title 43 CFR Part 417, to ensure that water orders are limited to amounts required for reasonable and beneficial use. Under the No-Action Alternative, it is likely that during normal years these reviews would be more detailed and involve greater scrutiny from Reclamation and interest by other Colorado River water users than in surplus years. In the absence of unused apportionment in the states of Arizona and Nevada, California would be required to reduce its use to 4.4 MAFY in a normal year. Past legal threats and challenges among California Colorado River water users related to reasonable and beneficial use would likely occur again in normal years under the No-Action Alternative.

Since the components of the IA and QSA are interdependent, under the No-Action Alternative, any transfer of conserved Colorado River water among California agencies would likely be subject to challenges and litigation with the attendant increased costs and uncertainty. Thus, opportunities for effectuating intra-California water transfers of Colorado River water would be diminished.

Defining Reasonably Foreseeable Agency Responses

Under the No-Action Alternative, there would be a decrease in Colorado River water supplies for CVWD, IID, MWD, and SDCWA. These agencies might undertake other actions to increase their overall water supply and its reliability, including increased water conservation, increased reliance on other existing water supplies such as the SWP or groundwater, or further development of new supplies through water recycling or desalination. If reliability is not increased through these types of actions, additional water conservation or water rationing programs might be required during years of normal and shortage conditions on the Colorado River.

Under the No-Action Alternative, each agency would also be expected to continue to implement projects already undertaken independent of the IA and QSA to increase water supply and reliability. However, additional new agency-specific projects responding to non-implementation of the IA and QSA and reduced water supply and reliability are speculative and, therefore, are not part of the No-Action Alternative.

2.3.2 No Action for Inadvertent Overrun Policy

Under the No-Action Alternative, the IOP would not be adopted, and the Secretary would enforce the obligations under the Decree to ensure that no Colorado River water user exceeds its entitlement amount. Diversions of Colorado River water are reported monthly for most water users, and Reclamation releases a monthly tabulation of the cumulative years diversions and return flows as discussed in section 1.2.3. Under the No-Action Alternative, Reclamation would enforce its obligations under the Decree, which may include reducing deliveries for those water users that would overrun based on diversions to date and projected diversions for the remainder of the year, and/or stopping deliveries for water users that are at their entitlement amount. However, due to the nature of measurement, reporting, and accounting practices, there would continue to be some level of inadvertent overruns. The Secretary may determine at a future date that there is a need for a policy to assure these are addressed in a consistent fashion.

2.3.3 No Action for Biological Conservation Measures

Under the No-Action Alternative, the applicable biological conservation measures identified in the BO would not be implemented. Reconsultation with FWS would be required to effectuate any additional water transfers.

2.4 ALTERNATIVES

2.4.1 Implementation Agreement Alternatives

Because the purpose of the proposed action is to provide Federal approval of an agreement negotiated among the California parties, no other action alternatives are being considered. The QSA is a consensual agreement among three parties (CVWD, IID, and MWD) that resolves longstanding disputes regarding the priority, use, and transferability of Colorado River water. The proposed IA reflects that consensual agreement. The IA and QSA have been developed in response to the Secretary's 1996 statement that California must implement a strategy to enable the State to limit its use of Colorado River water to 4.4 MAF during a normal year or develop the means to meet its water needs from sources that do not jeopardize the delivery of Colorado River water to other States. Development of a strategy to reduce California's diversions of Colorado River water is considered by the Secretary to be a prerequisite for Secretarial approval of any further cooperative Colorado River water transfers among California agencies. The other Colorado River Basin States are also aware of the implications of the IA and QSA, and are very interested in and supportive of California's progress in reducing its Colorado River water diversions.

2.4.2 Inadvertent Overrun Policy Alternatives

Many alternative concepts and issues were considered in the development of the proposed IOP. Much interest and many ideas were identified during the scoping process and in response to the draft policy published in the *Federal Register*. As a result of considering public comment, one additional IOP alternative has been developed, and is considered, along with the proposed action, in this EIS.

No Forgiveness During Flood Releases Alternative

The proposed IOP contains a provision that in a year during which the Secretary makes a flood control release or a space building release, any accumulated amount in an overrun account would be forgiven. The No-Forgiveness Alternative would eliminate that provision. Under this alternative, during a flood control or space building release year, the overrun account would be deferred, but not forgiven. Payback would resume in the next year when such releases are not scheduled. All other provisions would be the same as the proposed IOP.

2.4.3 Alternative Biological Conservation Measures

No alternatives to the biological conservation measures identified in the BO are considered in this EIS. These conservation measures, which were included by Reclamation in its BA, would be implemented by Reclamation as specified in the BO. If Reclamation were unable to implement these measures as proposed, reinitiated consultation with FWS would be required.

2.5 SUMMARY COMPARISON OF ALTERNATIVES

The potential impacts of the execution of the IA, adoption of the IOP, and implementation of the biological conservation measures are evaluated for the following resources in this EIS: Hydrology/Water Quality/Water Supply, Biological Resources, Hydroelectric Power, Land Use, Recreational Resources, Agricultural Resources, Socioeconomics, Environmental Justice, Cultural Resources, Tribal Resources, Air Quality, and Transboundary Impacts. Based on a resource-specific detailed analysis, Reclamation has determined that implementation of the proposed action would result in negligible impacts to the following resource areas: geology, soils, and mineral resources; noise; aesthetics; and public services. Therefore, these resource areas are not specifically addressed in this EIS. However, to the extent that an aspect of any of these resource areas may impact another resource, discussion had been incorporated.

Table 2.5-1 summarizes, by resource area, the potential impacts for each component of the proposed action.

Table 2.5-1. Summary of Potential Impacts of the Execution of the IA, Adoption of the IOP, and Implementation of Biological Conservation Measures (Page 1 of 32)

Resource/Issue	*No Action*	*Impacts of Proposed Action/Alternatives*
HYDROLOGY/WATER QUALITY/WATER SUPPLY		
Implementation Agreement		
Potential impacts to Colorado River flows from transfers authorized by the IA.	Projected Average Annual Flow (MAFY): Glen Canyon to Hoover Dam: 8.23 to 10 Hoover Dam to Parker Dam: 8.54 to 9.72 Parker Dam to Imperial Dam: *At Headgate Rock Dam:* 6.72 to 6.8 *Below Palo Verde Diversion Dam*: 6.02 to 6.16	Primary impacts are in the reach between Parker Dam and Imperial Dam. Below Parker Dam, due to transfers authorized by the IA, average annual flows would decrease by a little as 138 KAF to as much as 388 KAF. This could result in lowering of median annual surface water levels by up to 0.4 feet in this reach.
Potential impacts to reservoir levels from transfers authorized by the IA.	Lake Powell levels are expected to be lower than historic levels due to increased Upper Basin depletions. Median Lake Powell levels are expected to decline for a number of years and then stabilize. In the short term (years 2002-2010), Lake Mead levels would be greater than that needed to produce electricity. However, after year 2011, there would be a 44% probability that Lake Mead would fall below 1083 feet msl. Through 2017, modeling results show that Lake Mead levels would exceed that needed for operation of Southern Nevada Water Authority's (SNWA) original intake (1050 feet msl), after 2017, reservoir levels would decline and there would be a 40% probability that Lake Mead would be lower than 1050 feet mean sea level (msl). During years 2002 through 2049, modeling shows that Lake Mead levels would be greater than necessary to operate SNWA)'s second water intake (1000 feet msl). But after 2049 there would be a 6% probability that Lake Mead elevation would be below elevation 1000 feet msl.	Lake Powell and Lake Mead water surface elevations would decline under No Action and this trend would continue with implementation of the IA. The IA would not cause a significant change relative to No Action in the anticipated lake levels.

