SECTION 2.0

Description of the Proposed Project and Alternatives

SECTION 2.0

Description of the Proposed Project and Alternatives

2.1 Introduction

This section describes the Proposed Project and alternatives to the Proposed Project as required by CEQA and NEPA. The Proposed Project alternatives were developed in accordance with both NEPA and CEQA requirements for analysis of a reasonable range of alternatives (see Section 2.3). This Final EIR/EIS assesses the Proposed Project, including the HCP, and alternatives to the Proposed Project and HCP, as described below:

Proposed Project: Water Conservation and Transfer under two Scenarios:

- 130 to 300 KAFY to SDCWA (All Conservation Measures) (IID/SDCWA Transfer Agreement Implementation Only)
- Up to 200 KAFY to SDCWA and up to 100 KAFY to CVWD and/or MWD (QSA Implementation)

Implementation of the HCP (IID Water Service Area Portion)

Implementation of the HCP (Salton Sea Habitat Conservation Strategy)

Alternative 1: No Project

Alternative 2: Water Conservation and Transfer of Up To 130 KAFY to SDCWA (On-farm Irrigation System Improvements as Exclusive Conservation Measure)

Implementation of the HCP (IID Water Service Area Portion)

Implementation of the HCP (Salton Sea Habitat Conservation Strategy)

Alternative 3: Water Conservation and Transfer of Up To 230 KAFY to SDCWA, CVWD, and/or MWD (All Conservation Measures)

Implementation of the HCP (IID Water Service Area Portion)

Implementation of the HCP (Salton Sea Habitat Conservation Strategy)

Alternative 4: Water Conservation and Transfer of Up To 300 KAFY to SDCWA, CVWD, and/or MWD (Fallowing As Exclusive Conservation Measure)

Implementation of the HCP (IID Water Service Area Portion)

Implementation of the HCP (Salton Sea Habitat Conservation Strategy)

As noted in Section 1.1.1, this Final EIR/EIS does not include an analysis of the Habitat Conservation Plan Approach 1: Hatchery and Habitat Replacement, which was evaluated in the Draft EIR/EIS. This is because subsequent to issuance of the Draft EIR/EIS the resource agencies advised IID that Approach 1 likely would not meet the permit issuance criteria, and it was subsequently eliminated from the HCP. This is discussed in more detail in Section 2.2.6.7 below.

The Proposed Project is discussed in detail in Section 2.2. The water conservation and transfer alternatives are discussed in detail in Section 2.3. In accordance with NEPA requirements and CEQA guidelines, a wide range of alternatives was considered for the initial analysis. Appendix D includes a discussion of the methodology used to screen proposed alternatives and identify the alternatives to be assessed in this EIR/EIS. It also discusses the alternatives that were considered but eliminated from detailed assessment and the criteria used to make these determinations. A summary of the appendix is included in Section 2.3.

2.2 Proposed Project

This section includes a brief overview of the Proposed Project. After this overview, the following components of the Proposed Project are described in detail:

- Voluntary commitment by IID to limit to 3.1 MAFY its annual diversions of Priority 3 Colorado River water.
- Conservation by IID of water through the use of various measures (including fallowing) in the IID water service area for transfer to other agencies, IOP compliance, and mitigation.
- Water transfer from IID to SDCWA under the terms of the IID/SDCWA Transfer Agreement.
- Water transfer from IID to CVWD and/or MWD under the terms of the QSA.
- Change in the point of diversion of transferred water on the Colorado River and associated approvals needed from Reclamation.
- Implementation of the HCP.

2.2.1 Overview of the Proposed Project

The Proposed Project involves implementation by IID of a long-term water conservation program within IID's water service area in Imperial County, California to conserve up to 300 KAFY of Colorado River water, which IID would otherwise divert for use within its

water service area (see Section 1.4.3 in Section 1 for a discussion of IID's water rights). IID's water service area consists of approximately 500,000 acres and is shown on Figure 1-3 in Section 1. For a description of IID's water service area and operations, see Section 1.3.2 in Section 1.

Under the Proposed Project, water conservation would be undertaken in the IID water service area using one or more of the following measures:

- On-farm irrigation system improvements, including on-farm irrigation management techniques, which would be implemented by landowners and tenants within IID's water service area.
- Improvements by IID to its water delivery system.
- Subject to certain contractual limitations set forth in the IID/SDCWA Transfer Agreement, fallowing measures to conserve water.

Under the Proposed Project, the water transfers would occur in accordance with the terms of the IID/SDCWA Transfer Agreement (see Section 1.4.5 in Section 1) and, as an alternative scenario if the proposed QSA (see Section 1.4.7 in Section 1) is finalized and implemented, in accordance with the modified water transfers provided for under the terms of the QSA. The Proposed Project thus includes the conservation by IID of up to 300 KAFY of water, and transfer of that water under one of the following two scenarios:

- **IID/SDCWA Transfer Agreement Implementation Only**: Up to 300 KAFY are transferred to SDCWA pursuant to the terms of the IID/SDCWA Transfer Agreement. This scenario will apply if the QSA is not approved and implemented in its entirety.
- **QSA Implementation**: SDCWA would be limited to 130 to 200 KAFY from IID; CVWD would have the option of acquiring up to 100 KAFY of water conserved by IID, in two increments of 50 KAFY each, for use within CVWD's service area. In addition, the QSA grants to MWD an option to acquire all or any portion of this 100 KAFY that CVWD does not acquire, for use in MWD's service area. Under the proposed QSA, the terms of the transfer to SDCWA (130 to 200 KAFY) are governed by the IID/SDCWA Transfer Agreement; and the terms of the proposed water transfers to CVWD and MWD are set forth in acquisition agreements to be executed between IID and each recipient. This scenario will apply if the QSA is approved and implemented in its entirety.

Under either scenario, an implementation agreement would be required to commit the Secretary to deliver conserved water to its recipients. The water conserved by IID would be transferred to SDCWA, CVWD, and/or MWD, for use within the recipients' respective service areas. For a detailed description of SDCWA's, CVWD's, and MWD's service area, see Section 1.3 and Figure 1-1 in Section 1.

Under the terms of the IID/SDCWA Transfer Agreement and the QSA, and as part of the Proposed Project, IID would voluntarily limit its annual diversions of Priority 3 Colorado River water to 3.1 MAFY, including the water conserved for transfer, subject to certain adjustments set forth in the agreements. Under the QSA, this commitment is subject to implementation by Reclamation of its proposed IOP, which would allow IID to pay back inadvertent exceedances of this diversion cap over one or more succeeding years.

This EIR/EIS provides the environmental analysis required under NEPA and CEQA to issue federal and state approvals for the Proposed Project. To comply with ESA and CESA, and to support issuance of state and federal incidental take authorizations required to implement the Proposed Project, IID, in consultation with USFWS and CDFG, has prepared an HCP to address impacts to species and habitats within the IID water service area, the right-of-way of the AAC, and the Salton Sea (see Appendix C). This EIR/EIS is intended to provide the environmental analysis required under NEPA and CEQA to support issuance of incidental take permits by USFWS under ESA Section 10 and by CDFG under CESA Section 2081, for species and activities covered by the HCP. In addition, this EIR/EIS provides the environmental analysis required under CEQA to support issuance of incidental take permits by CDFG under Section 2081, for impacts to state-listed species along the LCR.

This EIR/EIS also provides the environmental analysis required by SWRCB for its approval of IID's water conservation and transfers (see Section 1.7.2 in Section 1). Other environmental analyses that are related to implementation of the Proposed Project are described in Section 1.5.

2.2.2 IID's Voluntary Cap on its Colorado River Water Diversions and Reclamation's Inadvertent Overrun and Payback Policy

This section discusses IID's voluntary commitment under the QSA and IID/SDCWA Transfer Agreement to limit its Priority 3 Colorado River water diversions to 3.1 MAFY, subject to certain adjustments set forth in each agreement and including amounts transferred under each agreement (see Appendix A). If the Proposed Project is implemented under the first scenario (IID/SDCWA Transfer Agreement Implementation Only), the consensual cap specified in the IID/SDCWA Transfer Agreement will apply. If the Proposed Project is implemented under the second scenario (QSA Implementation), the consensual cap specified in the QSA will apply. For ease of reference, IID's cap is described in this EIR/EIS as 3.1 MAFY, but it is intended to include the adjustments provided for under the applicable agreement.

The IA, which implements the QSA, would commit the Secretary to deliver water to IID in conformance with the consensual cap on IID's diversions set forth in the QSA. Execution of the QSA is contingent upon execution by the Secretary of the IA. The IA is a federal action that is being assessed by Reclamation, along with certain related actions, in the IA EIS (see Section 1.5.3). This EIR/EIS summarizes and incorporates by reference the analysis of the IA set forth in the IA EIS. The assessment of the Proposed Project in this EIR/EIS under the scenario that includes QSA implementation assumes that the IA is in place.

Under the terms of the QSA, IID's agreement to limit its diversions is contingent upon Reclamation's adoption of the proposed IOP, which would establish procedures to pay back inadvertent exceedances of its diversion cap over one or more succeeding years. Adoption of the IOP is a federal action that is being assessed by Reclamation in the IA EIS (see Section 1.5.3). This EIR/EIS does not assess the impacts of the IOP; however, because the IOP is anticipated to be in place, this EIR/EIS assesses IID's compliance with the IOP in connection with implementation of the Proposed Project.

2.2.2.1 IID's Voluntary Cap on its Priority 3 Colorado River Water Diversions

Water that is conserved by IID and transferred under the Proposed Project to SDCWA, CVWD, and/or MWD would constitute a portion of the Colorado River water that IID is entitled to divert under its Priority 3 Colorado River water right (see Section 1.4.3 for additional discussion of IID's water rights). Under the IID/SDCWA Transfer Agreement and the QSA, IID would agree to limit its consumptive use of Colorado River water under Priority 3a to 3.1 MAFY for the term of the Proposed Project. This consensual limitation of Priority 3a consumptive use constitutes a forbearance of IID's right to divert, for reasonable and 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 under the Seven Party Agreement. This forbearance increases the certainty of Colorado River water availability to CVWD and facilitated the participating agencies' agreement on the proposed QSA terms.

The effect of the cap on IID's diversions is greater under the second scenario for the Proposed Project (QSA Implementation). Under the QSA, IID's total Colorado River water use would be reduced by an amount between 410 and 490 KAFY (including conservation under the Proposed Project and the existing 1988 IID/MWD Agreement – see Table 2-1), leaving between 2.69 and 2.61 MAFY of Priority 3a Colorado River water for consumptive use by IID. As part of the QSA, proposed annual Colorado River water budgets were developed for IID, CVWD, and MWD. The QSA water budgets in a normal year (a year when 4.4 MAF are available for use within California) are shown in Table 2-1. IID's proposed water budget is shown specifically in Table 2-2.

2.2.2.2 Reclamation's Inadvertent Overrun and Payback Policy

Under the QSA, IID's commitment to limit its Priority 3 diversions of Colorado River water is subject to implementation by Reclamation of its proposed IOP, which would allow IID to pay back inadvertent exceedances of this diversion cap over one or more succeeding years. The IA EIS defines the IOP as the following:

> 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 and deemed to be beyond the control of the water user. The IOP applies to all quantified Colorado River water entitlements in the Lower Division states and can only be applied to quantified consumptive use entitlements or entitlements that would take the remaining quantity of a State's fixed apportionment… 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 (Reclamation 2002).

Therefore, in addition to the level of water conservation required under the Proposed Project's second scenario (QSA Implementation) to implement the transfers to SDCWA, CVWD, and/or MWD, IID's water conservation program (see Section 2.2.3), could include additional conservation (an annual average of approximately 59 KAFY) to ensure compliance with the cap on IID's Priority 3 diversions and/or the IOP. Under the Proposed Project's first scenario (IID/SDCWA Transfer Agreement Implementation Only), IID would be limited to its legal diversions and would need to implement additional conservation measures to avoid any exceedances. The IOP is further described in Reclamation's IA EIS.

TABLE 2-1
Annual Colorado River Water Budgets with Implementation of the QSA[1]

Water Budget (< > indicates water transfer to others)	Budget Cap and Adjustments
	IID
3,100 KAF	Priority 3 Water Use Cap
< 100 to 110 KAF >	To MWD per the IID/ MWD 1988 Agreement
< 130 to 200 KAF >	To SDCWA – Transfer of conserved water
< 56.2 KAF >	To MWD as part of the AAC Lining Project[1]
< 11.5 KAF >	To San Luis Rey Indian Water Rights Settlement parties via MWD as part of the AAC Lining Project
< 100 KAF >	To CVWD and/or MWD– Transfer of conserved water
< 11.5 KAF >	For Miscellaneous and Federal Present Perfected Rights[2]
2,610 to 2,690 KAF	Net Annual IID Water Budget
	CVWD
330 KAF	Priority 3 Water Use Cap
< 21.5 KAF >	To MWD: Coachella Canal Lining Project
< 4.5 KAF >	To San Luis Rey Indian Water Rights Settlement parties via MWD: Coachella Canal Lining Project
20 KAF	From MWD– Per Revised Terms of the 1989 Approval Agreement
100 KAF	From IID – Transfer of conserved water
35 KAF	From MWD– Exchange of SWP and Colorado River water
< 3 KAF >	To account for Miscellaneous and Federal Present Perfected Rights[3]
456 KAF	Net Annual CVWD Water Budget
	MWD
550 KAF	Priority 4 Water Use Cap
100 – 110 KAF	KAF From IID – IID/MWD 1988 Agreement (existing conservation)
< 20 KAF >	To CVWD – Per Revised Terms of the 1989 Approval Agreement
56.2 KAF	From IID: All-American Canal Lining Project
21.5 KAF	From CVWD: Coachella Canal Lining Project
< 35 KAF >	To CVWD – Exchange of SWP and Colorado River water
< 47 + KAF >	To account for Miscellaneous and Federal Present Perfected Rights[4]
625 – 635 KAF	Net Annual MWD Water Budget

Source: Reclamation 2002
Notes:
[1] This table is from Reclamation's IA EIS, which is incorporated into this EIR/EIS by reference. The IA commits the Secretary to deliver Colorado River water in conformance with certain terms of the QSA. Further information on this table can be found in the IA EIS.
[2] At IID's option, this forbearance could be charged to IID's water rights under Priorities 6, 7, or 3, as available.
[3] At CVWD's option, this forbearance could be charged to CVWD's water rights under priorities 6, 7, or 3, as available.
[4] At MWD's option, this forbearance could be charged to any water available to MWD in that year.

TABLE 2-2
IID's Proposed Water Budget under the QSA

Water Budget (< > indicates water transfer to others)	Budget Cap and Adjustments	Additional Notes
3,100 KAF	Priority 3 Water Use Cap	
< 100 to 110 KAF >	To MWD per the 1988 IID/MWD Agreement	The 1988 IID/MWD Agreement is described in Section 1.4.4. Under this agreement, MWD is entitled to request and divert from the Colorado River an amount equal to the amount of water conserved by certain conservation projects paid for by MWD, estimated to range from 100 to 110 KAFY. Water began to be available under this agreement in 1990; the project reached full implementation in 1998. The impacts of the 1988 IID/MWD Agreement were addressed in a previous environmental assessment.
< 130 to 200 KAF >	To SDCWA – Transfer of conserved water	Transfer of conserved water to SDCWA is described in Section 2.2.4.1 in this EIR/EIS.
< 56.2 KAF >	To MWD as part of the AAC Lining Project[1]	The AAC Lining Project is described in Section 1.5.2 and in Section 5.1 in this EIR/EIS.
< 11.5 KAF >	To San Luis Rey Indian Water Rights Settlement parties via MWD as part of the AAC Lining Project	The San Luis Rey Indian Water Rights Settlement Act, enacted by Congress in 1988 as amended in 2000 (Title I of Public Law 100- 675), authorized a settlement of water rights claims to San Luis Rey River water. 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 conserved by the Coachella Canal lining project. Environmental compliance is provided for in the IA EIS, Coachella Canal Lining Project Final EIR/EIS, and the AAC Lining Project Final EIR/EIS. Use of the water by certain settlement parties (the La Jolla, Pala, Pauma, Rincon and San Pasqual Bands of Mission Indians) will require additional environmental analysis.
< 100 KAF >	To CVWD and/or MWD – Transfer of conserved water	Transfer of conserved water to CVWD and/or MWD is described in Section 2.2.4.2 of this EIR/EIS.
< 11.5 KAF >	For Miscellaneous and Federal present perfected rights	The QSA provides for IID's forbearance of use of 11.5 KAFY of Colorado River water to satisfy, at DOI's request, certain miscellaneous and Indian present perfected rights (see Section 1.4.2 of this EIR/EIS) to Colorado River water. The 11.5 KAFY covered by IID's forbearance described above could be charged against IID's Priority 3, 6, or 7 water rights, at IID's option. To the extent the 11.5 KAFY is provided from IID's Priority 3 water right, that amount is included in the diversions subject to IID's contractual limitation on its Priority 3 diversions of Colorado River water at 3.1 MAFY, as described above and in the QSA.
2,610 to 2,690 KAF	Net Annual IID Water Budget	

Source: Reclamation 2002
Notes:
[1] In surplus years (as defined in the IA EIS), IID would have a right to use this water with certain restrictions.