Table 2.5-1. Summary of Potential Impacts of the Execution of the IA, Adoption of the IOP, and Implementation of Biological Conservation Measures (Page 2 of 32)

Resource/Issue	*No Action*	*Impacts of Proposed Action/Alternatives*
HYDROLOGY/WATER QUALITY/WATER SUPPLY		
Potential impacts to water quality from transfers authorized by the IA.	Under No Action and without further additional salinity controls, salinity concentrations below Hoover, Parker, and Imperial Dams would reach and then exceed the Water Quality Standards for Salinity in the Colorado River Basin by the year 2006. Continued implementation of the Colorado River Basin Salinity Control Program would ensure that the standards are maintained. Long-term, average salinities would be maintained at or below the numeric criteria levels.	Under the IA, projected salinity is similar to that of No Action. Below Hoover Dam and Parker Dam, projected salinity under the IA is no more than 1 mg/L higher than would be expected under No Action. At Imperial Dam, salinity is no more than 8 mg/L higher than would occur under No Action. However, these impacts would be fully offset by the continued implementation of the authorized Colorado River Basin Salinity Control Program. There would be increased selenium and salt concentrations in the New River, Alamo River and IID drains resulting from IID water conservation actions. These increased concentrations complicate the ability to meet proposed TMDL's for selenium in the Alamo River and IID drains and the TMDL for salt in the Salton Sea. There would be increased selenium in CVWD drainage water, increased salinity in the CVWD Upper Valley aquifer and near groundwater recharge areas, and the potential introduction of perchlorate into CVWD groundwater.
Potential impacts to groundwater from transfers authorized by the IA.	In the valleys below Parker, it is estimated that for every 1 unit in drop in river elevation, groundwater under irrigated fields will drop by half a unit. In a non-irrigated reach, groundwater elevation drop is assumed to be equal to the river drop.	The decline in median river stage could result in similar declines in median groundwater levels (as much as 0.4 feet) relative to the No-Action Alternative. Reduction in groundwater elevation would be greatest in non-irrigated areas and less severe in irrigated areas.

Table 2.5-1. Summary of Potential Impacts of the Execution of the IA, Adoption of the IOP, and Implementation of Biological Conservation Measures (Page 3 of 32)

Resource/Issue	*No Action*	*Impacts of Proposed Action/Alternatives*
HYDROLOGY/WATER QUALITY/WATER SUPPLY		
Implementation Agreement/Inadvertent Overrun Policy		
Potential impacts to Colorado River flood releases from inadvertent overruns and payback policy.	None.	In the evaluation of the comparison of the differences in the observed flood flows between the No Action and the IA that considered an average Lower Basin Overrun Account Balance of 66 KAFY modeled conditions, in approximately 16 percent of instances where differences were observed, the differences were positive which represented an increase in the magnitude of flows. However, for the 75-year period of analysis, the average of the differences was a reduction of 35,811 AF. In the evaluation of the comparison of the differences in the observed flood flows between the No Action and the IA that considered a Lower Basin Overrun Account Balance of 331 KAFY modeled conditions, in approximately 11.7 percent of instances where differences were observed, the differences were positive which represented an increase in the magnitude of flows. However, for the 75-year period of analysis, the average of the differences was a reduction of 219,539 AF. No Forgiveness Alternative: Same as the proposed project.
Potential impacts to Colorado River flows from inadvertent overruns and payback policy.	Without passage of the IOP, the Secretary would be required to enforce the provisions of the Decree. The Secretary would continue with the existing policy of not delivering water in excess of a State's, water district's, or entity's entitlement. No impact on flow.	Proposed IOP: With implementation of the IOP, the average increase in annual flow during overruns in the Hoover to Parker River reach would be approximately 90 KAF. An increase of 90 KAF to annual flow represents an increase from historic average annual flows of 0.8 percent and an increase

Table 2.5-1. Summary of Potential Impacts of the Execution of the IA, Adoption of the IOP, and Implementation of Biological Conservation Measures (Page 4 of 32)

Resource/Issue	*No Action*	*Impacts of Proposed Action/Alternatives*
HYDROLOGY/WATER QUALITY/WATER SUPPLY		
Potential impacts to Colorado River flows from inadvertent overruns and payback policy (cont.).		over flows under No Action as great as 1.1 percent[1]. The average decrease in flow due to paybacks would be roughly 72 KAF, or 0.6 percent less than average annual historic flows and 0.8 percent less than under No Action. Assuming the largest anticipated overrun, annual flows from Hoover Dam to Parker Dam could be augmented by overruns by as much as 313 KAF and diminished by payback as great as 206 KAF. However, this represents the largest overrun and payback scenario anticipated. With implementation of the IOP, the average increase in annual flow in the Parker to Imperial River reach would be approximately 90 KAF. An increase of 90 KAF to annual flow represents an increase from historic average annual flows of 0.9 percent and an increase over flows under No Action as great as 1.3 percent[2]. The average decrease in flow would be roughly 63 KAF, or 0.7 percent less than average annual historic flows and 0.9 percent less than under No Action. Assuming the largest anticipated overrun, annual flows below Parker Dam could be augmented by overruns by as much as 313 KAF and diminished by payback as great as 176 KAF. However, this represents the largest overrun and payback scenario anticipated.

1 Increased and decreased flows resulting from implementation of the IOP were compared to estimated flows under No Action at Havasu National NWR.
2 Increased and decreased flows resulting from implementation of the IOP were compared to estimated flows under No Action at Headgate Rock Dam.

Table 2.5-1. Summary of Potential Impacts of the Execution of the IA, Adoption of the IOP, and Implementation of Biological Conservation Measures (Page 5 of 32)

Resource/Issue	*No Action*	*Impacts of Proposed Action/Alternatives*
HYDROLOGY/WATER QUALITY/WATER SUPPLY		
Potential impacts to Colorado River flows from inadvertent overruns and payback policy (cont.).		The potential elevation change from combined IOP and IA impacts is anticipated to be within the historic fluctuation and the fluctuation that would be seen under No Action. No Forgiveness Alternative: Similar to proposed IOP, except would have more extended payback periods which would result in lower flow a greater percentage of the time.
Biological Conservation Measures		
The potential impacts to hydrology resulting from the biological conservation measures.	None.	Potentially minor reduction in river flows.
The potential impacts to water quality resulting from the biological conservation measures.	None.	Potential impacts to water quality during construction activities.
BIOLOGICAL RESOURCES-VEGETATION		
Implementation Agreement		
Colorado River. Potential loss of vegetation from decreased water levels (and associated drop in groundwater level) of the Colorado River between Parker Dam and Imperial Dam.	No change to vegetation would occur.	Drop in groundwater levels may impact riparian and marsh vegetation with shallow roots, such as cottonwood and willow trees. Full mitigation of these impacts would be accomplished through implementation of the biological conservation measures.
Imperial Irrigation District. Potential loss of native vegetation from construction and operation of water conservation measures.	There is a potential for water conservation measures to be implemented in the IID service area even if the IA were not implemented. This could result in impacts comparable to the proposed IA.	Construction activities have the potential to cause both temporary and permanent losses of native vegetation, depending on the exact location and extent of such activities. Conservation measures could result in a reduction of flow and changes in water quality within drain water, which may reduce emergent marsh and riparian vegetation.

Table 2.5-1. Summary of Potential Impacts of the Execution of the IA, Adoption of the IOP, and Implementation of Biological Conservation Measures (Page 6 of 32)

Resource/Issue	*No Action*	*Impacts of Proposed Action/Alternatives*
BIOLOGICAL RESOURCES-VEGETATION		
Coachella Valley Water District. Potential loss of native vegetation from construction and operation of new facilities and from increased groundwater levels.	Some facilities considered under the IA may still be constructed as part of the CVWMP, resulting in impacts to biological resources that are similar to the IA.	Construction activities have the potential to cause both temporary and permanent losses of native vegetation, depending on the exact location and extent of such activities. Increased groundwater levels would increase the levels of drain water, which is expected to maintain current riparian and marsh vegetation in the drains even if water conservation measures are implemented.
Metropolitan Water District. No new construction or changes in the operation of existing facilities.	No change to vegetation would occur.	None.
San Diego County Water Authority. No new construction or changes in the operation of existing facilities.	No change to vegetation would occur.	None.
Salton Sea. Potential loss of marsh and riparian vegetation from decreased water levels of the Salton Sea.	The impacts identified for the IA would occur, but at a slower rate.	The potential for a more rapidly declining Sea level has the potential to result in the loss of marsh and riparian vegetation, especially in the southern portion of the Sea. The declining sea level could impact wetland and riparian vegetation along the drains, rivers and streams entering the Sea, as well as the confluence of the fresh waters with the Sea.
Inadvertent Overrun Policy		
Potential impact to riparian and aquatic vegetation from increases and decreases in the Colorado River flow during select portions of the 75-year time period.	No change to vegetation would occur.	Proposed IOP: Any yearly changes within the River flow would be within the historical hydrological parameters of the River and are not expected to impact riparian and aquatic vegetation. No Forgiveness Alternative: Similar to proposed IOP.