2.2.3 IID's Water Conservation Program

2.2.3.1 Water Conservation Program Overview

To meet IID's obligations under the Proposed Project, IID would select water-conservation measures for its service area, which may include:

- On-farm irrigation system improvements, including on-farm irrigation management techniques, which would be implemented by landowners and tenants within IID's water service area.
- Water improvements by IID to its water delivery system.
- Subject to certain contractual limitations set forth in the IID/SDCWA Transfer Agreement, fallowing measures to conserve water, which would be implemented by landowners and tenants within IID's water service area and/or IID.

IID's ability to implement a water conservation program will vary over time, depending on the availability and feasibility of water delivery system improvements, the extent of participation of IID water service area landowners and tenants, variations in climate and hydrological conditions, changes in agricultural economics, changes in technology, and other factors that are not within IID's control. Because of the need for variability and flexibility, the water conservation program under the Proposed Project includes a broad range of conservation measures that could be implemented in various combinations, and the program could change from year to year, or even from agricultural season to season, over the term of the Proposed Project. Therefore, the water conservation program assessed in this EIR/EIS includes conservation measures that are predicted to yield the minimum and maximum reasonable case environmental impacts, so that the range of the type and severity of potential impacts can be understood. The specific components of the water conservation program will be determined by the IID Board and could vary over time, but the impacts will be encompassed within the ranges assessed in this EIR/EIS. Section 2.2.3.5 contains additional information about the administration of IID's proposed water conservation program.

The following discussion describes currently available water conservation measures that can be implemented using existing technology. Other measures could be introduced from time to time during the term of the Proposed Project and included as part of the conservation program as long as the range of environmental impacts is covered by the analysis included in this EIR/EIS.

2.2.3.2 On-farm Irrigation System Conservation Measures

This section describes the ways in which landowners or tenants in the IID water service area could conserve water by installing new on-farm irrigation system improvements or by employing on-farm irrigation management techniques. All on-farm irrigation system improvements achieve water conservation by making on-farm irrigation more efficient. This means that less water would be diverted at the farm's headgate to meet crop water needs; if crop water needs are met with less water, drainage (tail water) will be reduced. On-farm irrigation conservation measures, as well as associated construction activities, are described in Table 2-3. They are also illustrated in Figures 2-1(a) through 2-1(c).

TABLE 2-3
On-farm Irrigation System Conservation Measures

Conservation Measure	Description	Construction Activities[1]
Tailwater Return System (TRS)	Pumps surface irrigation tailwater back to the head ditch, thereby reducing both the delivery requirement and the volume of water discharged to IID drain(s). The use of a TRS to achieve water conservation is most applicable for soils with relatively low infiltration rates; approximately 75 percent of farms in the IID water service area have soils that meet this criterion. Some or all of the tailwater is captured and pumped to the same field or another field for reuse, thereby achieving water conservation.	TRS consists of three basic constructed components: a pond (typically 4 acre feet [AF] in capacity), a pumping plant (typically 3 to 4 cfs capacity), and a 12"-diameter pipeline. Pond: Typically a 1- to 3-acre surface pond with a 4' excavation is used. Excavated soil could be spread on fields or used to elevate farm roads. Drop Boxes and Culverts: Excavation to install drop boxes and culverts along roads and pond (6' deep by 13' wide). Pumping Plant: Mounted on manhole installed 8' deep. Diesel pumps fenced, electric pumps not fenced. Pipeline, 12" diameter: Installed by digging a trench (4' deep); applying bedding to protect pipe; backfilling trench.
Cascading Tailwater	Allows tailwater to cascade by gravity to the head ditch of a lower field adjacent to the tailwater ditch. Some or all of the tailwater can be reused by the lower field, thereby achieving water conservation.	Cascading tailwater can be accomplished by placing drainpipes with drop-box inlets through embankment between fields, just upstream of each head ditch check. Drainpipe with Drop Box: Section of the existing concrete-lined head ditch would be removed. Excavated soil would be required to install drainpipe (4' to 5' depth). Drop box would be installed between the tailwater ditch and the adjacent field's head ditch.
Level Basins	Divides field into level basins and floods each basin at a relatively high flow rate. Irrigation water is applied to a uniform depth across each basin and immediately shut off with little or no tailwater resulting. Conservation is thereby achieved by reducing or eliminating tailwater by using a more efficient crop water delivery system.	In most cases, removal of the existing head ditch would be required prior to leveling. Fields would be divided into basin sizes based on infiltration rate of the soil. Each field would then be leveled and berms (approximately 2' high) would be created around each basin. Concrete-lined ditch would be constructed by compacting earth fill to form a pad and then excavating the ditch. The area would be graded, and concrete lining would be applied (1.5" thick). Sections of the ditch would be left unlined, and gates (to control water flow) would be placed by hand. Remaining unlined portions of the ditch would then be lined by hand.

TABLE 2-3
On-farm Irrigation System Conservation Measures

Conservation Measure	Description	Construction Activities[1]
Shorten Furrows/ Border Strips	Distribution uniformity of furrow and border strip irrigation can be improved by shortening the length of irrigation runs. This is typically accomplished by adding a new head ditch in the middle of a half-mile-long field, thus dividing it into two quarter-mile fields. Water can be supplied to the new head ditch by using a new carry ditch down the side of the field or by constructing a new farm gate on the lateral. To fill the crop's root zone at the bottom end of a long field, long water run times are required, which causes more infiltration at the upper end of the field than needed by the crop's root zone and more tailwater at the lower end of the field. If the field length or irrigation run is shortened, water running and soil contact times are shortened at the upper end of the field, which reduces tailwater and infiltration losses. Conservation is thereby achieved by reducing or eliminating tailwater using a more efficient crop water delivery system.	Construction of a concrete-lined ditch (same method as above) and new carry ditch or a new farm gate. Construction of a new carry ditch (if lined, it would be accomplished by method above; if unlined, construction would be accomplished by method above, without concrete lining). 1) If sufficient elevation is available in the lateral, a new delivery can be added to IID water delivery system and to a 0.50 mile of concrete irrigation head ditch installed by the farmer. 2) If water is not available and the cost of new delivery gate is prohibitive, a 0.25 mile carry ditch can be used to connect to delivery ditch. Remove a section of the existing concrete-lined head ditch after saw cutting (when head ditch is dry). Excavator would remove section from concrete lateral and excavate area for new gate, install the gate, pour concrete to stabilize the gate, and backfill.
Narrow Border Strips	Narrowing the width of border strips can improve distribution uniformity along the length of fields by increasing advance time and depth of flow. This measure conserves water in exactly the same manner as shortened Furrows/Border Strips by reducing or eliminating tailwater using a more efficient crop water delivery system.	Construction involves adding additional outlets to head ditch, and removing a section of the existing concrete ditch with a backhoe after saw cutting when the head ditch is dry. Excavate soil for pipe placement (2' to 3' deep) and backfill trench. Outlet pipe is 12" in diameter and has a gate to control water flow onto the field. Pouring concrete stabilizes the new pipe and gate.
Laser Leveling	Achieves a uniform mainfall and sidefall in a field to enhance the distribution uniformity of applied water. More efficient water application is achieved by creating uniform field slopes, which in turn cause a more uniform field-wide irrigation water application. Conservation is achieved by reducing or eliminating tailwater using a more efficient crop water delivery system.	Laser leveling is accomplished with a laser-guided scraper.

TABLE 2-3
On-farm Irrigation System Conservation Measures

Conservation Measure	Description	Construction Activities[1]
Multi-Slope	For furrow and border strip irrigation, distribution uniformity can be improved by varying the slope of the field so the head of the field has a greater slope than the end of the field. This measure conserves water in exactly the same manner as shortened Furrows/Border Strips by decreasing the water soil contact time at the upper end of the field by increasing water velocity due to a steeper slope at the upper end of the field. Tailwater is reduced by a flatter slope at the bottom end of the field, which increases the water/soil contact time for better crop root zone infiltration. Conservation is achieved by reducing or eliminating tailwater by using a more efficient crop water delivery system.	Construction involves changing the slope of the field by grading land so that grade is steeper near head ditch and gradually gets less steep at the end of the field.
Drip Irrigation	Water is run through drip tubing, which consists of pipes with small holes. The drip tubing is either buried or lies above the ground next to the crop. Water slowly drips out at a slow rate to irrigate crop. In general, drip irrigation reduces the losses of water to deep percolation, evaporation and field runoff by its ability to control the amount of water applied to the root zone of the crop. Conservation is achieved by reducing or eliminating tailwater by using a more efficient crop water delivery system.	The installation of a drip irrigation system involves the construction of four components: a reservoir, a pumping system, a filtration system, and a distribution system. Reservoir construction is the same as it is for TRS (although the reservoir would be located at head of the field). The purpose of the reservoir is to store irrigation water that will be pumped out and applied to the field. Reservoir size (4’ to 5’ deep and 15’ to 25’ wide) varies by farm size and farmer method. Soil excavated from the pond would be compacted and used to form an embankment (3’ high) around the pond. Pumping system construction similar to TRS. Manhole adjacent to reservoir, constructed like TRS system, to pump water to the filtration system. Filtration system composed of 5’- to 6’- high sand filters. Excavate 2’ deep and pour concrete pad. Install three to five filters on top of the concrete pad. Network of pipes ranging from 3” to 12” diameter form the distribution system throughout field; total of approximately 1.5 miles, or 8,000 feet, of pipe exist for each 80-acre section. Dig trench by excavating 3’, lay pipe, and backfill. Length of drip emitter tube dependent on crop type and type of emitter – subsurface tube laid with tractor that digs trench and lays tube all at once; surface drip tube laid by hand.

TABLE 2-3
On-farm Irrigation System Conservation Measures

Conservation Measure	Description	Construction Activities[1]
Cutback[2]	Cutback irrigation is initiated with a high flow rate to advance the water down the field as quickly as possible without causing erosion. When the water reaches a predetermined distance down the field, the flow is reduced to minimize tailwater, resulting in improved uniformity. Conserves water in exactly the same manner as shortened Furrows/Border Strips by reducing the water/soil contact time at the upper end of the field. Conservation is achieved by reducing or eliminating tailwater by using a more efficient crop water delivery system.	Cutback irrigation is accomplished by controlling the flow rates of water advancing down a field. This is an on-farm irrigation management technique. There are no on-farm construction activities associated with this technique.

Notes:
[1] Construction information is for a standard design profile based on typical construction scenarios.
[2] Cutback is an on-farm irrigation management technique. On-farm irrigation management techniques, which do not require physical improvements to on-farm or water delivery facilities, generally consist of improvements to the supervision and administration of existing on-farm systems, including irrigation scheduling, water measurement, soil moisture measurement, and use of additional farm labor. On-farm irrigation management techniques would also require use of soil-moisture measurement devices and climatic monitoring station data from existing IID water service area stations.


Table of Contents


Continue

Laser Leveling

USDA NRCS Practice Code 466

Multi-Slope

USDA NRCS Practice Code 464

Drip Irrigation

USDA NRCS Practice Code 441

Figure 2-1a
On-farm Conservation Measures
IID Water Conservation and Transfer Project Final EIR/EIS

Tailwater Return or Pump Back System

USDA NRCS Practice Code 447

Shorten Furrow or
Border Strips,
Narrow Border Strips

USDA NRCS Practice Code 388

Figure 2-1b
On-farm Conservation Measures
IID Water Conservation and Transfer Project Final EIR/EIS

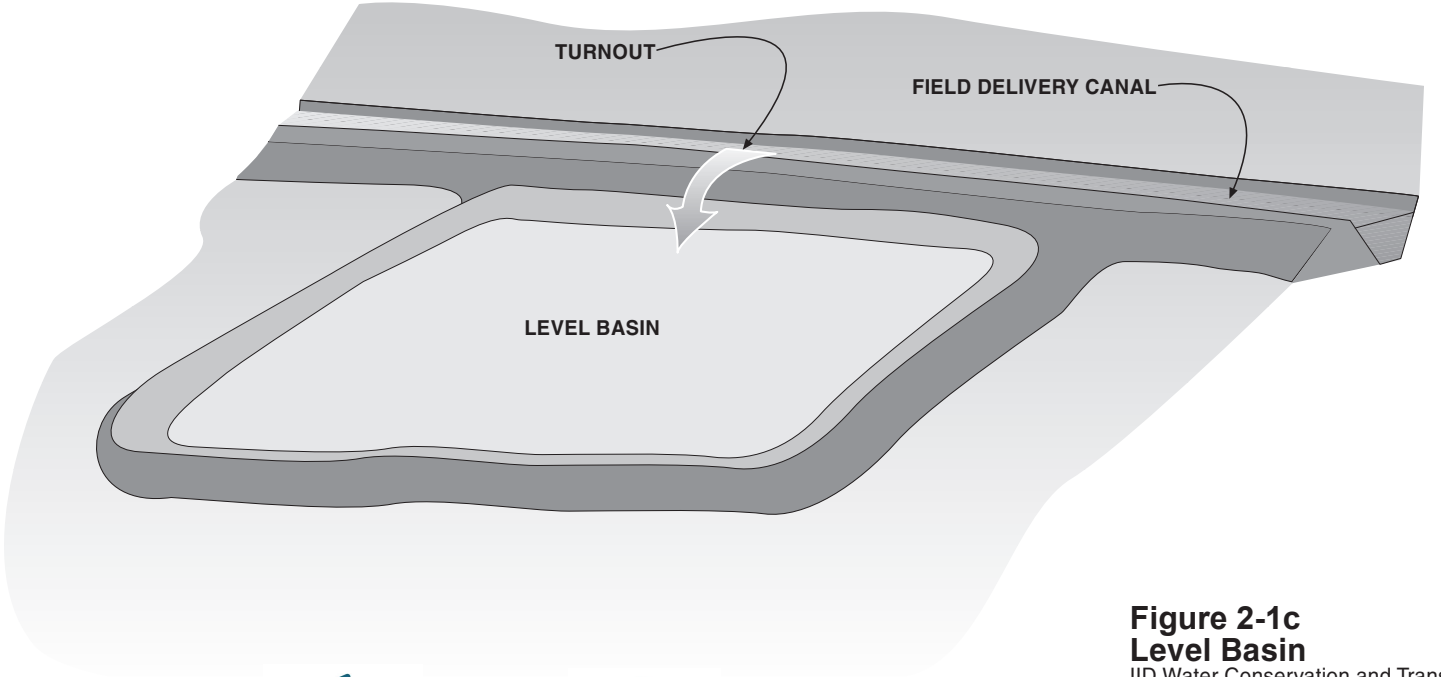


Figure 2-1c
Level Basin
IID Water Conservation and Transfer Project Final EIR/EIS

2.2.3.3 Water Delivery System Conservation Measures

This section describes the ways in which IID could conserve water by modifying the infrastructure of its water delivery system. Water delivery system conservation measures and associated construction activities are listed in Table 2-4. Figures 2-2(a) through 2-2(c) illustrate the water delivery system conservation measures. Figure 2-3 shows existing lateral interceptor systems and reservoirs, Figure 2-4 shows proposed lateral interceptor systems and reservoirs, Figure 2-5 shows existing and proposed seepage recovery systems, Figure 2-6 shows existing conveyance lining facilities, and Figure 2-7 shows proposed conveyance lining facilities.

TABLE 2-4
Water Delivery System Conservation Measures

Conservation Measure	Brief Description	Construction Activities[1]
Lateral Interceptor System	Collects operational discharge from a lateral canal into a new canal. Stores collected water in reservoir until water is needed.	Construction typically requires a 50' easement. Fill dirt is imported to construct a 40'-wide embankment, and the remaining 10' are quitclaimed back to the property owner. Four main construction steps: Raise existing concrete lining (~1') at ends of laterals; construct new interceptor channel; construct reservoir (approximately 300 to 400 AF) with pump station; install pipeline. Reservoir construction is described below under Mid-Lateral Reservoir.
Mid-Lateral Reservoir	Small reservoirs are located along lateral canals to balance high to low flow fluctuations.	Construction of small reservoirs (2 to 10 acres) at critical locations along the lateral canal system, typically planned for locations one-half to two-thirds of the way down the lateral; installation of a pump station 2 to 5 cfs, low head, high volume, mix or axle flow, single stage, oil lube pump, 15-horsepower motor; and installation of structure and measuring devices, including reservoir inlet, inlet gate, reservoir outlet, and slide gate.
Regulating Reservoir	Used to match demand flows to delivery flows. Conservation is achieved by reduction in operational discharge.	Construction of a regulating reservoir is similar to construction of Mid-Lateral Reservoirs (see above). Typical size is 30 to 40 acres.
Seepage Interceptor	Conserves water by collecting canal leakage and/or seepage in surface or subsurface collector pipes along a canal, then pumps the water back into the same canal.	For surface drains, a check structure is placed at a location where the drain turns away from the water delivery canal. The seepage water is returned to the canal with the installation of a collector sump, pump, and pipeline. For subsurface drains, a collector sump, pump, and underground pipeline are installed.
Conveyance Lining	Lining sections of earthen canals that show seepage with concrete or use of pipelines to reduce that seepage.	Three typical components to construction: Preparation of existing channel and pad preparation (2' to 6' bottom); trenching and lining; hand-forming transitions at check structure with delivery.

Notes:
[1] Construction information is for a standard design profile based on typical construction scenarios.

2.2.3.4 Fallowing

Fallowing is defined, in broad terms, as the non-use of farmland for crop production during the growing season. This definition covers varied methods of implementation. Fallowing can be implemented for different time periods. For example, a field could be removed from production on a non-rotational basis (i.e., for 4 years or more), or production could cease temporarily or periodically (i.e., rotational fallowing) for one or more growing seasons (less than 4 years), or for one or more crops.

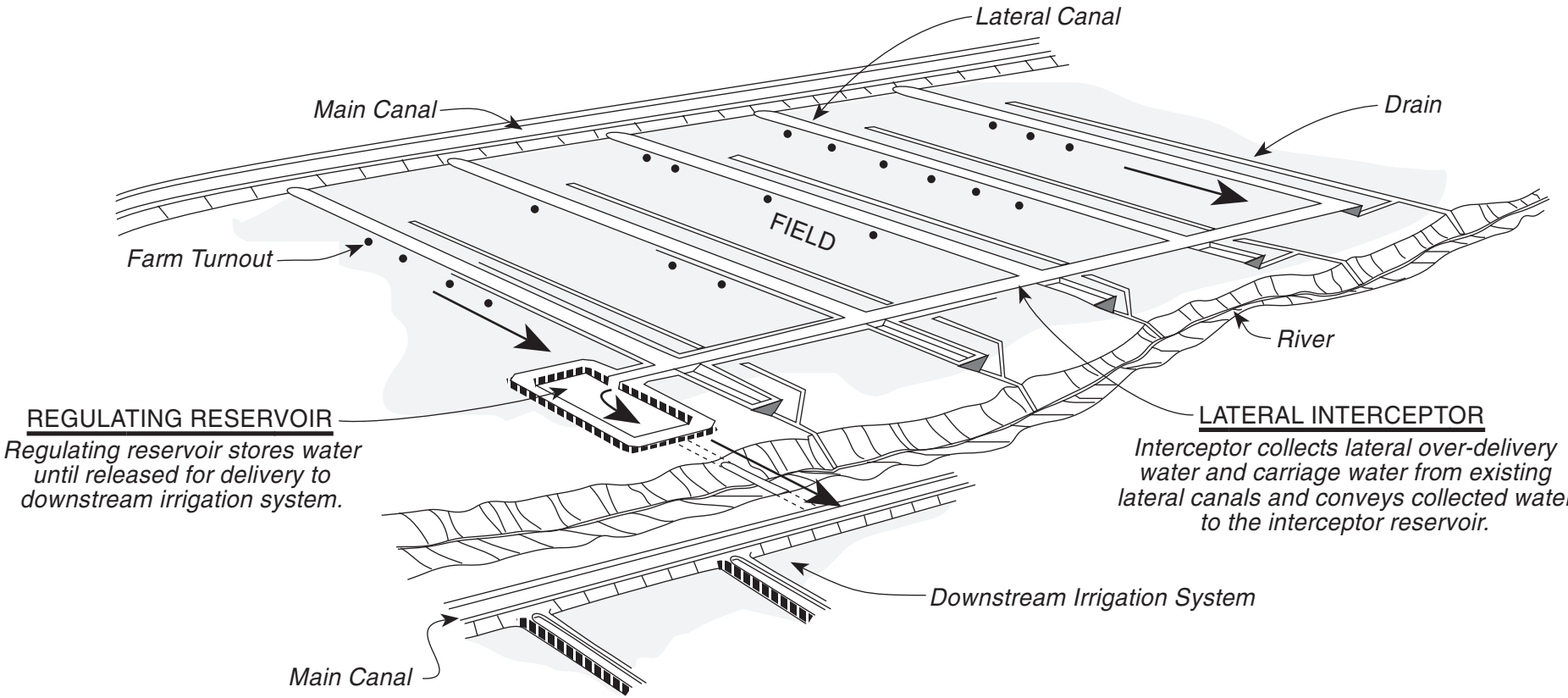
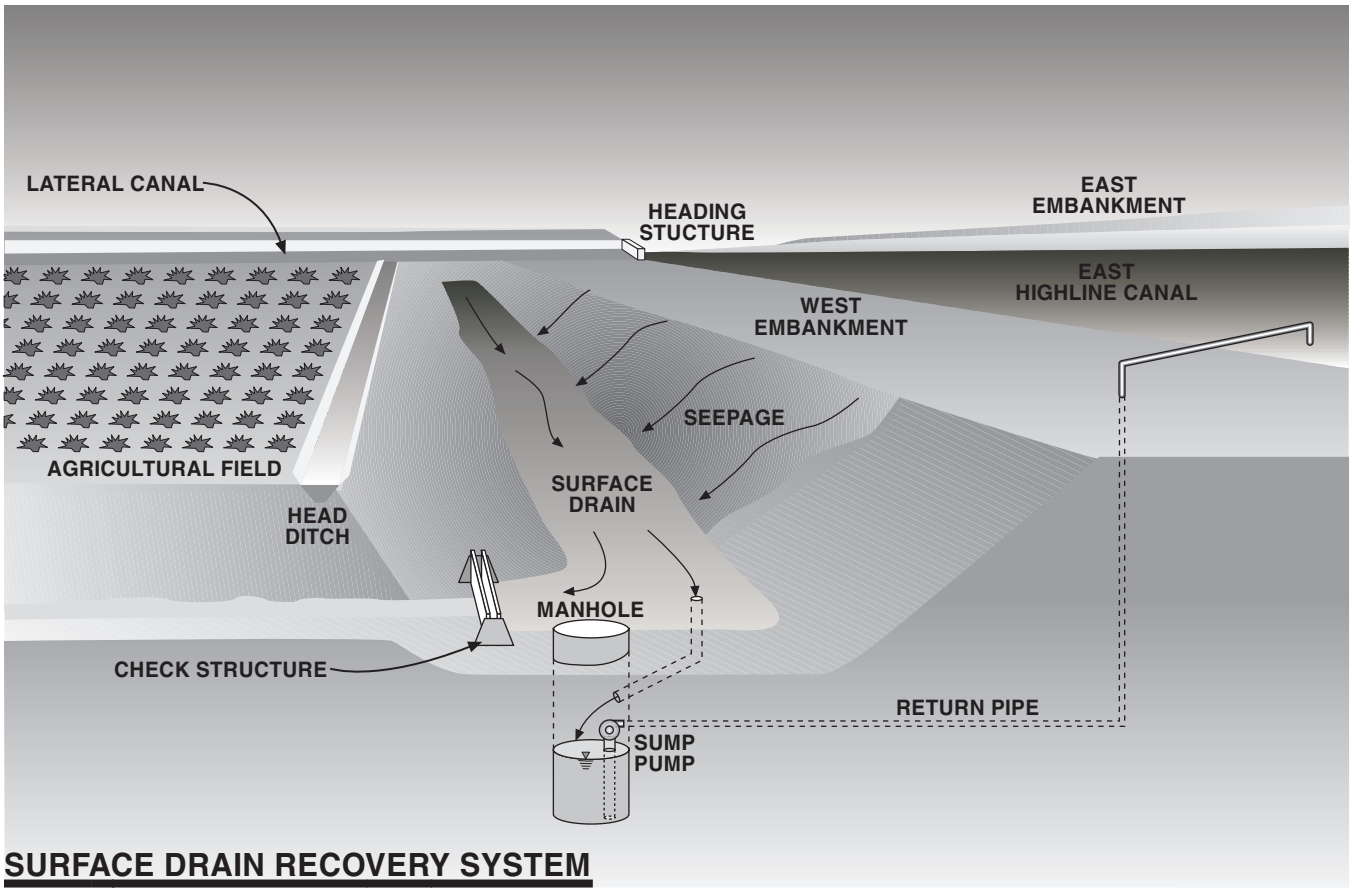


Figure 2-2a
Conceptual Lateral Interceptor System
IID Water Conservation and Transfer Project Final EIR/EIS



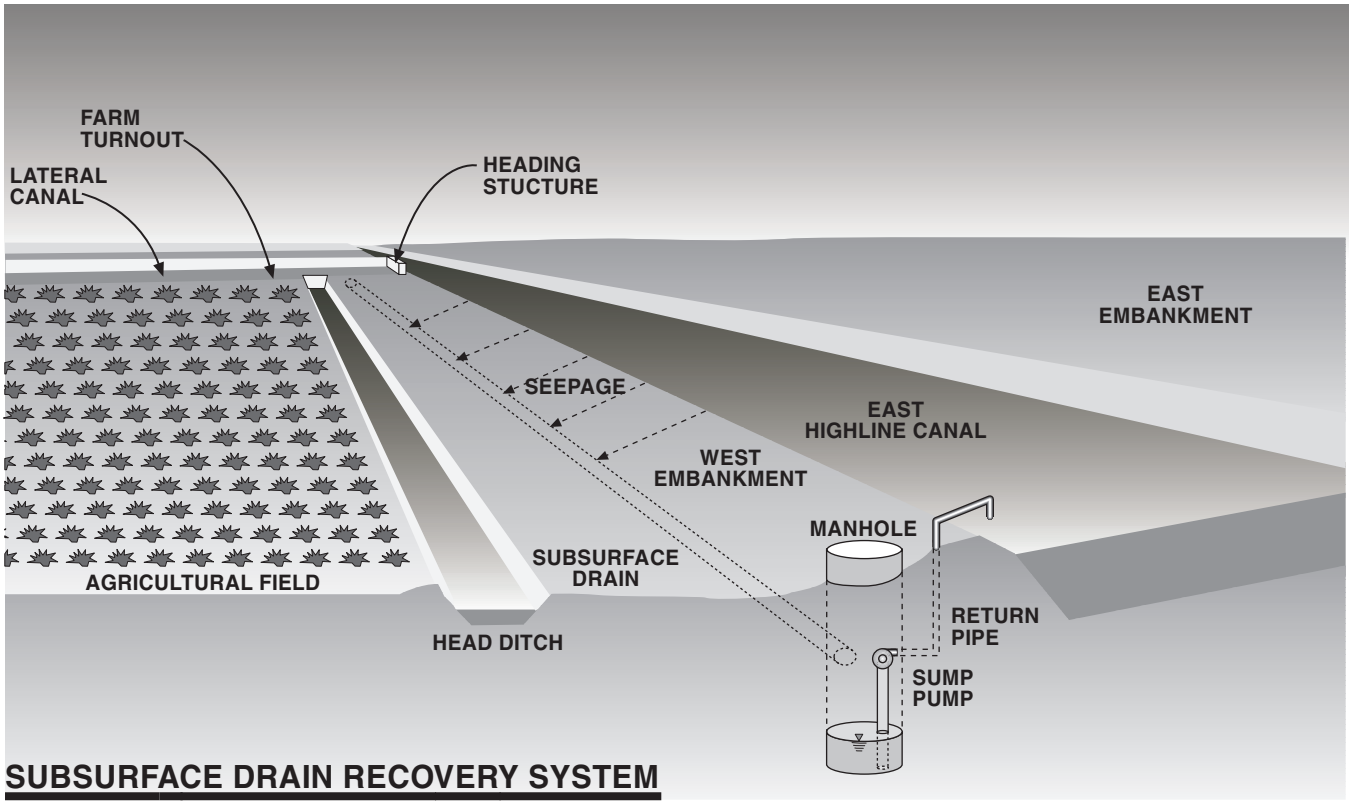
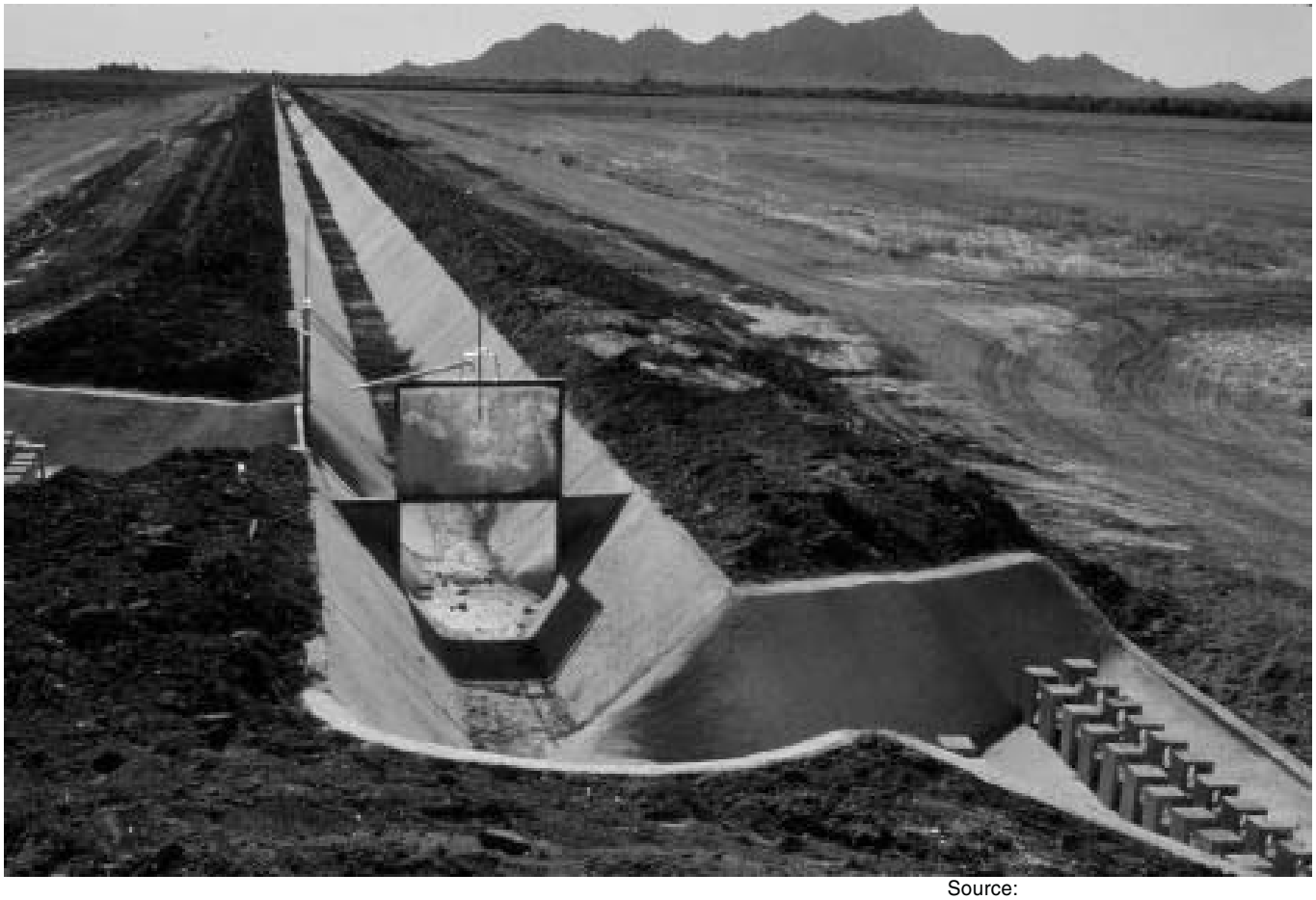


Figure 2-2b
Conceptual Seepage Recovery Systems
IID Water Conservation and Transfer Project Final EIR/EIS



Source:
USDA, Natural Resources Conservation Service-practice code 428A

Figure 2-2c
Conveyance Lining
IID Water Conservation and Transfer Project Final EIR/EIS