Table 2.5-1. Summary of Potential Impacts of the Execution of the IA, Adoption of the IOP, and Implementation of Biological Conservation Measures (Page 7 of 32)

Resource/Issue	*No Action*	*Impacts of Proposed Action/Alternatives*
BIOLOGICAL RESOURCES-VEGETATION		
Biological Conservation Measures		
Potential impact to native and non-native vegetation from restoration or creation of 44 acres of backwaters along the Colorado River between Parker Dam and Imperial Dam.	No change to vegetation would occur.	Construction may disrupt native and non-native vegetation, but this disruption would be temporary and it is anticipated that additional, better quality vegetation would be established once restoration is completed (beneficial impact). It is likely that areas where vegetation is removed would contain primarily introduced species, and native vegetation would be removed only on an incidental basis.
Potential impact to native and non-native vegetation from restoration or creation of up to 1,116 acres of southwestern willow flycatcher habitat along the Colorado River.	No change to vegetation would occur.	Construction may disrupt native and non-native vegetation, but this disruption would be temporary and it is anticipated that additional, better quality vegetation would be established once restoration is completed (beneficial impact). It is likely that areas where vegetation is removed would contain primarily introduced species, and native vegetation would be removed only on an incidental basis.
BIOLOGICAL RESOURCES-FISH AND WILDLIFE		
Implementation Agreement		
Colorado River. Potential impact to fish and wildlife from decreased water levels (and associated drop in groundwater level) of the Colorado River between Parker Dam and Imperial Dam and associated loss of vegetation habitat.	No change to fish and wildlife would occur.	A negligible adverse impact to sport fisheries would occur from lower river flows between Parker and Imperial dams. Drop in groundwater may reduce wetland and riparian habitat along the Colorado River, which is used by amphibians, reptiles, riparian and marsh obligate birds, and mammals. Full mitigation of these impacts would be accomplished through implementation of the biological conservation measures.

Table 2.5-1. Summary of Potential Impacts of the Execution of the IA, Adoption of the IOP, and Implementation of Biological Conservation Measures (Page 8 of 32)

Resource/Issue	*No Action*	*Impacts of Proposed Action/Alternatives*
BIOLOGICAL RESOURCES-FISH AND WILDLIFE		
Imperial Irrigation District. Potential impact to fish and wildlife from construction and operation of water conservation measures.	There is a potential for water conservation measures to be implemented in the IID service area even if the IA were not implemented. This could result in impacts comparable to the proposed IA.	Any loss of marsh and riparian habitat resulting from reduced flow in the drains could adversely impact bird and amphibian species using that habitat. Loss of native vegetation from construction activities, while not expected to be substantial, could impact common and typical wildlife species using those habitats.
Coachella Valley Water District. Potential impact to fish and wildlife from construction and operation of new facilities and from increased groundwater levels.	Some facilities considered under the IA may still be constructed as part of the CVWMP, resulting in impacts to biological resources that are similar to the IA.	Construction of new facilities may impact wildlife habitat, but it is anticipated that these areas would be primarily in disturbed areas such as roadways or adjacent to existing facilities.
Metropolitan Water District. No new construction or changes in the operation of existing facilities.	No change to fish and wildlife would occur.	None.
San Diego County Water Authority. No new construction or changes in the operation of existing facilities.	No change to fish and wildlife would occur.	None.
Salton Sea. Potential impact to fish and wildlife from decreased water levels and water quality of the Salton Sea.	The impacts identified for the IA would occur, but at a slower rate.	The acceleration of the increase in Sea salinity would result in an earlier decline of sport fisheries, non-game fish, and fish-eating bird populations.
Inadvertent Overrun Policy		
Potential impact to fish and wildlife from increases and decreases in the Colorado River flow during select portions of the 75-year time period.	No change to fish and wildlife would occur.	Proposed IOP: Any yearly changes within the River flow would be within the historical hydrological parameters of the River and are not expected to adversely impact fish and wildlife. No Forgiveness Alternative: Similar to proposed IOP.

Table 2.5-1. Summary of Potential Impacts of the Execution of the IA, Adoption of the IOP, and Implementation of Biological Conservation Measures (Page 9 of 32)

Resource/Issue	*No Action*	*Impacts of Proposed Action/Alternatives*
BIOLOGICAL RESOURCES-FISH AND WILDLIFE		
Biological Conservation Measures		
Potential impact to fish and wildlife from restoration or creation of 44 acres of backwaters along the Colorado River between Parker Dam and Imperial Dam.	No change to fish and wildlife would occur.	Construction may disrupt vegetation and create short-term impacts on fish and wildlife species during the period of restorations. Sedimentation during dredging may also impact aquatic organisms. Removal of vegetation during the nesting season may impact nesting bird species.
Potential impact to fish and wildlife from restoration or creation of up to 1,116 acres of southwestern willow flycatcher habitat along the Colorado River.	No change to fish and wildlife would occur.	Construction may disrupt vegetation and create short-term impacts on fish and wildlife species during the period of restorations. Sedimentation during dredging may also impact aquatic organisms. Removal of vegetation during the nesting season may impact nesting bird species.
BIOLOGICAL RESOURCES-SENSITIVE SPECIES		
Implementation Agreement		
Colorado River. Potential impact to sensitive plants, fish, and/or wildlife from decreased water levels (and associated drop in groundwater level) of the Colorado River between Parker Dam and Imperial Dam.	No change to sensitive species would occur.	Drop in groundwater may reduce wetland and riparian habitat along the Colorado River, which may impact sensitive species, such as razorback suckers, bonytail chub, Yuma clapper rail, California black rail, southwestern willow flycatcher, and yellow-billed cuckoo. Impacts and mitigations were addressed in the 2001 FWS Biological Opinion.
Imperial Irrigation District. Potential impact to sensitive plants, fish, and/or wildlife from construction and operation of water conservation measures.	There is a potential for water conservation measures to be implemented in the IID service area even if the IA were not implemented. This could result in impacts comparable to the proposed IA.	A Habitat Conservation Plan (HCP) has been prepared for the IID Water Conservation and Transfer Project. The HCP addresses both plant and fish and wildlife species within the IID service area and the Salton Sea. Construction of conservation projects, potential reduced flow and changed water quality in the drains, possible impacts on Salton Sea, and the potential for fallowing as a conservation method are all addressed in the HCP. If IID's proposed HCP is not implemented,

Table 2.5-1. Summary of Potential Impacts of the Execution of the IA, Adoption of the IOP, and Implementation of Biological Conservation Measures (Page 10 of 32)

Resource/Issue	*No Action*	*Impacts of Proposed Action/Alternatives*
BIOLOGICAL RESOURCES-SENSITIVE SPECIES		
Imperial Irrigation District. Potential impact to sensitive plants, fish, and/or wildlife from construction and operation of water conservation measures (cont.).		Reclamation has developed a proposed species conservation plan as an alternative means of providing incidental take authorization for IID's water conservation actions (USBR 2002b).
Coachella Valley Water District. Potential impact to sensitive plants, fish, and/or wildlife from construction and operation of new facilities and from increased groundwater levels.	Some facilities considered under the IA may still be constructed as part of the Coachella Valley Water Management Plan (CVWMP), resulting in impacts to biological resources that are similar to the IA.	None expected. Construction activities within any native plant community areas that could contain sensitive species would be evaluated for such species prior to the work. Potential impacts from increased flow in the drains will be addressed in the Coachella Valley Multi-Species Habitat Conservation Plan (CVMSHCP).
Metropolitan Water District. No new construction or changes in the operation of existing facilities.	No change to sensitive species would occur.	None.
San Diego County Water Authority. No new construction or changes in the operation of existing facilities.	No change to sensitive species would occur.	None.
Salton Sea. Potential impact to sensitive plants, fish, and/or wildlife from decreased water levels and water quality of the Salton Sea.	The impacts identified for the IA would occur, but at a slower rate.	Potential impacts to some of the more notable species of concern include the desert pupfish, Yuma clapper rail, and brown and white pelicans. The desert pupfish could be impacted by the more rapid reduction in water surface elevation of the Sea and potential isolation of drain habitats. The Yuma clapper rail and California black rail could be impacted by the loss or decline in productivity of the marshes near the Salton Sea. Fish-eating birds, such as the California brown pelican and white pelican, would be impacted sooner, since the fish that are food sources for these species would decline sooner.