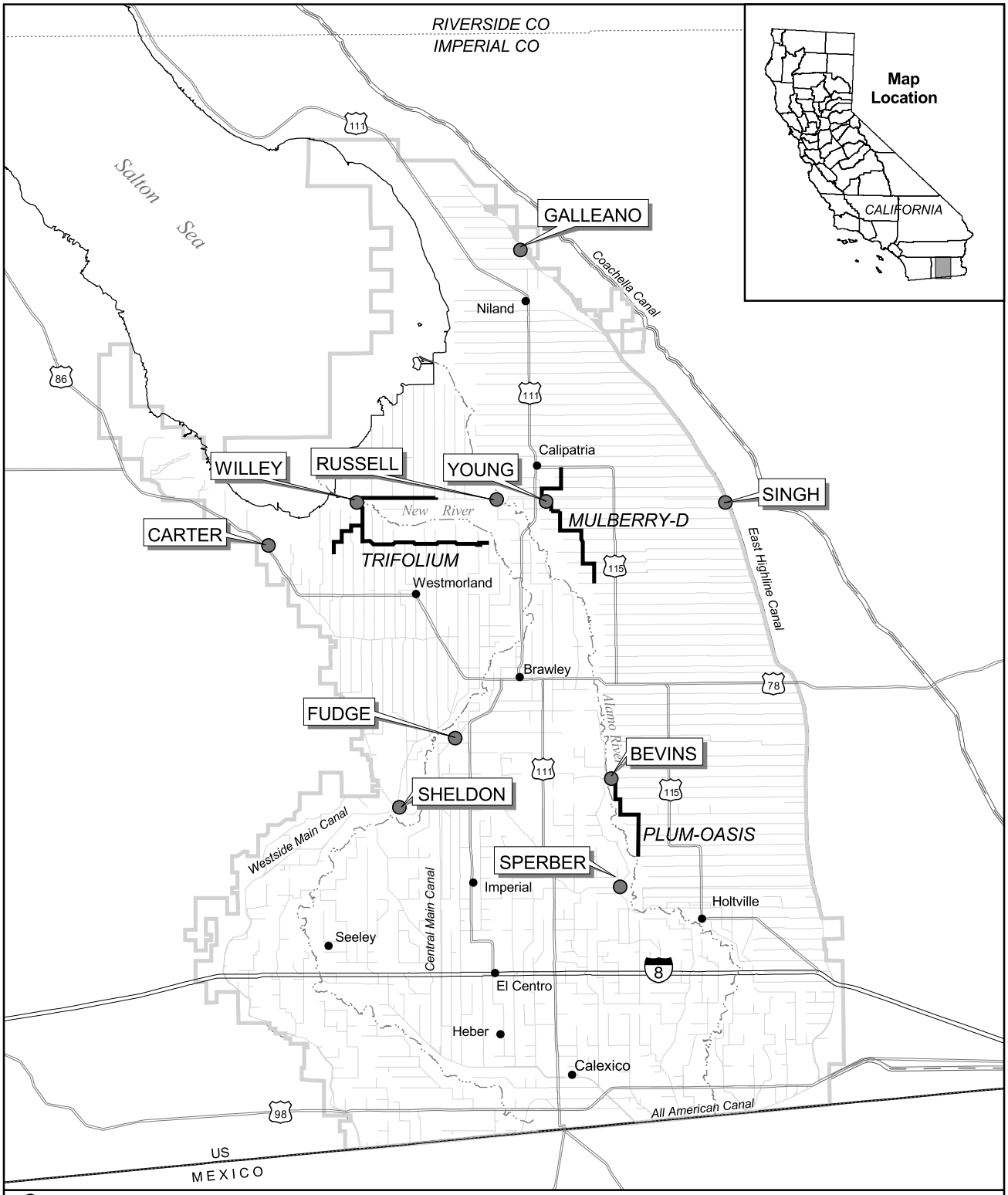


Figure 2-3
Existing Lateral Interceptor Systems and Reservoirs in the IID Water Service Area
IID Water Conservation and Transfer Project Final EIR/EIS

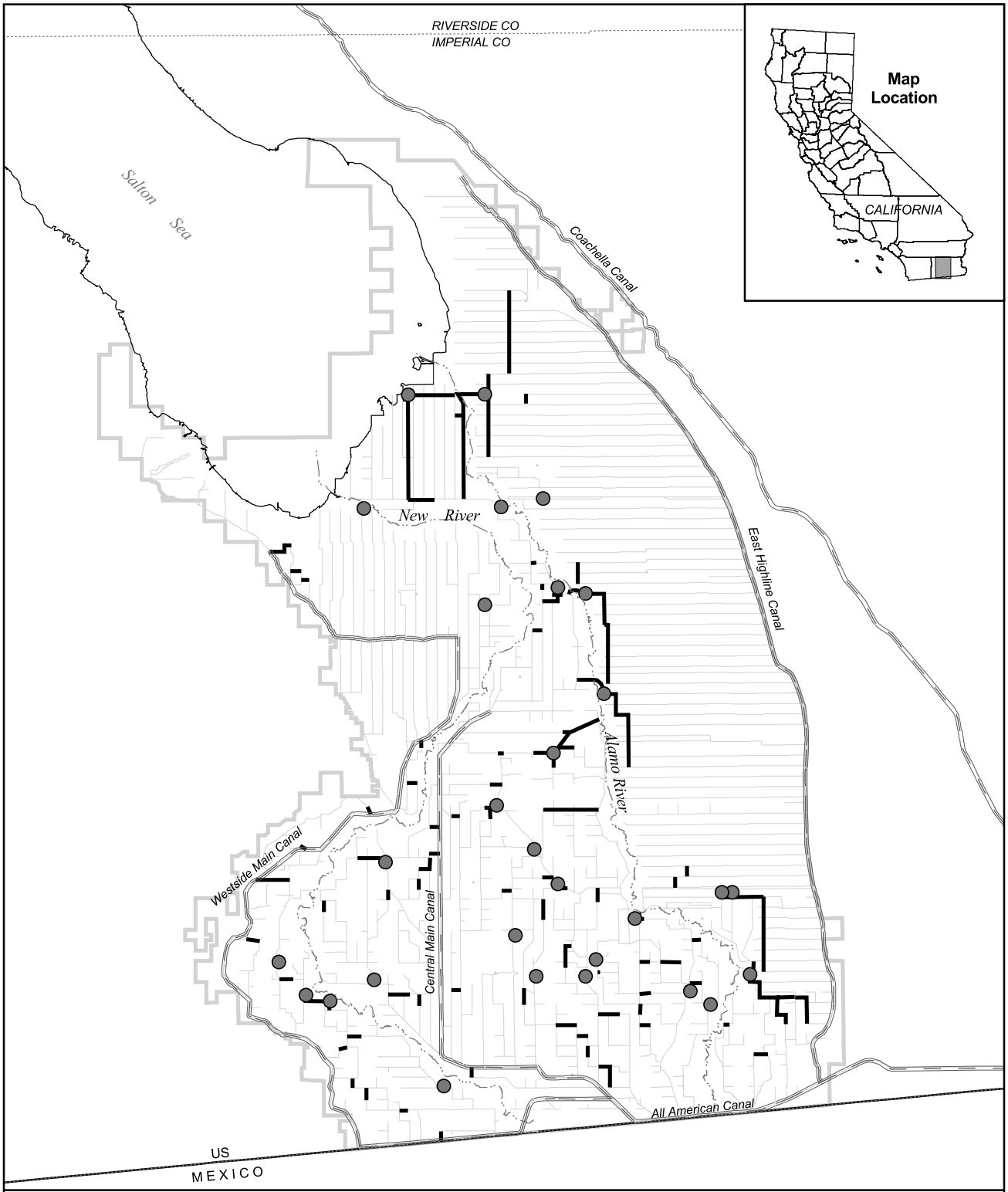


Figure 2-4
Proposed Lateral Interceptor Systems and Reservoirs in the IID Water Service Area
IID Water Conservation and Transfer Project Final EIR/EIS

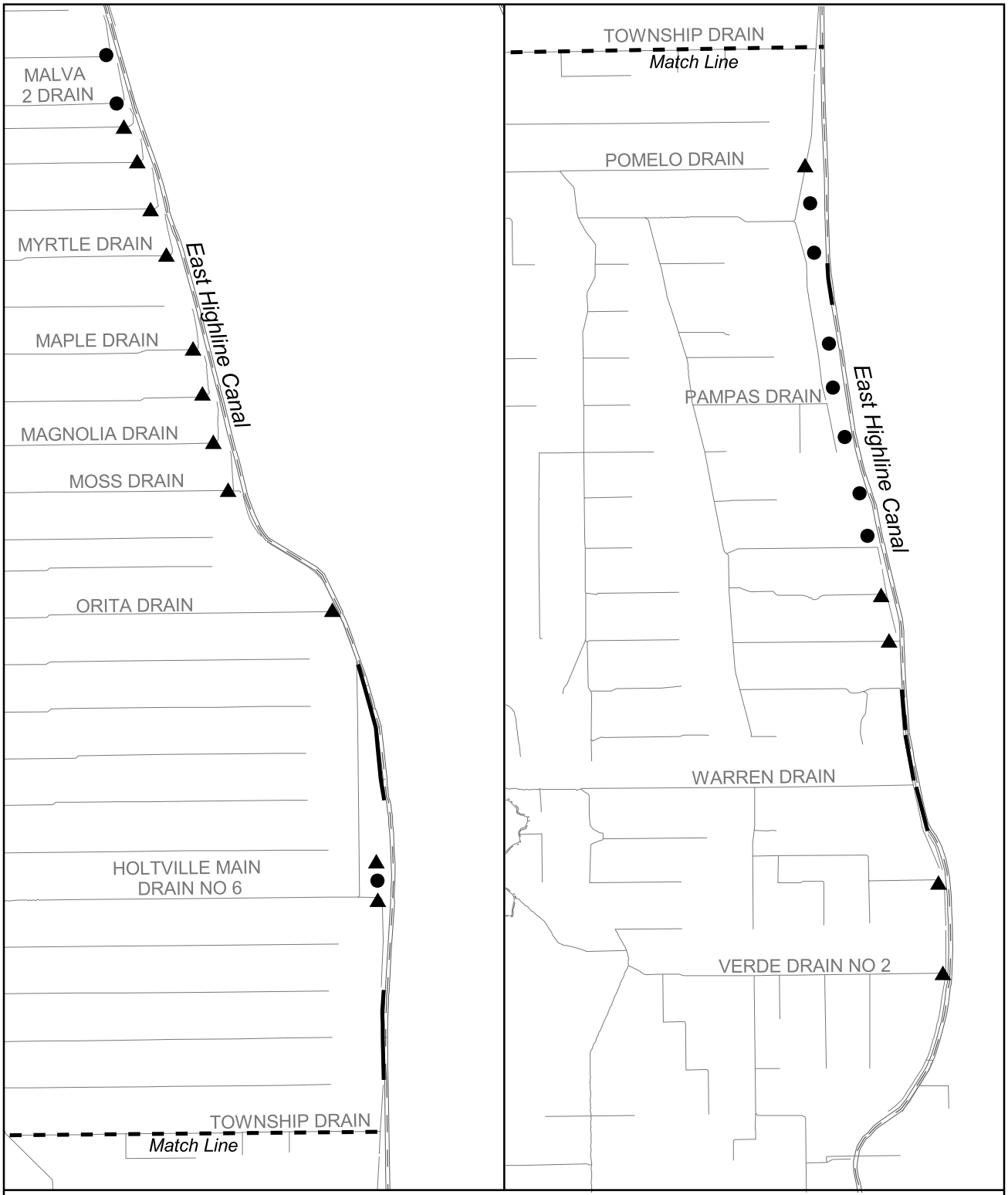


Figure 2-5
Existing and Proposed Seepage Recovery Systems in the IID Water Service Area

IID Water Conservation and Transfer Project Final EIR/EIS

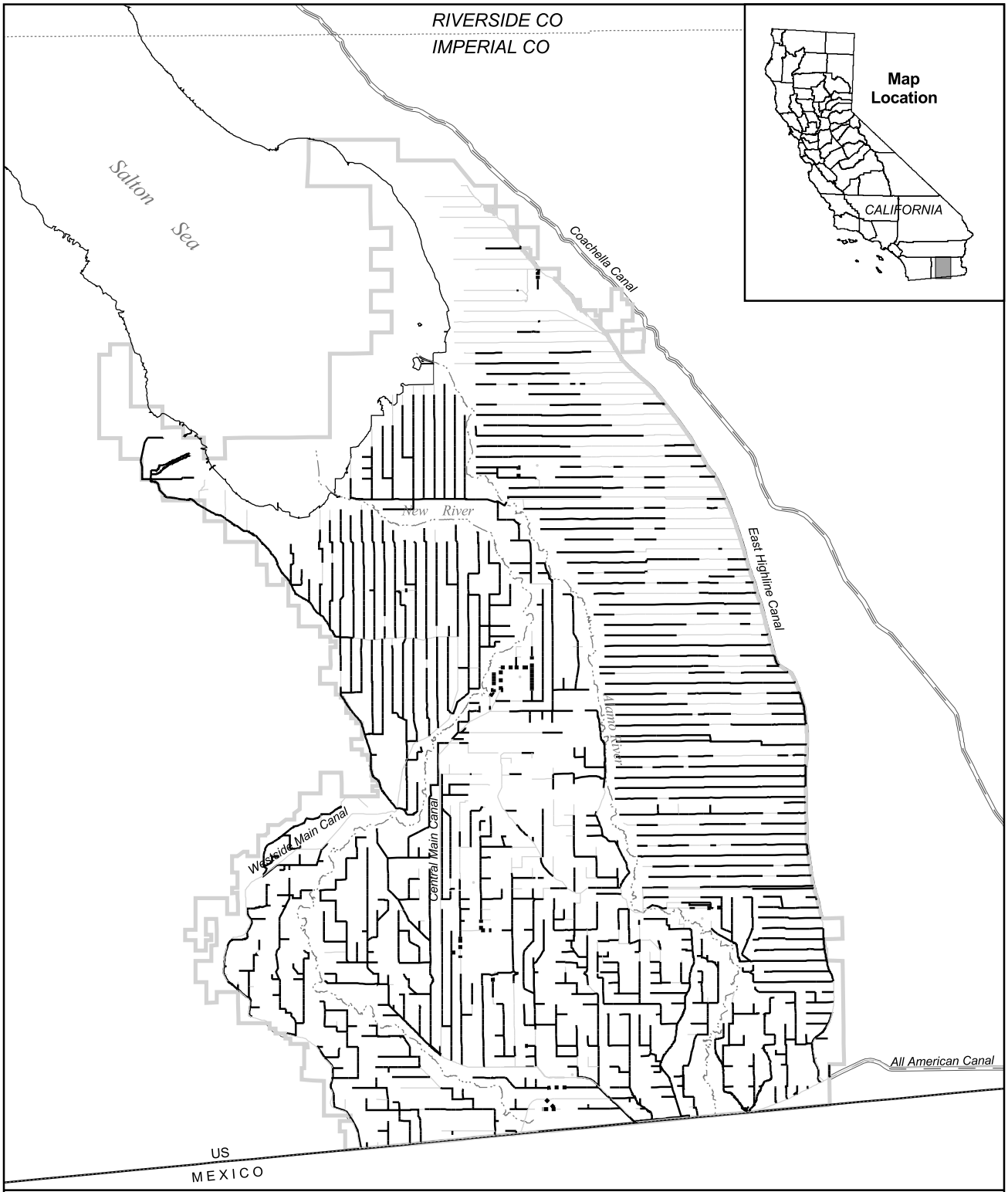


Figure 2-6
Existing Lined Conveyance Facilites in the IID Water Service Area

IID Water Conservation and Transfer Project Final EIR/EIS

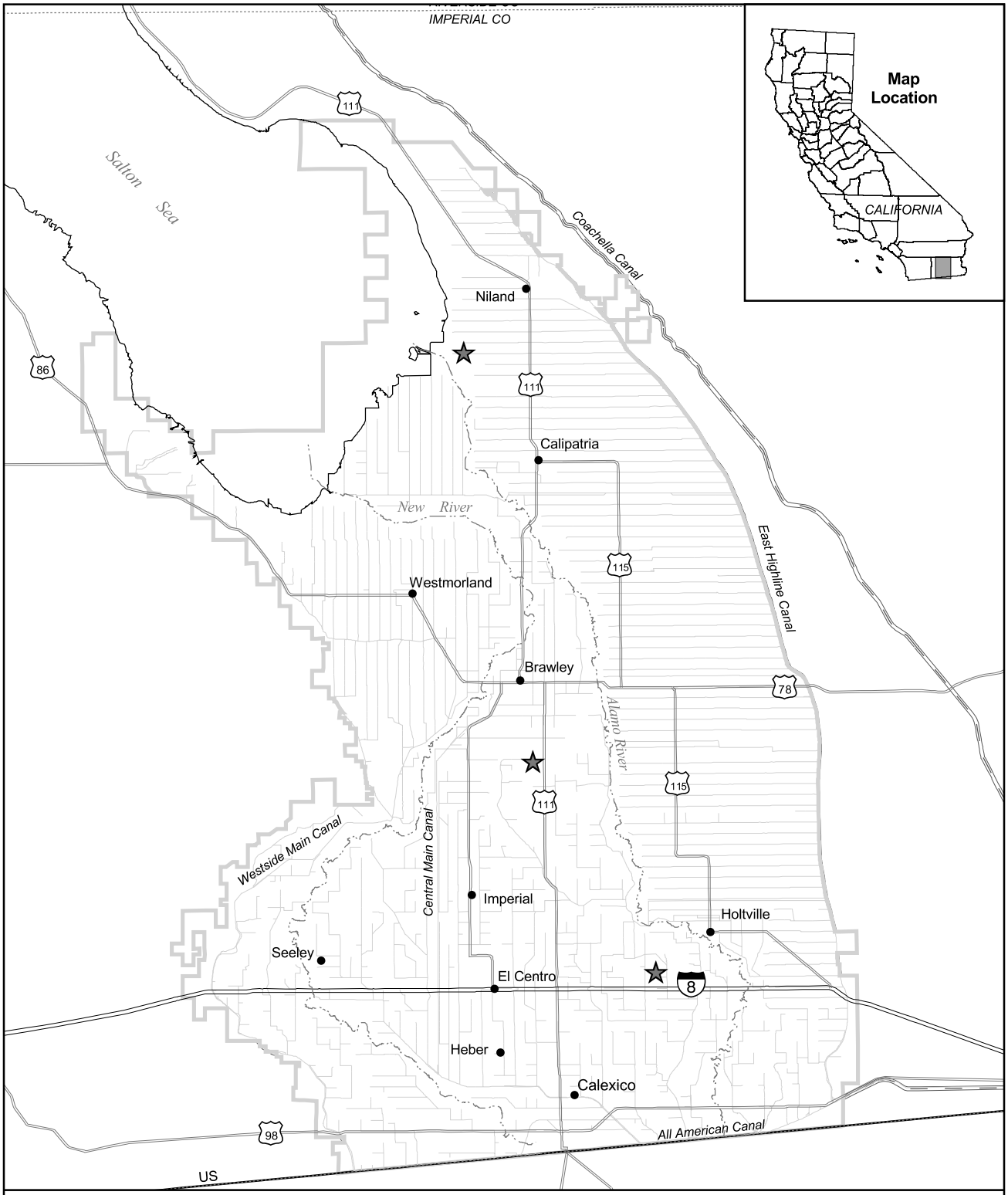


Figure 2-7
Proposed Conveyance Lining Locations in the IID Water Service Area

IID Water Conservation and Transfer Project Final EIR/EIS

Fallowing can also be implemented for different purposes. For example, farmers could choose to fallow a portion of a field, or some or all of their fields, as a result of poor market conditions, or to improve the land by taking it out of production temporarily. Rotational fallowing is a land management practice that allows a farmer to "rest and rehabilitate" a piece of land, usually on a temporary basis. Rotational fallowing of irrigated fields may improve farmland by allowing additional leaching during the rest period. Under a rotational fallowing program, the fallowed land is returned to production, usually in an improved state. Imperial Valley farmers have implemented many variations of temporary or rotational fallowing. Historically, approximately 20,000 acres of farmland within the IID water service area are fallowed each year.

For purposes of the Proposed Project, fallowing is defined as non-use of farmland for crop production for a period of time to conserve irrigation water. For purposes of assessing the environmental impacts of fallowing, two categories of fallowing are defined based upon the time period of implementation: 1) "rotational fallowing," defined as non-use of farmland for crop production for less than four consecutive years, and 2) "non-rotational fallowing," defined as non-use of farmland for crop production for four or more consecutive years. Under the Proposed Project, fallowing could be used as a conservation measure, and the conserved water generated by this means could be used for any of the following purposes:

- To comply with IID's contractual limitation on its annual Priority 3 diversions as set forth in the IID/SDCWA Transfer Agreement or the QSA.
- To comply with potential payback requirements of the IOP.
- For transfer of up to 300 KAFY to SDCWA, subject to the restrictions on fallowing contained in the IID/SDCWA Transfer Agreement, which are described below.
- For transfer of up to 100 KAFY to CVWD and/or MWD pursuant to the QSA.
- To implement habitat enhancement or other measures provided in this EIR/EIS or HCP.

The amount of water needed for these purposes may vary from year to year, or even from season to season, throughout the term of the Proposed Project.

Implementation of Fallowing. Landowners within the IID water service area could implement fallowing by entering into contracts with IID to cease crop production on a portion of their fields, or on some or all of their fields, on a short-term or long-term basis. IID could fallow land that it owns or controls in the same manner. For purposes of assessing the impacts of fallowing in this EIR/EIS, the amount of water conserved by the cessation of crop production at a particular field has been estimated based on historic use.

Conserved water created by fallowing for transfer would be diverted from the LCR at Parker Dam (for delivery through the CRA in the case of water transferred to SDCWA and MWD) or at Imperial Dam (for delivery through the AAC and the Coachella Canal in the case of water transferred to CVWD). This conserved water would not travel through the IID distribution system or be delivered to the fallowed field(s).

As an example to illustrate the fallowing concept, assume that: (1) 33 percent of applied irrigation water flows from the field as surface runoff (tailwater) and subsurface drainage (tilewater); and (2) a particular field under production has a Baseline use of 6 AFY per acre

of irrigation water, which is used as follows: 4 AF are consumptively used by the crop (evapotranspiration), and 2 AF flow into the drain system as a combination of tailwater and tilewater. If the landowner participates in the conservation program by fallowing this field (ceasing all agricultural production for a year), and assuming that no water is used to preserve the field's condition, then the fallowing method could produce 6 AF of conserved water per acre of land. Water delivered to the fallowed field would be reduced by 6 AF, and, as a result, drainage flow to the Salton Sea would be reduced by 2 AF.

Contractual Restrictions under the IID/SDCWA Transfer Agreement. As discussed in Section 2.2.4.1 below, the IID/SDCWA Transfer Agreement provides for the conservation and transfer to SDCWA of a "primary" amount of conserved water (130 to 200 KAFY) and an additional "discretionary" amount (up to 100 KAFY), as long as IID does not transfer the discretionary amount to CVWD and/or MWD (under the terms of the QSA or otherwise). Under the IID/SDCWA Transfer Agreement, the parties' obligations are contingent upon IID entering into contracts with landowners within 120 days to implement on-farm irrigation system improvements sufficient to yield, when water conservation efforts have been fully implemented, at least 130 KAFY of the total primary amount (see Sections 7.1(c) and 8.1(c) of the IID/SDCWA Transfer Agreement). The IID/SDCWA Transfer Agreement further provides that fallowing would not be a permitted conservation method under IID's contracts with landowners (see Section 14.2 of the IID/SDCWA Transfer Agreement). Thus, unless the anti-fallowing provisions of the IID/SDCWA Transfer Agreement are waived or modified, on-farm fallowing by landowners could not be used to conserve the primary amount to be transferred to SDCWA; however, the IID/SDCWA Transfer Agreement does not prohibit fallowing by IID (as opposed to individual landowners) to conserve the primary amount or fallowing by either IID or landowners to create the discretionary amount.

The QSA does not prohibit or restrict fallowing as a conservation measure. Thus, all of the water that could be transferred to CVWD and/or MWD could be generated by fallowing.

Policy Issues. In addition to the contractual restrictions set forth in the IID/SDCWA Transfer Agreement, the IID Board has adopted certain policies regarding fallowing as part of guidelines intended to govern IID's water transfer policy and negotiation of the IID/SDCWA Transfer Agreement.

In Resolution 4-95 (adopted on April 4, 1995), the IID Board acknowledged that "water is the vital natural resource of the Imperial Valley and the very foundation for all present and future economic development," and that "[a]griculture has been, and will continue to be, central to the way of life and economic vitality of the Imperial Valley." Resolution 4-95 provides, among other things, that the IID Board shall:

> "…3. Diligently protect the future economic well-being of the Imperial Valley by ensuring that its water resources are put to their highest and best use….
>
> 7. Maintain and enhance the economic well-being of Imperial Valley and its residents by proactively promoting and supporting opportunities to transfer conserved water, if and when:
>
> - The transfer is economically beneficial to Imperial Valley landowners and residents.

- Adverse third-party impacts, if any, are appropriately addressed.
- Environmental impacts, if any, are deemed to be in compliance with existing federal and state law."

IID Board Resolution 5-96 (adopted on February 6, 1996) provides that: "IID is not in favor of a fallowing program – any water conservation and transfer program should focus on other methods of conservation. . . ." IID Board Resolution 17-98 (adopted on July 14, 1998), which specifies procedures for developing a water conservation plan, acknowledges that "any no fallowing rule should preclude a participating landowner from receiving compensation if he/she fallows land for the purpose of transferring water."

Fallowing is also not in keeping with IID Board policies to utilize the water transfer program to encourage investment in on-farm irrigation system improvements that increase irrigation efficiency.

The conservation program included in the Proposed Project is designed to allow IID to implement many different conservation measures and to vary the mix of measures over the lengthy term of the Proposed Project. This flexibility allows IID to adapt the program to changing circumstances and still meet its obligation to conserve a fixed annual amount. Flexibility is also important in attracting landowners to agree to participate in the conservation program. Fallowing may be a desirable component of the IID water conservation program for a number of reasons, which could include the following:

- Fallowing may be perceived as a way to reduce the farmer's financial risk of participation in the conservation program.
- Fallowing may be easier to implement and manage than other on-farm or system conservation measures.
- Short-term fallowing would preserve the soil as a resource and would allow agricultural lands to be productive and useful in responding to national/international food needs over the term of the Proposed Project.
- It might be easier to start and stop conservation by fallowing on a temporary or emergency basis if IID must generate additional conserved water to pay back inadvertent overruns in compliance with the IOP.
- Fallowing may mitigate farmers' risks and help sustain farmers' businesses by providing a guaranteed income during periods of poor economic conditions.
- Temporary fallowing could be used to "jump-start" the on-farm conservation program by providing up-front funding to participants who would later implement on-farm irrigation system improvements.
- If a portion of the water conserved by fallowing could be used for specific environmental mitigation, the impacts to species and their habitats resulting from the conservation activities could be reduced.

Over the 75-year term of the Proposed Project, the IID Board may wish to change its policies regarding fallowing, and the restrictions on fallowing in the IID/SDCWA Transfer Agreement may also be waived or modified by the parties. To provide maximum flexibility

for current and future IID Boards to implement a conservation program with varying conservation measures, the Proposed Project includes, for purposes of the environmental assessment set forth in this EIR/EIS, the potential use of fallowing to generate some, all, or none of the required conserved water.

Water Rights Issues. As described in Section 1.4.2, the Law of the River governs the use of Colorado River water by entitlement holders. IID holds the water rights to Colorado River water in trust for use in the Imperial Valley. No water rights are allocated to parcels of land, individual farmers, or resources such as the Salton Sea.

Normally, non-use of a water right subjects the holder of the right to a risk of loss of the right by forfeiture or abandonment. However, if fallowing is implemented as a conservation measure in connection with the Proposed Project, it should constitute use by IID, rather than non-use.

The IID/SDCWA Transfer Agreement relies upon Water Code Sections 1011 and 1012. Section 1011 provides that a cessation or reduction in the use of an appropriative water right due to "water conservation" efforts is deemed a reasonable beneficial use of the water and that such conserved water may be transferred. As of the date of execution of the IID/SDCWA Transfer Agreement in 1998, Section 1011(a) provided that:

> "(a) When any person entitled to the use of water under an appropriative right fails to use all or any part of the water because of water conservation efforts, any cessation or reduction in the use of the appropriated water shall be deemed equivalent to a reasonable beneficial use of water to the extent of the cessation or reduction in use. . . .
>
> . . . . For purposes of this section, the term "Water Conservation" shall mean the use of less water to accomplish the same purpose or purposes of use allowed under the existing appropriative right."

In 1999, subsequent to execution of the IID/SDCWA Transfer Agreement, Section 1011(a) was amended to change the definition of "water conservation" to read as follows:

> "For purposes of this section, the term 'water conservation' shall mean the use of less water to accomplish the same purpose or purposes of use allowed under the existing appropriative right. Where water appropriated for irrigation purposes is not used as a result of temporary land fallowing or crop rotation, the reduced usage shall be deemed water conservation for purposes of this section. For the purpose of this section, 'land fallowing' and 'crop rotation' mean those respective land practices, involving the non-use of water, used in the course of normal and customary agricultural production to maintain or promote the productivity of agricultural land."

In addition, Section 1012 of the Water Code provides:

> "Notwithstanding any other provision of law, where any person, public agency, or agency of the United States undertakes any water conservation effort, either separately or jointly with others entitled to delivery of water from the Colorado River under contracts with the United States, which results in reduced use of Colorado River water within the Imperial Irrigation District, no forfeiture,

> diminution, or impairment of the right to use the water conserved shall occur, except as set forth in the agreements between the parties and the United States."

Even if there were any uncertainty as to whether conservation of water constitutes use of water, Water Code Section 1005 provides that any water right to water flowing along a state boundary that is subject to an interstate compact to which California is a party (e.g., the Colorado River), and to the extent such right relates to quantities that the US has contracted to deliver to a state agency or public district (e.g., IID).

> "shall not be subject to any requirement or limitation provided by law relating to the time . . . within which such water shall be put to use, or relating to the continuity of use of such water; and water contracted to be delivered from such stream, shall be reserved to the contractor therefor without diminution by reason of the contractor's failure to apply such water to use during any period . . ."

IID has stated that it does not intend the water conservation and transfer program to adversely impact its historic water rights. The petition for SWRCB approval of the transfers requests a determination by SWRCB, among other things, that: (1) the 1998 version of Water Code Section 1011 and Sections 1012 and 1013 apply to the transaction and IID's senior water rights are unaffected by the transfer of conserved water; (2) the transfer of conserved water by IID is in furtherance of SWRCB Decision 1600, SWRCB Water Rights Order 88-20, Article X, Section 2 of the California Constitution, and Sections 100 and 109 of the Water Code as in effect in 1998; and (3) the transfer of conserved water by IID establishes the reasonable and beneficial use of the conserved water by IID.

IID has also sought confirmation by Reclamation and the Secretary that the water transfer program, including use of conserved water for compliance with IID's diversion cap, the IOP and/or for mitigation purposes, is in compliance with applicable reasonable use requirements. The proposed IA, which would implement the QSA, provides:

> …subject to IID's implementation of such conservation measures, and absent any material adverse change in IID's irrigation practices or material advances in technology associated with economically feasible irrigation efficiency, and assuming the continued effectiveness of the QSA, the Secretary as of the date of execution of [the IA] does not anticipate any need to assess IID's reasonable and beneficial use of water prior to Year 20 (as Year 20 is defined in the QSA).

Prior to implementing fallowing to generate any portion of the conserved water required to implement the Proposed Project, IID intends to require confirmation by state and federal authorities that fallowing is an acceptable method of conservation and that use of conserved water generated by fallowing constitutes a reasonable and beneficial use in full compliance with the Law of the River and would not adversely affect IID's entitlement to Colorado River water.

2.2.3.5 Water Conservation Program Administration

The recipients of water conserved by IID (i.e., SDCWA, CVWD, and/or MWD) will make a per-AF payment to IID in exchange for use of the conserved water. IID would administer the water conservation program, including on-farm irrigation system, water delivery system, and fallowing components, to ensure that conservation measures are implemented

according to contracts that would be established between farmers and IID and to verify that sufficient water is conserved to meet IID's contractual obligations under the IID/SDCWA Transfer Agreement and QSA.

Agricultural water users participating in the on-farm conservation program would implement on-farm irrigation system measures, pursuant to contractual agreements with IID, in exchange for a payment by IID. The contractual agreements would state the amount of water to be conserved on an annual basis; this amount would be used to determine each participating farmer's annual allotment of water to ensure that the contracted conservation amount is being met. For water delivery system measures that IID implements, IID would determine the volume of water conserved annually using standard water measurements.

IID would be responsible for all record keeping, including on-farm verification visits, O&M of measurement devices, records of delivery dates and delivery volumes, and conserved water calculations. IID would also be responsible for all financial accounting activities related to the disbursement of conservation payments to participating water users.

2.2.4 Water Transferees and Transfer Agreements

This section describes the mechanisms by which water could be transferred to SDCWA, CVWD, and/or MWD. Under the first scenario for the Proposed Project (IID/SDCWA Transfer Agreement Implementation Only), up to 300 KAFY would be transferred to SDCWA in accordance with the IID/SDCWA Transfer Agreement. Under the second scenario for the Proposed Project (QSA Implementation), 130 to 200 KAFY would be transferred to SDCWA and up to 100 KAFY would be transferred to CVWD and/or MWD. This section also presents a brief overview of how California's water transfer law is applied to the Proposed Project.

2.2.4.1 Water Transfer to SDCWA under the Terms of the IID/SDCWA Transfer Agreement

On April 29, 1998, IID and SDCWA executed the IID/SDCWA Transfer Agreement (also see Section 1.4.5), which defines the negotiated, contractual terms of the proposed water transfer to SDCWA. The IID/SDCWA Transfer Agreement is a long-term transaction involving the conservation by IID of up to 300 KAFY and the subsequent transfer of the conserved water to SDCWA. The conserved water would consist of Colorado River water that otherwise would be diverted by IID for use within IID's water service area in Imperial County, California. The transferred water is intended for use within SDCWA's service area in San Diego County, California. IID's and SDCWA's service areas are shown in Figures 1-3 and 1-8, respectively, in Section 1.

Under the IID/SDCWA Transfer Agreement, SDCWA would acquire from IID conserved water consisting of two components, a "primary" amount and a "discretionary" amount. The "primary" component is an annual amount to be determined by IID, between a minimum of 130 KAFY and a maximum of 200 KAFY. The primary transfer would be phased in, beginning at 20 KAF in the first year of the transfers and increasing in approximately 20-KAFY increments until a stabilized, primary transfer amount is established.