Table 2.5-1. Summary of Potential Impacts of the Execution of the IA, Adoption of the IOP, and Implementation of Biological Conservation Measures (Page 11 of 32)

Resource/Issue	*No Action*	*Impacts of Proposed Action/Alternatives*
BIOLOGICAL RESOURCES-SENSITIVE SPECIES		
Inadvertent Overrun Policy		
Potential impact to sensitive plants, fish, and/or wildlife from increases and decreases in the Colorado River flow during select portions of the 75-year time period.	No change to sensitive species would occur.	Proposed IOP: Any yearly changes within the River flow would be within the historical hydrological parameters of the River and are not expected to adversely impact sensitive species. No Forgiveness Alternative: Similar to proposed IOP.
Biological Conservation Measures		
Potential impact to sensitive plants, fish, and/or wildlife from restoration or creation of 44 acres of backwaters along the Colorado River between Parker Dam and Imperial Dam.	No change to sensitive species would occur.	Construction would disrupt vegetation and cause sedimentation, which may create short-term impacts on sensitive species, such as the razorback sucker, Yuma clapper rail, and southwestern willow flycatcher. These impacts would be temporary and would lead to enhanced habitat for sensitive fish and wildlife species (beneficial impact).
Potential impact to sensitive plants, fish, and/or wildlife from restoration or creation of up to 1,116 acres of southwestern willow flycatcher habitat along the Colorado River.	No change to sensitive species would occur.	Construction would disrupt vegetation and cause sedimentation, which may create short-term impacts on sensitive species, such as the razorback sucker, Yuma clapper rail, and southwestern willow flycatcher. These impacts would be temporary and would lead to enhanced habitat for sensitive fish and wildlife species (beneficial impact).
HYDROELECTRIC POWER		
Implementation Agreement		
Colorado River. Potential impact to hydroelectric power.	None.	Regarding potential impacts to energy, Hoover and Davis Dams would not be measurably impacted. Power produced at Parker and Headgate Rock Dams would be reduced by about 5 percent. MWD could be economically impacted because the reduction in energy would mean less Federal power to pump Colorado River water through the Colorado River Aqueduct. Parker-Davis Project (P-

Table 2.5-1. Summary of Potential Impacts of the Execution of the IA, Adoption of the IOP, and Implementation of Biological Conservation Measures (Page 12 of 32)

Resource/Issue	*No Action*	*Impacts of Proposed Action/Alternatives*
HYDROELECTRIC POWER		
Colorado River. Potential impact to hydroelectric power (cont.).		DP) preference customers would potentially be impacted through the loss of or a percentage of loss of excess energy, potential increase in rates, and a reduction in future contract resources. A reduction in energy at Headgate Rock Dam could impact BIA's ability to meet new tribal energy demands.
Imperial Irrigation District. Potential impact to hydroelectric power.	None.	The energy production at the hydroelectric power facilities operated by IID could be impacted.
Coachella Valley Water District. Potential impact to hydroelectric power.	None.	None.
Metropolitan Water District. Potential impact to hydroelectric power.	None.	MWD could be economically impacted because the reduction in energy would mean less Federal power to pump Colorado River water through the Colorado River Aqueduct.
San Diego County Water Authority. Potential impact to hydroelectric power.	None.	None.
Salton Sea. Potential impact to hydroelectric power.	None.	None.
Inadvertent Overrun Policy		
Potential impact to hydroelectric power from increases and decreases in the Colorado River flow during select portions of the 75-year time period.	None.	Proposed IOP: The IOP would have positive impacts on power production during overrun years and negative impacts during payback years. Power production at Hoover, Davis, Parker, and Headgate Rock Dams would be impacted. No Forgiveness Alternative: Similar to the proposed IOP.

Table 2.5-1. Summary of Potential Impacts of the Execution of the IA, Adoption of the IOP, and Implementation of Biological Conservation Measures (Page 13 of 32)

Resource/Issue	*No Action*	*Impacts of Proposed Action/Alternatives*
HYDROELECTRIC POWER		
Biological Conservation Measures		
Potential impact to hydroelectric power from restoration or creation of habitat along the Colorado River between Parker Dam and Imperial Dam.	None.	None.
LAND USE		
Implementation Agreement		
Colorado River. Potential changes to land use patterns from decreased water levels of the Colorado River between Parker Dam and Imperial Dam.	If the IA were not implemented, no significant substantive land use changes in the project study area or conflicts with existing policies are expected to occur. The reliability of Colorado River water supplies would not be increased for CVWD, MWD, and SDCWA under this alternative, but these agencies might undertake other actions to increase their overall water supply reliability. None of these actions would be likely to impact development patterns or land use trends.	None.
Imperial Irrigation District. Potential changes to land use patterns from construction and operation of water conservation measures.	See Colorado River.	The conservation measures would be implemented on agricultural land and would not change land use patterns. The proposed water conservation measures would not result in any substantive land use impacts.
Coachella Valley Water District. Potential changes to land use patterns from construction of new facilities.	See Colorado River.	Pipelines would be placed mainly in existing streets, pump stations would be in agricultural areas, and recharge basins would be in open space, where they would not interfere with surrounding land uses. No substantive alteration of land use in this area is expected.
Metropolitan Water District. No new construction or changes in the operation of existing facilities.	See Colorado River.	None.

Table 2.5-1. Summary of Potential Impacts of the Execution of the IA, Adoption of the IOP, and Implementation of Biological Conservation Measures (Page 14 of 32)

Resource/Issue	*No Action*	*Impacts of Proposed Action/Alternatives*
	LAND USE	
San Diego County Water Authority. No new construction or changes in the operation of existing facilities.	See Colorado River.	None.
Salton Sea. Potential decline in recreational use from decreased water levels and increased salinity of the Salton Sea.	None.	Recreational use of the area, including sport fishing, is likely to decline sooner, given the acceleration of impacts to fish that would result from the increased salinity. This potential decrease in recreational activities would eventually occur whether or not the water transfers were implemented since salinity levels of the Sea would increase independently of implementation of the IA and QSA. The lands of the Torres Martinez Reservation, some of which underlie the existing Sea, would be exposed sooner and to a greater extent than under No Action.
Inadvertent Overrun Policy		
Potential changes to land use patterns from increases and decreases in the Colorado River flow during select portions of the 75-year time period.	None.	Proposed IOP: None. No Forgiveness Alternative: None.
Biological Conservation Measures		
Potential changes to land use patterns from restoration or creation of 44 acres of backwaters along the Colorado River between Parker Dam and Imperial Dam.	None.	Habitat restoration could result in a change from agricultural use to backwaters.
Potential changes to land use patterns from restoration or creation of up to 1,116 acres of southwestern willow flycatcher habitat along the Colorado River.	None.	Habitat restoration could result in a change from agricultural use to cottonwood-willow habitat.