The "discretionary" component involves the optional conservation and transfer of an additional amount of up to 100 KAFY, contingent upon IID's determination that the

additional conserved water is available and on SDCWA's determination of need. The discretionary transfer would commence no earlier than the 11th year after commencement of the primary transfer (year 2013) and would be phased in over a period of between 2 and 10 years. (The IID/SDCWA Transfer Agreement also provides that IID could transfer the discretionary amount (100 KAFY) to CVWD and/or MWD, in lieu of transfer of such amount to SDCWA, to settle disputes between IID and those other water agencies. The QSA implements this exception, which provides the second scenario for the Proposed Project, discussed below in Section 2.2.4.2.)

The IID/SDCWA Transfer Agreement has an initial term of 45 years after transfers commence. Once the primary and discretionary amounts are established and fully phased in, IID must continue to conserve and transfer these amounts, and SDCWA must continue to acquire these amounts, for the initial term of 45 years. Thereafter, IID and SDCWA each have an option to extend the term for an additional 30 years, to Year 2077. Thus, the water transfers between IID and SDCWA could continue for up to 75 years. Under certain conditions, up to 34 KAFY could be recalled by IID at the end of the initial 45-year term.

The IID/SDCWA Transfer Agreement includes certain provisions for determining the price payable by SDCWA for the transferred water. This includes a base contract price, including a shortage premium payment that applies when there are significant shortfalls in Colorado River water supplies, and a mechanism for market-based price determination.

The IID/SDCWA Transfer Agreement also provides that the Proposed Project would be governed by Water Code provisions § 1011, 1012 and 1013. It also provides that the conserved water to be transferred to SDCWA would arise from, and retain, IID's Priority 3 Colorado River water right, which is a very senior water right. For a discussion of the priority of Colorado River water rights and IID's water rights, see Sections 1.4.2 and 1.4.3, respectively,. For a discussion of California law as applied to the water transfers, see Section 2.2.4.3. The parties do not intend, as part of the Proposed Project, to transfer or grant to SDCWA, or to any other party, any ownership interest in, or control over, IID's senior water rights.

2.2.4.2 Water Transfers to SDCWA, CVWD, and/or MWD under the Terms of the QSA

The proposed QSA was negotiated by and among IID, CVWD, and MWD, with the participation of representatives of the Secretary, Reclamation, California Department of Water Resources (DWR), and SDCWA. This negotiation occurred subsequent to, and partly as a response to, execution of the IID/SDCWA Transfer Agreement. The QSA provides for a broad series of actions, transactions, and agreements that implement major components of the California Plan. As described in Section 1.4.6, the California Plan is designed to bring California's use of Colorado River water into conformance with its basic apportionment. If the QSA is finally approved by the participating agencies and if the conditions precedent to implementation are satisfied or waived, the second scenario for the Proposed Project (QSA Implementation) would apply.

Among other things, the QSA provides for:

- The transfer by IID of up to 200 KAFY of conserved water to SDCWA pursuant to the terms of the IID/SDCWA Transfer Agreement (i.e., the "primary" transfer amount provided for under the IID/SDCWA Transfer Agreement).

- CVWD's option to acquire up to 100 KAFY of water conserved by IID, in two 50-KAFY increments (in lieu of the discretionary transfer of this amount to SDCWA). Although acquisition of the conserved water is optional for CVWD, IID is obligated to conserve and transfer this amount if the option is exercised by CVWD. The terms of the transaction are set forth in the IID/CVWD Acquisition Agreement, which is one of the related agreements provided for in the QSA (see Appendix A).
- MWD's option to acquire any portion of the 100 KAFY of conserved water that is available to, but not acquired by CVWD. MWD's acquisition is also optional, but IID is obligated to conserve and transfer this amount if the option is exercised by MWD. The terms of the transaction are set forth in the IID/MWD Acquisition Agreement, which is one of the related agreements provided for in the QSA (see Appendix A).

Table 2-5 shows the various water recipients and the amount of water each recipient could receive under the Proposed Project's second scenario (QSA Implementation).

Under the QSA, the transfer of up to 100 KAFY of conserved water to CVWD and/or MWD is divided into two increments of 50 KAFY each. Transfer of the first 50-KAFY increment to CVWD would commence no earlier than January 1, 2007, and the amount transferred in the initial year increases thereafter in 3- to 5- KAFY increments over a period of 10 to 17 years until the 50-KAFY amount is fully phased in. Transfer of the second 50-KAFY increment to CVWD or MWD would commence no earlier than the year following the year in which the first increment reaches 50 KAFY. The amount transferred in the initial year increases thereafter in 3- to 5- KAFY increments over a period of 10 to 17 years until it reaches 50 KAFY. However, under the terms of the QSA, MWD (not IID) is responsible for providing the second 50 KAFY to CVWD after the 45th year of the QSA term. It is unknown at this time what mechanism will be used by MWD to provide this water to CVWD, and a subsequent environmental assessment by MWD and/or CVWD is anticipated. This EIR/EIS is not intended to provide environmental compliance for CVWD's acquisition of this 50-KAFY increment from MWD.

Under a proposed amendment to the IID/SDCWA Transfer Agreement (the amendment is conditioned upon implementation of the QSA), IID will make an additional 10 KAF (called the "early water transfer") available to SDCWA in the following increments: 2.5 KAF in 2005, 5 KAF in 2006, and 2.5 KAF in 2007. The QSA provides for early water transfers from IID to MWD. MWD has an option to acquire 2.5 KAF in 2005, 5 KAF in 2006, and 2.5 KAF in 2007. In addition, if CVWD postpones its acquisition of the first 50 KAFY increment available under the QSA beyond 2007, MWD could also receive an additional 5 KAF in 2006, 7.5 KAF in 2007, and 10 KAFY from 2007 up to 2014.

As with the IID/SDCWA Transfer Agreement, the conserved water to be transferred to CVWD or MWD under the QSA would arise under, and retain, IID's Priority 3 water right. The parties do not intend to transfer or grant to CVWD, MWD, or any other entity any ownership interest in, or control over, IID's senior water rights.

TABLE 2-5
Water Transfers under Proposed Project's Second Scenario: QSA Implementation

Year	Minimum Primary Transfer to SDCWA (130 KAFY)	Maximum Primary Transfer to SDCWA (200 KAFY)	Transfer to CVWD or MWD (100 KAFY)	Total IID Transfer (SDCWA at 130 KAFY)	Total IID Transfer (SDCWA at 200 KAFY)	Notes
2002	20.0	20.0		20.0	20.0	Primary transfer to SDCWA commences
2003	40.0	40.0		40.0	40.0	
2004	60.0	60.0		60.0	60.0	
2005	82.5	82.5	2.5	85.0	85.0	Early water transfer commences
2006	105.0	105.0	5.0	110.0	110.0	
2007	122.5	122.5	7.5	130.0	130.0	1st 50 KAFY transfer commences to CVWD and/or MWD
2008	130.0	140.0	10.0	140.0	150.0	
2009	130.0	160.0	15.0	145.0	175.0	
2010	130.0	180.0	20.0	150.0	200.0	
2011	130.0	200.0	25.0	155.0	225.0	Maximum, annual primary transfer to SDCWA
2012	130.0	200.0	30.0	160.0	230.0	
2013	130.0	200.0	35.0	165.0	235.0	
2014	130.0	200.0	40.0	170.0	240.0	
2015	130.0	200.0	45.0	175.0	245.0	
2016	130.0	200.0	50.0	180.0	250.0	
2017	130.0	200.0	55.0	185.0	255.0	2nd 50 KAFY transfer commences from IID to CVWD and/or MWD. Transfer of this increment is the responsibility of MWD, and not IID, after Year 2047.
2018	130.0	200.0	60.0	190.0	260.0	
2019	130.0	200.0	65.0	195.0	265.0	
2020	130.0	200.0	70.0	200.0	270.0	
2021	130.0	200.0	75.0	205.0	275.0	
2022	130.0	200.0	80.0	210.0	280.0	
2023	130.0	200.0	85.0	215.0	285.0	
2024	130.0	200.0	90.0	220.0	290.0	
2025	130.0	200.0	95.0	225.0	295.0	
2026	130.0	200.0	100.0	230.0	300.0	Maximum transfers
2047	200.0	200.00	100.0	230.0	300.0	IID and SDCWA each have option to extend the terms of the IID/SDCWA Transfer Agreement for 30 additional years
2077	200.00	200.00	100.0	230.0	300.0	Project term ends

2.2.4.3 California Water Transfer Law as Applied to the Project

As explained in Section 1.4.3, IID's Colorado River water rights are held as both California pre-1914 appropriative rights and as California permitted appropriative rights. The IID/SDCWA Transfer Agreement contains a number of conditions precedent, including SWRCB approval of the transfer. Under these conditions precedent, SWRCB must also make certain findings confirming (among other things) that IID's senior water rights are unaffected by the transfer of conserved water to SDCWA, and that the conserved water retains the same priority as if the water had been diverted by IID and used within IID's water service area.

To implement the IID/SDCWA Transfer Agreement, IID and SDCWA filed a petition with SWRCB under Water Code §§ 1700 *et seq.*, §§ 1735 *et seq.* and §§ 1011-1012, based on IID's permitted appropriative right under Permit 7643, which authorizes IID to divert 7,239,680.25 AFY at Imperial Dam for irrigation and domestic use. The petition was filed without waiving IID's pre-1914 appropriative rights. The petition seeks approval of a change in the point of diversion from Imperial Dam to Lake Havasu to enable the conserved water to be transported through the CRA. No change would occur in the purpose of use or place of use within the meaning of Water Code § 1011.

Under common and statutory laws of California, an appropriator may change the point of diversion of water, and the place and purpose of its use, if such actions do not result in substantial injury to legal users of water, or unreasonably affect fish, wildlife, or instream beneficial uses. The rules regarding change of place and purpose of use have now been codified in the Water Code. Sections 1700 to 1705.5 allow a person with an appropriative right "under the Water Commission Act or this Code" to change the place and/or purpose of use with permission from SWRCB. To establish a change of place or purposes of use in such circumstances, the appropriator must show that the "change will not operate to the injury of any legal user of the water involved" (Water Code § 1702). If the appropriative right is one derived by virtue of an appropriation other than under the Water Commission Act or the Code, such as is also the case with IID's right, the appropriator may unilaterally change the place or purpose of use "if others are not injured by such change" (Water Code § 1706).

Under Water Code § 1011, a transfer of conserved water resulting in reduced usage by IID is deemed a reasonable beneficial use of the water by IID. Thus, if the "use" is by IID, the location of the use is legally still within IID's water service area. Even in the absence of Water Code § 1011, IID, as a California appropriator, has a legal right to seek a change in the place of use of its appropriated water, so long as other legal users of water would not be adversely affected. Enactments, such as Water Code §§ 1011 and 1012, are merely extensions of the long-standing principle that an appropriator can change the point of diversion and place, or purpose of use if other legal users of water are not injured.

If the QSA is executed and implemented, up to 100 KAFY of conserved water could be transferred to CVWD and/or MWD. Any transfer of conserved water to MWD would be accomplished, like the transfer to SDCWA, by a change in the point of diversion of an amount equal to the amount conserved from Imperial Dam to Lake Havasu to facilitate conveyance through the CRA to MWD's service area.

Any transfer of conserved water to CVWD would be accomplished by IID conserving the water, allowing CVWD to divert the water at Imperial Dam and transport the water to CVWD via the Coachella Canal for use within CVWD's service area (Improvement District No. 1).

In summary, both types of IID's appropriative water rights (pre- and post-1914) allow a change in point of diversion, place of use, and the purpose of use if there is no substantial injury to other legal water users. In addition, common and statutory law in California recognizes that conserved water could be transferred. The Proposed Project would not injure or affect the rights of other Colorado River water users because only conserved water is being transferred, and no other water users have historically used or depended on IID's irrigation drainage. However, SWRCB will make the final determination of whether there is injury to other water users in connection with its review of the request for approval of the water transfers.

2.2.5 Physical Conveyance of Conserved Water

This section describes the method of conveyance of conserved water to CVWD, SDCWA, and MWD. It also describes the federal action necessary to permit the conveyance of conserved water to the SDCWA and MWD service areas.

2.2.5.1 Conveyance of Conserved Water to CVWD

No change in the point of diversion from the Colorado River is required for the water transfer from IID to CVWD. Conserved water to be transferred by IID to CVWD would be diverted at Imperial Dam (IID's existing diversion point), and conveyed to CVWD through the AAC to the Coachella Canal at Drop 1, where it would flow to the CVWD service area (Improvement District No. 1[1]). No water conveyance facilities would be expanded, and no new facilities would be constructed, as part of the Proposed Project to convey conserved water to CVWD.

2.2.5.2 Conveyance of Conserved Water to SDCWA

SDCWA has no existing facilities to transport water from the LCR or the IID water service area to the SDCWA service area. To avoid the construction of new conveyance facilities, the IID/SDCWA Transfer Agreement anticipates using the CRA to transfer Colorado River water to SDCWA. The CRA, which is owned and operated by MWD, transports water from Lake Havasu on the Colorado River to Lake Mathews in Riverside County, California (see Figure 1-2 in Section 1 and Section 1.4.1). The CRA is the sole existing water delivery facility connecting the Colorado River and coastal Southern California.

SDCWA and MWD have entered into the SDCWA/MWD Exchange Agreement to implement the transfer of conserved water to SDCWA by means of a water exchange (see Section 1.5.5). The SDCWA/MWD Exchange Agreement provides that an amount of water equal to the amount of water conserved by IID for transfer to SDCWA would be diverted into the CRA at MWD's Whitsett Intake at Lake Havasu, and an equivalent amount of water would be delivered by MWD to the SDCWA service area. Currently, SDCWA purchases all

[1] For the purposes of this EIR/EIS, the CVWD service area is defined as "Improvement District No. 1." See Section 1.3 for further information.

of its imported water from MWD. Under the SDCWA / MWD Exchange Agreement, SDCWA would receive, for use in the SDCWA service area, the same blend of water from MWD that it currently receives from MWD. That is, the blending of Colorado River water with SWP water and other MWD water sources would remain the same, and no measurable change in water quality or quantity would occur in the SDCWA service area as a result of implementing the Proposed Project and the SDCWA / MWD Exchange Agreement. No new facilities, operations, or maintenance practices would be required to convey, receive, or use the water resulting from the IID transfer.

SDCWA and MWD have determined that the water exchange transaction described in the SDCWA / MWD Exchange Agreement is exempt from CEQA compliance, and an NOE has been filed (see Section 1.5.5). This EIR / EIS relies upon the NOE and does not assess the potential impacts of the SDCWA / MWD Exchange Agreement.

2.2.5.3 Conveyance of Conserved Water to MWD

Conserved water to be transferred from IID to MWD would be diverted from the Colorado River into the CRA at MWD's Whitsett Intake at Lake Havasu.

2.2.5.4 Federal Actions Necessary to Convey Conserved Water to SDCWA and MWD

To transfer conserved water to SDCWA or MWD, Colorado River water in an amount equal to the amount conserved would be diverted from the Colorado River into the CRA at Lake Havasu behind Parker Dam, which is 143 miles upstream from IID's normal diversion point at Imperial Dam (see Figure 1-2 in Section 1). IID's annual diversions of Colorado River water at Imperial Dam would be reduced by the amount of water diverted at Lake Havasu for transfer to SDCWA and / or MWD.

The Secretary, acting through Reclamation, releases and delivers Colorado River water pursuant to contracts entered into under federal law (see Section 1.4.2). Implementation of the Proposed Project is subject to federal action, consisting of the Secretary's agreement to deliver Colorado River water to the water recipients.

Under the Proposed Project's second scenario (QSA Implementation), the federal action consists of execution and implementation of the IA (see Section 1.5.3) whereby the Secretary agrees to release and deliver Colorado River water under the terms of the IA, to allow implementation of the QSA. The IA EIS prepared by Reclamation assesses the federal actions required to implement the QSA (see Section 1.5.3), including the change in the point of diversion on the LCR, mitigation measures designed to avoid impacts to species and habitats along the LCR, and adoption of the IOP. The analysis set forth in the IA EIS is incorporated by reference into this EIR / EIS.

Under the Proposed Project's first scenario (IID / SDCWA Transfer Agreement Implementation Only), an implementation agreement would be entered into whereby the Secretary would agree to deliver to the CRA water conserved by IID for transfer to SDCWA. This EIR / EIS assesses the federal action required for the Proposed Project's first scenario; however, the assessment relies upon the analysis contained in the IA EIS.

2.2.6 Habitat Conservation Plan

2.2.6.1 Habitat Conservation Plan Overview

IID has prepared an HCP (see Appendix C) as part of the Proposed Project to support its Incidental Take Permit applications in conformance with § 10(a)(1)(B) of ESA and § 2081(b) of CESA. The Incidental Take Permits would allow IID to conduct otherwise lawful activities that incidentally take federal and/or state-listed and other specified unlisted species that are proposed for coverage in IID's HCP. These activities are discussed in Section 2.2.6.4 and further defined in Appendix C.