Table 2.5-1. Summary of Potential Impacts of the Execution of the IA, Adoption of the IOP, and Implementation of Biological Conservation Measures (Page 15 of 32)

Resource/Issue	*No Action*	*Impacts of Proposed Action/Alternatives*
RECREATIONAL RESOURCES		
Implementation Agreement		
Colorado River. Potential changes to recreational facilities from decreased water levels of the Colorado River between Parker Dam and Imperial Dam.	None.	The water level of the River would change slightly, but the change would be within the normal range of variability, and no recreational facilities would be impacted. No changes are anticipated that would impact any recreational activities that are dependent upon fish or wildlife.
Imperial Irrigation District. Potential changes to recreational resources from construction and operation of water conservation measures and from reduction in drainage water.	None.	The proposed conservation measures would be located in remote farm areas and would not impact recreational resources.
Coachella Valley Water District. Potential changes to swimming and fishing in the Coachella Valley Stormwater Channel from increases in water flow, potential impacts to golf courses from use of Colorado River water instead of groundwater, and potential changes to recreational resources from construction of new facilities.	None.	Increase in flows to the Coachella Valley Stormwater Channel would have no substantial impact on swimming or fishing, but fish may be able to move further upstream than is currently possible. There would have no substantial impact on golf courses or other recreational resources.
Metropolitan Water District. No new construction or changes in the operation of existing facilities.	None.	None.
San Diego County Water Authority. No new construction or changes in the operation of existing facilities.	None.	None.

Table 2.5-1. Summary of Potential Impacts of the Execution of the IA, Adoption of the IOP, and Implementation of Biological Conservation Measures (Page 16 of 32)

Resource/Issue	*No Action*	*Impacts of Proposed Action/Alternatives*
RECREATIONAL RESOURCES		
Salton Sea. Potential decline in recreational use from decreased water levels and increased salinity of the Salton Sea.	Decreased water levels and increased salinity of the Sea would impact recreational uses. The increase in salinity would result in a substantive impact to sport fishing opportunities. The reduction in the Sea elevation would also substantively impact boat launching and mooring facilities once it receded below –230 feet since they would no longer have direct access to the water. Bird watching and waterfowl hunting also would likely decline since fewer birds would be present. Land-based recreational activities, such as camping, would likely decline due to the aesthetic degradation of the area.	Decreased surface area of the Sea would reduce the area that could be used for water-based recreational activities such as fishing and boating. The increase in exposed playa would provide more area for land-based recreation, including camping and picnicking, but may necessitate relocating facilities and trails that are currently near the water. It may also be necessary to remove exposed footings and other features that are currently under water for safety and aesthetic considerations. Increased salinity of the Sea would also impact sport-fishing opportunities, hunting, and wildlife viewing. Land-based recreational activities, such as camping, would likely decline due to the aesthetic degradation of the area.
Inadvertent Overrun Policy		
Potential decline in recreational use from potential payback requirements.	None.	Proposed IOP: Recreational resources would not be substantively impacted. No Forgiveness Alternative: Similar to the proposed IOP.
Biological Conservation Measures		
Potential impact to recreational resources on or near the Colorado River from restoration or creation of 44 acres of backwaters along the Colorado River between Parker Dam and Imperial Dam.	There would be no impact to recreational resources, but the benefits to passive recreational activities (such as bird watching) related to the creation of new habitat along the Colorado River would not be realized.	Establishing additional habitat along the River would benefit passive recreational activities because it would add to the total acreage of wildlife and fish habitat along the Colorado River mainstem (beneficial impact).
Potential impact to recreational resources on or near the Colorado River from restoration or creation of up to 1,116 acres of southwestern willow flycatcher habitat along the Colorado River.	There would be no impact to recreational resources, but the benefits to passive recreational activities (such as bird watching) related to the creation of new habitat along the Colorado River would not be realized.	Establishing additional habitat along the River would benefit passive recreational activities because it would add to the total acreage of wildlife and fish habitat along the Colorado River mainstem (beneficial impact).

Table 2.5-1. Summary of Potential Impacts of the Execution of the IA, Adoption of the IOP, and Implementation of Biological Conservation Measures (Page 17 of 32)

Resource/Issue	*No Action*	*Impacts of Proposed Action/Alternatives*
AGRICULTURAL RESOURCES		
Implementation Agreement		
Colorado River. Potential changes to agricultural land from decreased water levels of the Colorado River between Parker Dam and Imperial Dam.	Water use would have to be consistent with existing legal entitlements, although the manner in which this would occur is uncertain. The reliability of Colorado River water supplies would not be increased for CVWD, MWD, and SDCWA under this alternative, but these agencies might undertake other actions to increase their overall water supply reliability. This could impact the amount of water available for agricultural uses.	Any changes in River elevation would be minor and within current fluctuations and would not impact agricultural land.
Imperial Irrigation District. Potential reduction in agricultural production and/or decrease in the amount of land farmed from construction and operation of water conservation measures.	See Colorado River.	If fallowing were used as a conservation measure, it could be either rotational fallowing or permanent fallowing or a combination of the two. Rotational fallowing would be consistent with planned land uses and would not result in the reclassification of any prime or statewide important farmlands; therefore, no impact to agricultural resources would occur. However, permanent fallowing of agricultural land could be used to conserve water for transfer, which would result in the permanent fallowing of up to about 50,000 acres of land. This represents up to about 11 percent of the total net acreage in agricultural production within the IID water service area. Assuming all acreage included in the water conservation program was permanently fallowed, and thus reclassified, this would represent an adverse, unavoidable impact to the agriculture resources of the IID water service area.
Coachella Valley Water District. Potential changes to agricultural resources from more reliance on Colorado River and SWP water and from construction of new facilities.	See Colorado River.	Colorado River water has good infiltration characteristics, which would benefit some agricultural uses (beneficial impact). Construction of new facilities would not convert farmland to non-agricultural use.

Table 2.5-1. Summary of Potential Impacts of the Execution of the IA, Adoption of the IOP, and Implementation of Biological Conservation Measures (Page 18 of 32)

Resource/Issue	*No Action*	*Impacts of Proposed Action/Alternatives*
AGRICULTURAL RESOURCES		
Metropolitan Water District. No new construction or changes in the operation of existing facilities.	See Colorado River.	None.
San Diego County Water Authority. No new construction or changes in the operation of existing facilities.	See Colorado River.	None.
Salton Sea. Potential changes to agricultural resources from decreased water levels and increased salinity of the Salton Sea.	The Salton Sea itself does not contain agricultural resources and therefore no impact would occur.	The Salton Sea itself does not contain agricultural resources and therefore no impact would occur.
Inadvertent Overrun Policy		
Potential decline in crop selection for water users that must meet potential payback requirements.	This could impact short-term productivity on agriculture, but would not have long-term impacts and would not result in the loss of agricultural land or conflict with Williamson Act contracts.	Proposed IOP: Water users that are required to pay back water due to an inadvertent overrun may experience a short-term impact on agricultural productivity during payback years. No Forgiveness Alternative: Similar to proposed IOP.
Biological Conservation Measures		
Potential conversion of agricultural land to habit from the restoration or creation of 44 acres of backwaters along the Colorado River between Parker Dam and Imperial Dam.	None.	Creating backwaters could potentially occur on Prime or Unique Farmland or Farmland of Statewide Importance, but the acreage proposed for habitat restoration is relatively small (44 acres) and would not result in significant reduction in agricultural production within California or Arizona.
Potential conversion of agricultural land to habitat from restoration or creation of up to 1,116 acres of southwestern willow flycatcher habitat along the Colorado River.	None.	Creating cottonwood-willow habitat could potentially occur on Prime or Unique Farmland or Farmland of Statewide Importance, but the acreage proposed for habitat restoration is relatively small (up to 1,116 acres) and would not result in significant reduction in agricultural production within California or Arizona.