Through the HCP, IID is committing to certain management actions that would avoid, minimize, and mitigate the impacts of any take of proposed covered species that might result from covered activities, including aspects of IID's implementation of the IID/SDCWA Transfer Agreement, the QSA, and continuation of its routine water-related O&M activities. O&M activities are included to ensure that IID obtains all ESA and CESA approvals required to continue operation of its irrigation and drainage system for the duration of the Proposed Project. Issuance of an Incidental Take Permit by USFWS constitutes a federal action that requires evaluation under NEPA.

This section summarizes the timing of HCP implementation, the geographic extent of HCP coverage, the duration for which the HCP would be enforced, the species covered by the HCP, and the Proposed Project's activities covered by the HCP. The full text of the HCP is provided in Appendix C in this EIR/EIS. This EIR/EIS provides the environmental analysis required under NEPA and CEQA to issue ESA and CESA permits and approvals for IID's water-related operations and the Proposed Project.

2.2.6.2 Timing of HCP Implementation

IID would commence compliance with the HCP measures immediately upon issuance of the Incidental Take Permits by the USFWS and CDFG.

2.2.6.3 Geographic Area Covered by the HCP

IID conveys and delivers water diverted from the LCR at Imperial Dam to customers in the Imperial Valley in IID's service area via the AAC. The HCP area includes all lands comprising the approximately 500,000 acres of IID's water service area (including canal rights-of-way), the Salton Sea, lands owned by IID outside of its water service area that are currently submerged beneath the Salton Sea, and IID's rights-of-way along the AAC downstream from the point of diversion on the LCR, including the desilting basins at Imperial Dam. In addition, the HCP covers any take of covered species that use the Salton Sea if the take is a result of IID's activities. Figure 2-8 shows the geographic area covered by the HCP.

2.2.6.4 Species Proposed For Coverage in the HCP

IID is seeking Incidental Take Permits that would authorize take of 96 listed and unlisted species under ESA and CESA. Table 2-6 (below) lists the common names of the species proposed for coverage by the HCP. Further detail on the individual species and habitats used by the species are found in Section 1.5 of the HCP (Appendix C in this EIR/EIS).

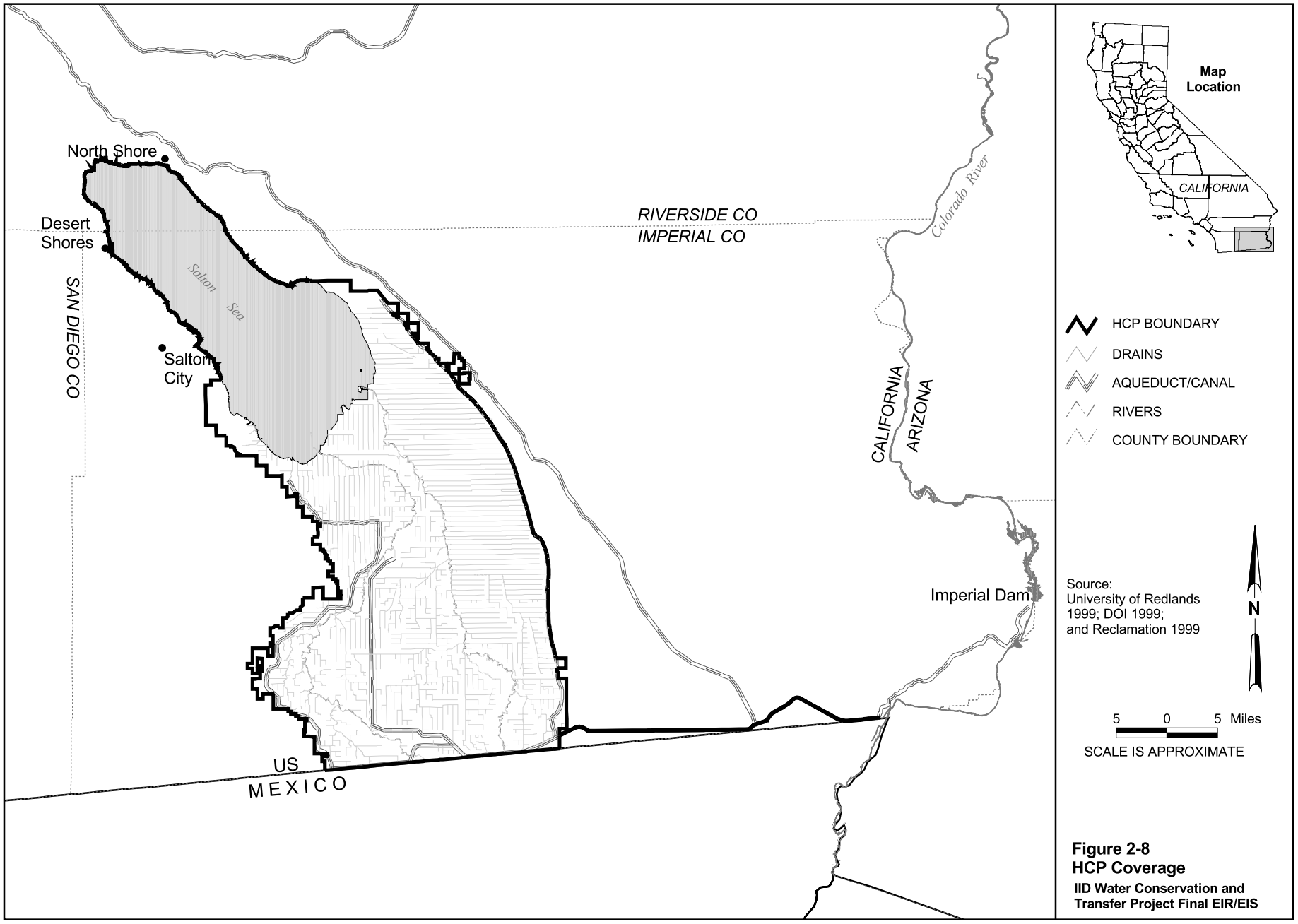


Figure 2-8
HCP Coverage
IID Water Conservation and Transfer Project Final EIR/EIS

TABLE 2-6
Species Proposed for Coverage in the HCP

Species Common Name		
Invertebrates	**Birds (con't.)**	**Birds (con't.)**
Cheeseweed moth lacewing	Reddish egret	Van Rossem's gull-billed tern
Andrew's dune scarab beetle	Yellow warbler	Crissal thrasher
Fish	White-tailed kite	LeConte's thrasher
Desert pupfish	Southwestern willow flycatcher	Arizona Bell's vireo
Razorback sucker	Merlin	Least Bell's vireo
Amphibians and Reptiles	Prairie falcon	**Mammals**
Colorado River toad	Peregrine falcon	Pallid bat
Desert tortoise	Greater sandhill crane	Mexican long-tongued bat
Banded gila monster	Bald eagle	Pale western big-eared bat
Flat-tailed horned lizard	Yellow-breasted chat	Spotted bat
Lowland leopard frog	Least bittern	Western mastiff bat
Western chuckwalla	Loggerhead shrike	California leaf-nosed bat
Couch's spadefoot toad	Laughing gull	Western small-footed myotis
Colorado desert fringed-toed lizard	California black rail	Occult little brown bat
Birds	Long-billed curlew	Southwestern cave myotis
Cooper's hawk	Osprey	Yuma myotis
Sharp-shinned hawk	Black skimmer	Pocketed free-tailed bat
Tricolored blackbird	Bank swallow	Big free-tailed bat
Golden eagle	Gila woodpecker	Nelson's bighorn sheep
Short-eared owl	Elf owl	Jacumba little pocket mouse
Long-eared owl	Wood stork	Yuma Hispid cotton rat
Burrowing owl	Brown-crested flycatcher	Colorado River hispid cotton rat
Aleutian Canada goose	Harris' hawk	**Plants**
Ferruginous hawk	Large-billed savannah sparrow	Peirson's milk-vetch
Swainson's hawk	American white pelican	Flat-seeded spurge
Western snowy plover	Brown pelican	Wiggin's croton
Mountain plover	Double-crested cormorant	Foxtail cactus
Vaux's swift	Summer tanager	Algodones Dunes sunflower
Black tern	White-faced ibis	Munz's cactus
Northern harrier	Purple martin	Giant Spanish needle
Western yellow-billed cuckoo	Vermilion flycatcher	Sand food
Gilded flicker	Yuma clapper rail	Orocopia sage
Black swift	California least tern	Orcutt's aster
Fulvous whistling-duck	Elegant tern	

2.2.6.5 Duration of the HCP

The Incidental Take Permits would have a permit life of 75 years, which is commensurate with the duration of the Proposed Project. During that time, incidental take coverage for species currently unlisted would provide IID with regulatory assurance that no additional mitigation would be required by IID should a covered species become listed in the future. Further information on the duration of the HCP and Incidental Take Permits can be found in Section 1.6 of the HCP (Appendix C in this EIR/EIS).

2.2.6.6 Activities Covered by the HCP

As stated above, the HCP and Incidental Take Permits would cover the activities necessary to implement the Proposed Project that would be undertaken by IID or farmers within the IID water service area. The HCP and Incidental Take Permits also would cover ongoing O&M activities conducted by IID.

The general activities covered by the HCP include:

- Water conservation and water use activities, including irrigation and drainage by farmers, tenants, and landowners to whom IID delivers water;
- Water conservation activities undertaken by IID;
- Activities by IID in connection with the diversion, conveyance, and delivery of Colorado River water to users within IID's water service area; and
- Activities by IID in connection with the collection of irrigation or drainage waters within its service area and conveyance to the Salton Sea.

Further description of the activities covered by the HCP is provided in Section 1.7 of the HCP (Appendix C in this EIR/EIS).

2.2.6.7 Implementation of the HCP Conservation Strategies

IID would implement conservation strategies to avoid, minimize, and mitigate, to the maximum extent practicable, the impact of any take of proposed covered species. In coordination with USFWS and CDFG, IID has developed conservation strategies for the five main habitat types used by proposed covered species within the geographic area covered by the HCP, including: 1) Salton Sea; 2) tamarisk scrub; 3) drain; 4) desert; and 5) agricultural habitats. In addition, specific strategies were developed for desert pupfish, burrowing owl, razorback sucker, and 25 other species. These strategies are summarized below and described in detail in the HCP in Appendix C in this EIR/EIS. Within each of the resource areas, the HCP is evaluated as follows:

- **HCP (IID Water Service Area Portion):** This category includes the conservation strategies in the IID water service area for tamarisk scrub, drain, desert, and agricultural habitats.
- **HCP (Salton Sea Portion**): The Draft EIR/EIS and HCP circulated for public review and comment included the following two approaches to mitigate the potential take of piscivorous birds at the Salton Sea:

- **Approach 1:** Hatchery and Habitat Replacement
- **Approach 2:** Use of Conserved Water as Mitigation

Following the release of the Draft EIR/EIS and HCP, IID continued to work with USFWS and CDFG to refine the details of Salton Sea HCP Approach 1 in an attempt to improve the reliability of mitigation for the potential take of covered piscivorous birds. Many factors raised by USFWS, CDFG, and others during the public comment period were considered, including:

- Pond size and characteristics necessary to attract piscivorous birds and to maintain normal foraging behavior and densities.
- Water quality and foraging density effects on potential outbreaks of avian disease.
- Potential accumulation of selenium and other water quality constituents of concern.
- Potential problems with reduced dissolved oxygen concentrations in summer and fish kills.
- Potential winter die-off of tilapia in ponds because of low temperatures.
- Ability to support adequate densities of fish in the ponds to attract and maintain populations of foraging piscivorous birds.
- Availability of suitable pond construction sites.
- Proximity of the ponds to water delivery and drainage infrastructure.
- Water source and volume requirements.

Although the mitigation strategy in Approach 1 contained many of the elements necessary to adequately mitigate the take of covered piscivorous birds, the USFWS and CDFG representatives concluded that considerable uncertainty regarding the ultimate success of the approach remained. Given this uncertainty and the absence of a suitable back-up position if the foraging pond approach failed, the resource agencies advised IID that Approach 1 likely would not meet the permit issuance criteria. Accordingly, IID removed the development and maintenance of foraging ponds (Approach 1) from consideration. IID would instead rely on avoidance and minimization of impacts through the use of mitigation water (Approach 2) for the Salton Sea. IID has continued to work with USFWS and CDFG to refine the details of this approach, which is referred to in this Final EIR/EIS as the Salton Sea Habitat Conservation Strategy and is described in detail below. The HCP (Appendix C to this EIR/EIS) has been revised to reflect the change in the approach.

HCP (IID Water Service Area Portion)

The habitat conservation strategies associated with the HCP (IID Water Service Area Portion) are described below.

Tamarisk Scrub Habitat Conservation Strategy. The proposed covered species associated with tamarisk scrub habitat are primarily riparian species that find optimal habitat in vegetation consisting of cottonwoods, willows, and other native riparian plant species. Many of the native riparian plant communities in the desert southwest have been replaced by nonnative plant species, particularly tamarisk. Tamarisk scrub habitat is not optimal habitat for the species that use this habitat in the HCP area but is the only available tree-dominated habitat

in the HCP area. Information on proposed covered species that use the tamarisk scrub habitat can be found in Section 2.3.4.2 of the HCP (Appendix C in this EIR/EIS).

The biological goal of the Tamarisk Scrub Habitat Conservation Strategy is to maintain the species composition, relative abundance, and life history functions of covered species using tamarisk scrub habitat within the HCP area. Further details on the approach to the tamarisk scrub habitat conservation strategy and biological goals can be found in Section 3.4.3 of the HCP.

The Tamarisk Scrub Habitat Conservation Strategy consists of compensating for removal of tamarisk scrub and minimizing and avoiding disturbance during construction activities. If a net loss of tamarisk scrub occurs with implementation of the Proposed Project, native tree habitat would be created. Creation of native tree habitat would provide higher quality habitat than that provided by tamarisk scrub habitat, increase habitat diversity in the HCP area, and provide true tree habitat for covered species. Key elements of the strategy are shown below, and details of the implementation of these elements can be found in Section 3.4.4 of the HCP:

- Minimize take, including disturbance, of covered species as a result of construction activities.
- Create or acquire, and protect native tree habitat if tamarisk scrub or native tree habitat is permanently removed as a result of construction activities.

Drain Habitat Conservation Strategy. Wet area habitats created by IID's irrigation and drainage activities are collectively referred to as "drain habitat." Drain habitat in the HCP area occurs in association with IID's drainage and conveyance system, managed marshes on state and federal refuges, private duck clubs, and unmanaged vegetation adjacent to the Salton Sea. Proposed covered species using drain habitat in the HCP area include species that use it exclusively (e.g., Yuma clapper rail) as well as species that use the resources of the habitat but do not depend on it (e.g., northern harrier). A list of the proposed covered species that use the drain habitat is found in Section 2.3.4.3 of the HCP.

The biological goal of the Drain Habitat Conservation Strategy is to maintain the species composition, relative abundance, and life history functions of proposed covered species using drain habitat within the HCP area. Further details on the drain habitat conservation strategy and biological goals are found in Section 3.5.3 of the HCP. Key elements of the strategy are listed below, and details of the implementation of these elements can be found in Section 3.5.4 of the HCP.

- Create at least 190 acres and up to 652 acres of managed marsh habitat to offset water quality effects and compensate for any effects of water-related O&M activities.
- Minimize disturbance and mortality/injury of proposed covered species potentially resulting from dredging the mouths of the New and Alamo Rivers.

The disposal of dredged sediments required to implement the Drain Habitat Conservation Strategy will be subject to permitting requirements contained in the Porter-Cologne Water Quality Control Act (Title 23 of the California Water Code). Pursuant to Water Code Section 13260(a)(1), the project proponent(s) will file an application for a Waste Discharge

Requirements Permit with the Colorado River Basin Regional Water Quality Control Board, and pay the appropriate filing fees. This action will ensure that the project is in compliance with waste disposal requirements of the Regional Board and procedures as outlined in the Porter-Cologne Act and/or Section 401 of the federal Clean Water Act, and will not violate state water quality standards.

Desert Habitat Conservation Strategy. The HCP area supports little native desert habitat. The primary occurrence of native desert habitat in the HCP area is along the AAC within IID's right-of-way and is depicted in Figure 3.2-10 in Section 3.2, Biological Resources, in this EIR/EIS. Two principal desert habitats are supported in the HCP area: creosote bush scrub and dunes. Information on proposed covered species that use desert habitat can be found in Table 2.3-18 of the HCP (Appendix C in this EIR/EIS).