Table 2.5-1. Summary of Potential Impacts of the Execution of the IA, Adoption of the IOP, and Implementation of Biological Conservation Measures (Page 19 of 32)

Resource/Issue	*No Action*	*Impacts of Proposed Action/Alternatives*
	SOCIOECONOMICS	
Implementation Agreement		
Colorado River. Potential for change to population, housing or socioeconomics from decreased water levels of the Colorado River between Parker Dam and Imperial Dam.	The reliability of Colorado River water supplies for CVWD, MWD, and SDCWA would not increase, and there is a potential for the need for extreme water conservation or water rationing programs during drought years. These actions would not result in changes to population, employment, or housing trends; however, it is likely that the cost of water would increase due at least in part to the legal challenges and litigation that are expected if other water transfers are attempted. The precise economic impacts will depend on future decisions and legal actions; impacts are likely to be negative, but they cannot be determined at this time.	None.
Imperial Irrigation District. Potential for decrease in employment or adverse impacts to population and housing from construction and operation of water conservation measures.	See Colorado River.	Construction of the water conservation measures is not anticipated to result in a substantive reduction in agricultural production or the amount of land farmed, and therefore would not adversely impact employment. Construction and operation of new facilities would be located in agricultural areas, and this minor amount of construction would not impact population or housing. If the reduction in water use in the IID service area was accomplished solely through land fallowing, Imperial County could experience a net loss of 1,400 jobs, mostly in the agricultural sectors. Such a change would comprise just under 3 percent of the Year 2000 county employment level. Net agricultural sector job losses would total 1,300, representing about 12 percent of the total county agricultural employment. The net decrease in the value of business output is estimated to be $98 million. This represents approximately 2 percent of the estimated $4.8 billion total value of business output for Imperial County.

Table 2.5-1. Summary of Potential Impacts of the Execution of the IA, Adoption of the IOP, and Implementation of Biological Conservation Measures (Page 20 of 32)

Resource/Issue	*No Action*	*Impacts of Proposed Action/Alternatives*
SOCIOECONOMICS		
Coachella Valley Water District. Potential for adverse impacts to population trends and employment from an increased water supply to the CVWD service area and from construction and operation of new facilities.	See Colorado River.	The increased water supply to the CVWD service area would be used to offset the existing groundwater overdraft and would not change population trends or impact agriculture. Construction and operation of new facilities would be located in agricultural areas or along existing roadways, and this minor amount of construction would not impact population or housing.
Metropolitan Water District. No new construction or changes in the operation of existing facilities.	See Colorado River.	None.
San Diego County Water Authority. No new construction or changes in the operation of existing facilities.	See Colorado River.	None.
Salton Sea. Potential for adverse impacts to population trends and employment from decreased water levels and water quality of the Salton Sea.	Decreased water levels and increased salinity of the Sea would have negative impacts to the area's biological and recreational resources, which could adversely impact the local economy.	Decrease in water levels and decline in water quality would impact the fisheries and other recreational resources of the Sea, which may indirectly impact employment opportunities in the area. It could possibly lead to a reduction in population, depending on the severity of the impact. This potential loss of employment opportunities, while having social consequences, would not constitute a substantive change to the environment.
Inadvertent Overrun Policy		
Potential for change to population, housing or socioeconomics from potential payback requirements.	This alternative would not impact housing or population. Reclamation would enforce its obligations under the Decree, which may include reduced deliveries for those diverters that are projected to overrun based on their diversion rate and projected diversions for the remainder of the year, and/or stop deliveries for diverters that are at their entitlement amount. This could result in a short-term reduction in agricultural productivity,	Proposed IOP: This policy would impact agricultural uses in the IID service area. Payback measures could include fallowing in the IID service area, which could have a short-term impact on agricultural productivity, employment, and revenue during payback years. Given the comparatively small amount of water to be paid back, the overall impact would be minor. CVWD would likely reduce its recharge efforts during payback years,

Table 2.5-1. Summary of Potential Impacts of the Execution of the IA, Adoption of the IOP, and Implementation of Biological Conservation Measures (Page 21 of 32)

Resource/Issue	*No Action*	*Impacts of Proposed Action/Alternatives*
SOCIOECONOMICS		
Potential for change to population, housing or socioeconomics from potential payback requirements (cont.).	with associated economic impacts, in the IID service area, the extent of which is dependent upon the amount of water involved.	which would not impact the service area's economy. No aspects of the IOP would impact population or housing. No Forgiveness Alternative: Similar to proposed IOP.
Biological Conservation Measures		
Potential for change to population, housing or socioeconomics from restoration or creation of 44 acres of backwaters along the Colorado River between Parker Dam and Imperial Dam.	None.	Constructing or restoring backwaters would create a small, short-term increase in employment opportunities. This measure potentially could result in the loss of 44 acres of agricultural land, depending on the site(s) selected. This could result in the loss of some agricultural employment opportunities.
Potential for change to population, housing or socioeconomics from restoration or creation of up to 1,116 acres of southwestern willow flycatcher habitat along the Colorado River.	None.	Constructing or restoring habitat would create a small, short-term increase in employment opportunities. This measure potentially could result in the loss of up to 1,116 acres of agricultural land, depending on the site(s) selected. This could result in the loss of some agricultural employment opportunities.
ENVIRONMENTAL JUSTICE		
Implementation Agreement		
Colorado River. Potential for a disproportionate impact on any low-income and minority populations from decreased water levels of the Colorado River between Parker Dam and Imperial Dam.	None.	A slight lowering of the surface water elevation along the Colorado River between Parker and Imperial Dams would have an impact on biological resources. These changes would occur throughout this reach of the River, impacting each community in an approximately equal fashion, and would not have a disproportionate impact on any low-income and minority populations.

Table 2.5-1. Summary of Potential Impacts of the Execution of the IA, Adoption of the IOP, and Implementation of Biological Conservation Measures (Page 22 of 32)

Resource/Issue	*No Action*	*Impacts of Proposed Action/Alternatives*
ENVIRONMENTAL JUSTICE		
Imperial Irrigation District. Potential for a disproportionate impact on any low-income and minority populations from construction and operation of water conservation measures.	None.	Fallowing would result in job losses in the farm production and services sector, which would disproportionately impact minority and low-income people.
Coachella Valley Water District. Potential for a disproportionate impact on any low-income and minority populations from construction and operation of new facilities.	None.	None.
Metropolitan Water District. No new construction or changes in the operation of existing facilities.	None.	None.
San Diego County Water Authority. No new construction or changes in the operation of existing facilities.	None.	None.
Salton Sea. Potential for a disproportionate impact on any low-income and minority populations from decreased water levels and water quality of the Salton Sea.	None.	Windblown dust from exposed Salton Sea sediments would disproportionately affect Hispanic populations within one mile of the Salton Sea and also throughout the Salton Sea Air Basin.
Inadvertent Overrun Policy		
Potential for a disproportionate impact on any low-income and minority populations from potential payback requirements.	None.	Proposed IOP: Under the currently proposed policy, entities with Colorado River water diversion entitlements would not be eligible to take advantage of the IOP. The proposed policy does not, however, encroach upon those with diversion entitlements. Those with diversion entitlements could seek to enter into a consumptive use contract with Reclamation should they desire to utilize the IOP. No Forgiveness Alternative: Impacts would be as described for the proposed action.

Table 2.5-1. Summary of Potential Impacts of the Execution of the IA, Adoption of the IOP, and Implementation of Biological Conservation Measures (Page 23 of 32)

Resource/Issue	*No Action*	*Impacts of Proposed Action/Alternatives*
ENVIRONMENTAL JUSTICE		
Biological Conservation Measures		
Potential for a disproportionate impact on any low-income and minority populations from restoration or creation of 44 acres of backwaters along the Colorado River between Parker Dam and Imperial Dam.	None.	The locations of restoration sites have not yet been determined; however, the site locations would be determined based on hydrological and biological feasibility and the availability of the land. Because of the increased biological, aesthetic, and recreational values associated with habitat restoration, the primary impact of restoration activities would be beneficial. There would be no disproportionate impact on low-income and minority populations.
Potential for a disproportionate impact on any low-income and minority populations from restoration or creation of up to 1,116 acres of southwestern willow flycatcher habitat along the Colorado River.	None.	The locations of restoration sites have not yet been determined; however, the site locations would be determined based on hydrological and biological feasibility and the availability of the land. Because of the increased biological, aesthetic, and recreational values associated with habitat restoration, the primary impact of restoration activities would be beneficial. There would be no disproportionate impact on low-income and minority populations.
CULTURAL RESOURCES		
Implementation Agreement		
Impacts on historic properties between Parker and Imperial Dams within the River channel and in backwaters, lakes, and marshy areas having a direct connection to the River.	None.	The IA would not impact cultural resources.

Table 2.5-1. Summary of Potential Impacts of the Execution of the IA, Adoption of the IOP, and Implementation of Biological Conservation Measures (Page 24 of 32)

Resource/Issue	*No Action*	*Impacts of Proposed Action/Alternatives*
CULTURAL RESOURCES		
Inadvertent Overrun Policy		
Impacts on historic properties along the lower portion of the River; the precise area of potential impacts is to be determined at a later date.	None.	Proposed IOP: Impacts of the IOP are considered part of ongoing River operations. No Forgiveness Alternative: Impacts would be as described for the proposed action.
Biological Conservation Measures		
Impacts on historic properties within the historic floodplain of the River between Parker and Imperial Dams.	None.	Impacts of the biological conservation measures are to be determined at a later date, when site-specific information is available.
TRIBAL RESOURCES		
Implementation Agreement		
Colorado River. The IA could impact Tribal resources along the lower Colorado River through impacts on hydrology/water rights, water quality, biological resources, cultural resources, land use, or hydroelectric power.	Tribal Resources along the lower Colorado River would not be impacted. The structural projects embodied in the QSA that would help conserve Colorado River water, such as lining the AAC and the Coachella Canal, could lose $200 million in State funding and may not be implemented; therefore, there may not be water available from canal lining projects to facilitate implementation of the San Luis Rey Indian Water Rights Settlement Act.	The IA would facilitate the San Luis Rey Indian Water Rights Settlement, resulting in a beneficial impact to the La Jolla, Rincon, San Pasqual, Pauma, and Pala Bands of Mission Indians. Increased salinity levels at Imperial Dam would impact tribal lands located along the Colorado River between Parker Dam and Imperial Dam, but this increase falls within the normal range of fluctuations that occur along the reach. In addition, this impact would be fully mitigated by implementation of authorized salinity control projects. Impacts to biological resources would be avoided through implementation of the proposed biological conservation measures. Regarding hydroelectric power, a reduction in Headgate energy could impact BIA's ability to meet new Tribal energy demands. Reclamation has concluded that the water appropriated to non-CRIT entities, that flows through Headgate Rock Dam and generates power, is not an ITA, and Reclamation does not propose to mitigate or compensate for this reduced opportunity to produce power.

Table 2.5-1. Summary of Potential Impacts of the Execution of the IA, Adoption of the IOP, and Implementation of Biological Conservation Measures (Page 25 of 32)

Resource/Issue	*No Action*	*Impacts of Proposed Action/Alternatives*
	TRIBAL RESOURCES	
Coachella Valley Water District. Potential for adverse impacts to tribal resource from groundwater recharge.	No additional Colorado River water would be provided to CVWD, and overdrafted groundwater conditions would continue.	Groundwater recharge with Colorado River water is anticipated to have an adverse impact on the quality of groundwater extracted near the recharge basins in the Lower Coachella Valley because Colorado River water typically has higher concentrations of TDS and other chemical constituents than the local groundwater currently does. Recharge with Colorado River water could introduce low levels of perchlorate into the groundwater near the recharge basins. Groundwater recharge would affect the groundwater supply of the Torres Martinez Band of Desert Cahuilla Indians and the Agua Caliente Band of Cahuilla Indians. CVWD would work with the Tribes to bring the drinking water supply of the Tribes into compliance by either providing domestic water service or by providing appropriate well-head treatment should recharge of Colorado River water cause any drinking water well to exceed any recognized health based water quality standard.
Salton Sea. Potential for adverse impacts to tribal resources from decreased water levels and water quality of the Salton Sea.	Decreased water levels and increased salinity of the Sea would have negative impacts to the area's biological and recreational resources, and would expose currently inundated lands of the Torres Martinez Reservation.	Lowered water surface elevation of the Salton Sea would result in the exposure of Torres Martinez Band of Desert Cahuilla Indians' tribal land that is currently inundated by the Salton Sea. These exposed lands contain natural and cultural resources that are considered by the Tribe to be ITAs. Exposure could result in adverse impacts on cultural resources from vandalism and erosion. Flowage easements held over these lands by CVWD and IID would severely limit most economic development opportunities. The Tribe is quite concerned with any impact to the fishery resource or recreational economy. The Tribe also has expressed concern about increases in wind-blown dust from the exposure of lands previously inundated by the Salton Sea.

Table 2.5-1. Summary of Potential Impacts of the Execution of the IA, Adoption of the IOP, and Implementation of Biological Conservation Measures (Page 26 of 32)

Resource/Issue	*No Action*	*Impacts of Proposed Action/Alternatives*
TRIBAL RESOURCES		
Inadvertent Overrun Policy		
The IOP could impact Tribal resources along the lower Colorado River through impacts on hydrology/water rights, water quality, biological resources, cultural resources, land use, or hydroelectric power.	None.	Proposed IOP: Impacts to cultural resources are to be evaluated separately from this EIS. Regarding hydroelectric power, the IOP would have positive impacts on power production during overrun years and negative impacts during payback years. Power production at Hoover, Davis, Parker, and Headgate Rock Dams would be impacted. No Forgiveness Alternative: Impacts would be as described for the proposed action.
Biological Conservation Measures		
The Biological Conservation Measures could impact Tribal resources along the lower Colorado River through impacts on hydrology/water rights, water quality, biological resources, cultural resources, land use, or hydroelectric power.	None.	There could be a short-term impact to water quality associated with construction of habitat restoration sites. Potential short-term impact to biological and cultural resources could occur depending on the locations selected to implement the conservation measures. Regarding hydroelectric power, implementation of the biological conservation measures would have no impact on power generation.
AIR QUALITY		
Implementation Agreement		
Colorado River. Potential for increase in windblown fugitive dust emissions from decreased water levels of the Colorado River between Parker Dam and Imperial Dam.	None.	The amount of land exposed by decreased water levels is relatively small and some may become revegetated. Potential for increase in windblown fugitive dust emissions from these periodically dry lands would be minimal.

Table 2.5-1. Summary of Potential Impacts of the Execution of the IA, Adoption of the IOP, and Implementation of Biological Conservation Measures (Page 27 of 32)

Resource/Issue	*No Action*	*Impacts of Proposed Action/Alternatives*
	AIR QUALITY	
Imperial Irrigation District. Potential air quality impacts from construction and operation of water conservation measures.	There is a potential for water conservation measures to be implemented in the IID service area even if the IA and QSA were not implemented. This could result in air quality impacts that are similar to those described in the proposed action.	The impact of emissions from construction of on-farm water conservation measures and water treatment/reuse systems would not exceed any ambient air quality standard. Fugitive dust emissions from soil disturbances are considered to be within the realm of typical farm operations. Conservation measures also could include fallowing, which could result in a decrease in combustive emissions. Fallowed lands would no longer be subject to plowing and other agricultural activities that would create windblown dust, but the exposed area of the fallowed lands could in itself create some windblown dust.
Coachella Valley Water District. Potential air quality impacts from construction and operation of new facilities.	There is the likelihood that some of the facilities considered in the proposed action may still be constructed in the CVWD service area to accommodate other elements of the CVWMP not directly related to the IA and QSA. This could result in air quality impacts that are similar to those described in the proposed action. CVWD might undertake other actions to increase their overall water supply reliability. These actions might include increased water conservation, increased reliance on other water supplies, such as the State Water Project (SWP) or groundwater, or further development of new supplies through recycling or desalination. Some of these actions might require construction, which would have air quality impacts.	The impact of emissions from construction of new facilities would cause temporary impacts to local air quality and could exceed air emission thresholds established by the South Coast Air Quality Management District (SCAQMD) within the South Coast Air Basin (SCAB) project region. Mitigation measures for this impact will be identified in the Programmatic Environmental Impact Report (PEIR) being prepared by CVWD for the CVWMP or in project-level documents prepared for the construction of specific program components. Operation of facilities associated with implementation of the IA and QSA within the CVWD service area would have minimal impacts on air quality.

Table 2.5-1. Summary of Potential Impacts of the Execution of the IA, Adoption of the IOP, and Implementation of Biological Conservation Measures (Page 28 of 32)

Resource/Issue	*No Action*	*Impacts of Proposed Action/Alternatives*
	AIR QUALITY	
Metropolitan Water District. No new construction or changes in the operation of existing facilities.	The reliability of Colorado River water supplies would not be increased for MWD under this alternative, and this agency might undertake other actions to increase their overall water supply reliability. These actions might include increased water conservation, increased reliance on other water supplies, such as the SWP or groundwater, or further development of new supplies through recycling or desalination. Some of these actions might require construction, which would have air quality impacts.	None.
San Diego County Water Authority. No new construction or changes in the operation of existing facilities.	The reliability of Colorado River water supplies would not be increased for SDCWA under this alternative, and this agency might undertake other actions to increase their overall water supply reliability. These actions might include increased water conservation, increased reliance on other water supplies, such as the SWP or groundwater, or further development of new supplies through recycling or desalination. Some of these actions might require construction, which would have air quality impacts.	None.
Salton Sea. Potential increase in dust emissions from decreased water levels of the Salton Sea and potential increase in odorous emissions from decreased water quality of the Sea.	The Salton Sea is expected to decline from its current elevation under the No-Action Alternative (i.e., no water transfers). The soils along the Salton Sea shoreline have a moderate potential for wind-blown dust. Dust emissions from these areas would in part be due to the level of human disturbances, such as vehicle activities, or from subsequent wind erosion. The reduction of water flow into the Salton Sea could increase odorous emissions in proximity to this body of water.	IID would undertake conservation actions that have the potential to reduce inflows to the Salton Sea. Depending on how the conservation is accomplished, the impact on inflows from IID could range from essentially no change to a substantial reduction. Under most scenarios, the Salton Sea would shrink at a faster rate than under No Action. IID determined that the project would produce significant amounts of windblown dust from the exposed shoreline of the Salton Sea. IID proposes to implement a program to mitigate dust emissions that could occur from the exposed shorelines. IID

Table 2.5-1. Summary of Potential Impacts of the Execution of the IA, Adoption of the IOP, and Implementation of Biological Conservation Measures (Page 29 of 32)

Resource/Issue	*No Action*	*Impacts of Proposed Action/Alternatives*
	AIR QUALITY	
Salton Sea. Potential increase in dust emissions from decreased water levels of the Salton Sea and potential increase in odorous emissions from decreased water quality of the Sea (cont.).		indicates that a level of uncertainty would remain regarding whether or not the mitigation program would reduce short-term and long-term impacts from dust emissions that could occur from the exposed Salton Sea shorelines. This impact, therefore, remains potentially significant and unavoidable. Given the complexity of the interrelationship of phosphate inputs, water quantity, and water quality, it is not possible to quantify the effect the proposed action would have on odorous emissions in the Salton Sea. However, compared to the existing conditions and projected continuation of eutrophication conditions at the Salton Sea, the effects of the proposed action on odors is expected to be minimal.
Inadvertent Overrun Policy		
Potential air quality impacts from increases and decreases in the Colorado River flow during select portions of the 75-year time period.	None.	Proposed IOP: Implementation of the IOP would produce minimal air quality impacts to this region. If the IOP resulted in the need to fallow fields in the IID service area in order to conserve water to payback an overrun, this impact would generally produce a beneficial impact to air quality, as the elimination of cultivation from these areas would reduce the amount of fugitive dust generated from these areas; unless the fallowed soils were treated with a soil stabilizer, however, they would generate some windblown dust. No Forgiveness Alternative: Impacts would be as described for the proposed action.

Table 2.5-1. Summary of Potential Impacts of the Execution of the IA, Adoption of the IOP, and Implementation of Biological Conservation Measures (Page 30 of 32)

Resource/Issue	*No Action*	*Impacts of Proposed Action/Alternatives*
AIR QUALITY		
Biological Conservation Measures		
Potential increase in combustive emissions due to the use of fossil fuel-fired construction equipment and increase in fugitive dust emissions due to ground-disturbing activities from restoration or creation of 44 acres of backwaters along the Colorado River between Parker Dam and Imperial Dam.	None.	It is expected that the impact of emissions from construction activities would not exceed any ambient air quality standard. Implementation of fugitive dust control measures would effectively minimize PM10 emissions from these activities.
Potential increase in combustive emissions due to the use of fossil fuel-fired construction equipment and increase in fugitive dust emissions due to ground-disturbing activities from restoration or creation of up to 1,116 acres of southwestern willow flycatcher habitat along the Colorado River.	None.	It is expected that the impact of emissions from construction activities would not exceed any ambient air quality standard. Implementation of fugitive dust control measures would effectively minimize PM10 emissions from these activities.
TRANSBOUNDARY IMPACTS		
Implementation Agreement		
Potential changes to the probability and magnitude of excess flows to Mexico.	Hydrology. From years 2002 to 2026, the probability of excess flows varies from 20 to 25 percent. After 2030, the probability of flood flows decreases to 10 to 15 percent. The magnitude of flood flows varies from 0 to over 6 MAF, with large flood flows (over 250 KAF) anticipated approximately 20 percent of the time and flood flows over 1 MAF less than 15 percent of time.	Hydrology. The probability and magnitude of excess flows to Mexico is similar but occasionally higher under the IA.
Potential impacts to habitat and species in Mexico.	Biological Resources**.** It is anticipated that flood flow frequency and quantities would be reduced under the No-Action Alternative. This may result in some reduction of wildlife habitat through the reduction in flows reaching the Delta area. It is expected, however, that much of the existing habitat would remain as it is since most of the riparian habitat is composed of salt cedar, which would be fed by groundwater. No measurable impact is expected to sensitive marine species.	Biological Resources**.** The IA would result in a flood flow probability and magnitude that are generally equal to, or somewhat greater than, the No-Action Alternative. Therefore, this action would have no potential impact on any federally listed species in Mexico.

Table 2.5-1. Summary of Potential Impacts of the Execution of the IA, Adoption of the IOP, and Implementation of Biological Conservation Measures (Page 31 of 32)

Resource/Issue	*No Action*	*Impacts of Proposed Action/Alternatives*
	TRANSBOUNDARY IMPACTS	
Inadvertent Overrun Policy		
Potential changes to the probability and magnitude of excess flows to Mexico.	See *Hydrology* above.	Hydrology. Proposed IOP: The inadvertent overrun and payback policy does not apply to Mexico. However, actions undertaken by IOP users could affect excess flows to Mexico. The overall impact of the IOP would be to decrease both the probability of a flood release and the magnitude of a flood release. Combined, the IA and IOP reduce probability of a flood release by 1.2 to 3.5 percent in some of the years modeled. In the evaluation of the comparison of the differences in the observed excess flows below Morelos Dam between the No Action and the IA that considered an average Lower Basin Overrun Account Balance of 66 KAFY modeled conditions, in approximately 16 percent of instances where differences were observed, the differences were positive which represented an increase in the magnitude of excess flows. However, for the 75-year period of analysis, the average of the differences was a reduction of 35,811 AF. In the evaluation of the comparison of the differences in the observed excess flows below Morelos Dam between the No Action and the IA that considered a Lower Basin Overrun Account Balance of 331 KAFY modeled conditions, in approximately 11.7 percent of instances where differences were observed, the differences were positive which represented an increase in the magnitude of excess flows. However, for the 75-year period of analysis, the average of the differences was a reduction of 219,539 AF. No Forgiveness Alternative: Impacts would be as described for the proposed action.

Table 2.5-1. Summary of Potential Impacts of the Execution of the IA, Adoption of the IOP, and Implementation of Biological Conservation Measures (Page 32 of 32)

Resource/Issue	*No Action*	*Impacts of Proposed Action/Alternatives*
	TRANSBOUNDARY IMPACTS	
Potential impacts to habitat and species in Mexico.	See *Biological Resources* above.	Biological Resources**.** No substantive impacts to vegetation are anticipated. It is anticipated that impacts to fish and wildlife species within the Delta area and within the Sea of Cortez would be negligible or nonexistent. Habitat is expected to remain much as it is today, and there would be no appreciable change in habitat quality for fish and wildlife. The IOP would have no impact on special status species.
Biological Conservation Measures		
No biological conservation measures would be implemented downstream of Imperial Dam; thus, they would not impact water resources in Mexico.	None.	None.