The potential for the Proposed Project to take species using desert habitat is generally low. Activities with the greatest potential to take a covered species are O&M activities along the AAC, East Highline Canal, and Westside Main Canal. The biological goal of the Desert Habitat Conservation Strategy is to maintain viable populations of covered species that occupy desert habitats in the HCP area. This goal will be achieved by avoiding and minimizing the potential for death or physical injury of individuals of the covered species, and improving habitat contiguity and persistence to compensate for changes in habitat quality or quantity caused by construction activities. Further details on the goals of the desert habitat conservation strategy and biological goals can be found in Section 3.6.3 of the HCP. Key elements of the desert habitat conservation strategy are listed below and are explained in detail in Section 3.6.4 of the HCP:

- Implementation of a worker education program.
- Implementation of interim measures to avoid and minimize the potential for take of covered species during O&M and construction activities.
- Refinement of avoidance and minimization measures based on species surveys and adaptive management program.
- Conducting surveys to determine the occurrence of proposed covered species in the right-of-way.
- Protection of habitat outside of the rights-of-way when construction activities reduce the quality or availability of native desert habitat.

Agricultural Habitat Conservation Strategy. Irrigated agricultural land is the dominant land cover type in the Imperial Valley and comprises most of the HCP area. Foraging is the predominant use of agricultural fields by covered species although these areas are also used as resting habitats. Proposed covered species potentially using agricultural habitat in the HCP area include resident breeding species, migratory breeding species, short-term residents during winter or migration, and transient species that are found in the HCP area irregularly during migration or other wanderings. A complete list of the proposed covered species that use the agricultural habitat is found in Section 2.3.4.6 of the HCP.

The biological goal of the agricultural field conservation strategy is to maintain agriculture as the primary economic enterprise in the IID water service area to continue to provide

foraging habitat for proposed covered species associated with agricultural field habitat. This goal is to be achieved by implementing the water conservation and transfer programs for the IID/SDCWA Water Transfer Agreement and the QSA, and the HCP. The IID/SDCWA Transfer Agreement is intended to protect and preserve IID's water rights and the feasibility and economic viability of agriculture production within IID's service area. In addition, the QSA will settle, by consensual agreement, long-standing disputes among the QSA parties regarding the priority and use of Colorado River water by IID, and it will confirm IID's right to implement the water transfers specified in the QSA. Thus, the QSA will enhance the certainty and reliability of Colorado River water supplies available to IID and will assist IID in meeting demands for water for agricultural use, thus facilitating continued agricultural production.

The continued use of the Imperial Valley by proposed covered species associated with agricultural fields depends primarily upon the perpetuation of agricultural production. The regulatory certainty provided by the incidental take authorization and assurances obtained with implementation of the HCP combined with implementation of the water transfer programs would increase the likelihood that agricultural production will remain the predominant land use in the HCP area. Species that exploit agricultural habitats would continue to be supported with implementation of water conservation and transfer programs and HCP because successful implementation of these programs would encourage continued agricultural production. Further details on the agricultural habitat conservation strategy and biological goals are found in Section 3.8 of the HCP.

Desert Pupfish Habitat Conservation Strategy. Desert pupfish occur in many of the drains constructed and maintained by IID that discharge directly into the Salton Sea. Desert pupfish occupying the agricultural drains could be taken as a result of IID's drain maintenance activities or as a result of water quality changes in the drains resulting from implementation of the Proposed Project. The biological goals of the desert pupfish conservation strategy are to maintain viable populations of desert pupfish in the HCP area. This will be accomplished by maintaining or increasing pupfish habitat in IID's drains relative to the current levels (i.e., no net loss) and by minimizing the potential for IID's drain maintenance and construction activities and the water conservation program to result in the incidental take of desert pupfish. As previously described, these goals are augmented and supported by the Salton Sea measures designed to maintain connectivity among drain populations of pupfish and to promote recovery by establishing additional population refugia. The specific goals of the desert pupfish strategy will be achieved by implementing measures that:

- Ensure IID will operate and maintain its drainage system in a manner that will maintain current levels of pupfish drain habitat.
- Minimize the effects of potential increases in the concentration of selenium and possible other contaminants in the drainage system resulting from water conservation.
- Enhance the potential for increasing the amount of pupfish habitat in areas exposed as the Salton Sea recedes.

- Examine the efficacy of modifying drain maintenance activities to reduce the potential for take of pupfish and adjust maintenance activities based on the findings.
- Avoid or minimize the potential for take of pupfish by IID construction activities.

Further information on species-specific conservation strategy for the desert pupfish can be found in Section 3.7.2 of the HCP.

Burrowing Owl Habitat Conservation Strategy. Burrowing owls are found in the earthen banks of agricultural canals and drains in the HCP area. Drain and canal maintenance activities have the greatest potential to affect burrowing owls. Impacts to burrowing owl habitat are expected to occur primarily during IID's O&M activities and during construction of water conservation measures. The overall biological goal of the Burrowing Owl Conservation Strategy is to maintain a self-sustaining population of burrowing owls across the current range of the owl encompassed by the HCP area. The specific objective is to maintain adequate burrow availability and community parameters (e.g., burrowing mammals, foraging habitat), to the extent that IID can influence these parameters, at levels to support the initial distribution and relative abundance of owls on lands covered by the HCP and affected by the covered activities. Key elements of the burrowing owl habitat conservation strategy are the following:

- Implementation of a worker and farmer education program.
- Minimization of the potential for O&M activities to injure individual owls.
- Continuation of maintenance practices that create suitable habitat conditions.
- Installation of additional burrows if construction activities would impact occupied burrows.

Further information on species-specific conservation strategy for the burrowing owl can be found in Section 3.7.1 of the HCP.

Razorback Sucker Conservation Strategy. Razorback suckers are known to occur in the All American and East Highline Canal systems. Razorback suckers in these canals could be impacted when IID dewaters sections of the canals to conduct maintenance and repairs. Under the HCP, IID will ensure that a person qualified to capture and handle razorback suckers and that meets the approval of the USFWS and CDFG is present when canals are dewatered. Any razorback suckers found in the canals would be salvaged and transported to the Colorado River. Further information on this strategy can be found in Section 3.7.3 of the HCP.

Approach to Other Species. Of the 96 species proposed for coverage by the HCP, the USFWS and CDFG identified 25 species for which existing information on the ecology and distribution in the HCP area is limited or that might not occur in the HCP area. These species are listed in Table 3.9-1 of the HCP. The approach to covering these species is to implement a research program to better understand the presence, distribution, and ecological requirements of these species in the HCP area. Based on the results of the research program, IID would implement measures to avoid, minimize, and mitigate the impacts of any take of these activities resulting from the covered activities. Further information on this conservation strategy can be found in Section 3.9 of the HCP.

HCP (Salton Sea Portion)

As noted above, Approach 1 for mitigating the potential take of piscivorous birds in the Salton Sea (Hatchery and Habitat Replacement) was eliminated from consideration after issuance of the Draft EIR/EIS. Approach 2, referred to in this Final EIR/EIS as the Salton Sea Habitat Conservation Strategy, has been further refined from what was described in the Draft EIR/EIS. Briefly, the HCP in Approach 2 described in the Draft EIR/EIS indicated that salinity and elevation changes would be maintained on the baseline trajectory, thereby avoiding salinity increases and elevation decreases resulting from the Project. The HCP (Salton Sea Habitat Conservation Strategy) described in this Final EIR/EIS clarifies that the amount of water used to mitigate Project effects on salinity and the number of years over which that water would be discharged to the Sea will be based on the projection of when salinity in the Sea would reach a level at which tilapia can no longer reproduce. This refinement is described in more detail in "Salton Sea Habitat Conservation Strategy" below.

Salton Sea Habitat Conservation Strategy. The primary potential effects of the covered activities on proposed covered species associated with the Salton Sea relate to an increased rate of salinization and increased rate and magnitude of decline in the surface elevation. In identifying potential mitigation approaches to address the earlier reduction in fish abundance expected from the acceleration of the salinization of the Salton Sea, IID recognized and considered the following:

- The salinity of the Salton Sea will continue to increase in the absence of the proposed water conservation and transfer programs and reduce the suitability of the Salton Sea for fish-eating birds.
- It is unreasonable and impractical for the water conservation and transfer programs to bear the burden of restoring the Salton Sea.
- The level of mitigation should be scaled to the impact attributable to the water conservation and transfer programs.

In accordance with these considerations, IID and others have developed the Salton Sea Habitat Conservation Strategy to minimize and mitigate the impact of the anticipated take of piscivorous birds, as described below. Other approaches that were considered but eliminated from consideration are described in the HCP.

As described in Section 1.4.3 and Section 2.2.3.4 above, IID holds the rights to Colorado River water use in the Imperial Valley in trust for landowners within the IID water service area. The Salton Sea is an agricultural drainage repository that has no legal entitlement to Colorado River water. In order to implement a mitigation strategy which requires the provision of Colorado River water to the Sea or for the benefit of the Sea, IID intends to require confirmation by state and federal authorities that such water use constitutes a reasonable and beneficial use in full compliance with the Law of the River and would not adversely affect IID's entitlement to Colorado River water.

Under the Salton Sea Habitat Conservation Strategy, IID would discharge water to the Salton Sea for the purpose of mitigating the impact of the Proposed Project on salinity in the Sea and avoiding and minimizing the indirect effects on fish and piscivorous birds. The amount of water used to mitigate Project effects on salinity and the number of years over which that water would be discharged to the Sea will be based on the projection of when

salinity in the Sea would reach a level at which tilapia can no longer reproduce. By maintaining suitable salinity conditions in the Sea, IID would ensure continued persistence of fish (and therefore piscivorous birds) for a period consistent with that projected under the Salton Sea Baseline. Under this approach, piscivorous birds would be represented at the Salton Sea for the same period of time with or without the Project.

Identifying Project Impacts. Two elements of uncertainty were considered in defining the increment of impact associated with the water conservation and transfer component of the Project: 1) the uncertainty associated with the projection of when the salinity threshold for reduced fish reproduction (i.e., 60 ppt) would be reached, and 2) the uncertainty associated with the accuracy of the threshold. The uncertainty associated with defining when the threshold would be reached was addressed through the modeling of the salinity in the Salton Sea. To account for the variability in the factors that influence salinity (e.g., hydrology), multiple runs of the Salton Sea model were made, with different variables in each iteration. From these model runs, the probability (mean and 5-/95-percent confidence bounds) of the projected salinity trajectory under the Salton Sea Baseline was determined (Figure 2-9). These projections indicate a 90-percent probability that the actual salinity trajectory will fall between the lines representing the 5- and 95-percent confidence bounds. The mean of the modeled projections indicated that salinity in the Salton Sea would reach 60 ppt under the Salton Sea Baseline in the year 2023. Thus, under the assumption that 60 ppt accurately represents the threshold above which fish production and bird use will decline at the Sea, IID could avoid and minimize the impact of any Project-related take of piscivorous birds by maintaining salinity at levels less than 60 ppt until 2023.

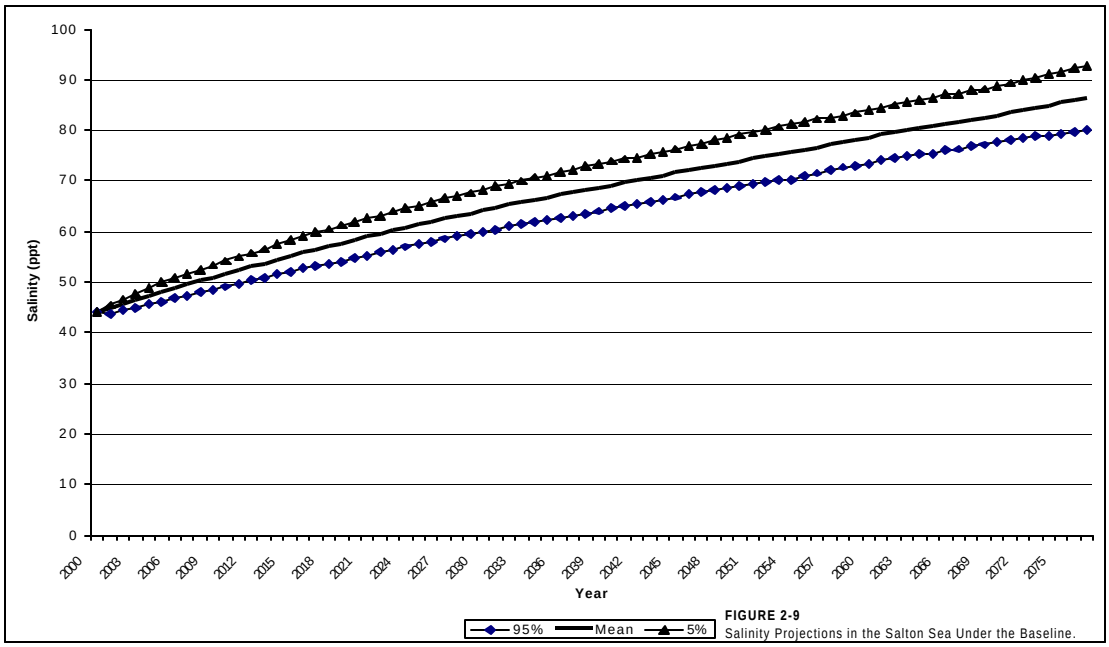


FIGURE 2-9
Salinity Projections in the Salton Sea Under the Baseline.

As described in the HCP, the best available information suggests that growth, survival, and reproduction of tilapia would begin to decline at a salinity of about 60 ppt (Costa-Pierce and Reidel 2000). However, because of the complexity of the Salton Sea ecosystem and other factors that contribute to reproductive success of tilapia, the actual threshold could be lower or higher than 60 ppt. Available data are insufficient to more precisely identify the threshold

or to calculate confidence bounds. Because the uncertainty associated with the salinity threshold for tilapia in the Salton Sea could not be quantified, the salinity threshold could not be addressed quantitatively in the mitigation approach. A salinity of 60 ppt was used because it represents the threshold based on the best professional judgment of scientists very familiar with this species in the Salton Sea, and no information could be found in the scientific literature to suggest that a different threshold should be used. The uncertainty associated with the model predictions was quantified in the form of 5- and 95-percent confidence intervals on the model projections. In order to allow the slowest reasonable increase in salinity under the Baseline to guide the mitigation requirements, the 95-percent confidence interval, which indicates that a salinity of 60 ppt would be exceeded in the year 2030, was used as the basis of the mitigation.

Mitigation Water to the Sea. Under this refined strategy, IID would avoid the potential for take of covered piscivorous birds resulting from implementation of the water conservation and transfer component of the Project by discharging mitigation water to the Salton Sea. The amount of mitigation water would be sufficient to offset the reduction in inflow to the Salton Sea caused by the Proposed Project and to maintain salinity in the Sea at or below 60 ppt until the year 2030. The annual amount of mitigation water would be equal to the actual inflow reduction caused by the water conservation and transfer component of the Project plus or minus an amount of water necessary to maintain the target salinity trajectory. This trajectory would correspond to the salinity projection for the 95-percent confidence bound (see Figure 2-9) until 2030. However, because of the continued threat of potential flooding of lands adjacent to the Salton Sea, IID would not be required to discharge mitigation water to the Sea if the discharge of that water would increase the surface elevation of the Salton Sea above the levels established by the projected elevation change associated with the Proposed Project with implementation of the Salton Sea Habitat Conservation Strategy, as shown on Figure 2-10. That is, IID would not be required to discharge water to the Sea during years in which the elevation of the Sea was at or above the elevation projection for the Proposed Project described in Figure 2-10 because of unforeseen increases in elevation (e.g., increased inflow from a major storm event). In addition, IID could discontinue to discharge water to the Salton Sea for mitigation prior to 2030 if a Salton Sea restoration project were implemented or if it could be demonstrated that tilapia were no longer successfully reproducing in the Sea.

Water Sources. Mitigation water sources to offset Project-related inflow reductions could be acquired by IID by fallowing in the Imperial Valley or by using any other legally permissible water provided to IID for this purpose by other parties to the Quantification Settlement Agreement, by state or federal agencies, or by any other third parties willing to contribute to the mitigation effort, or any combination of the foregoing. Under the Proposed Project, if fallowing is used to create water for transfer, then approximately 30,500 acres of fallowing would be required to create mitigation water for the Salton Sea Habitat Conservation Strategy, as shown on Table 2-7. Table 2-7 also shows the amount of acres that would be required to be fallowed for the Salton Sea Habitat Conservation Strategy for each of the Project Alternatives, which are described below. A conveyance method for delivering mitigation water to the Salton Sea has not been identified.

TABLE 2-7
Summary of Proposed Project and Project Alternatives

Scenario	Salton Sea Effects						Fallowing (Acres)			
	Without Salton Sea Habitat Conservation Strategy			With Salton Sea Habitat Conservation Strategy						
	Year 60 ppt is reached	Salton Sea Elevation in 2077 (ft msl)[1]	Exposed Shoreline in 2077[2] (Acres)	Year 60 ppt is reached	Salton Sea Elevation in 2077 (ft msl)[1]	Exposed Shoreline in 2077[2] (Acres)	For Transfer	For Salton Sea Habitat Conservation Strategy	For IOP	TOTAL
Proposed Project										
300K - (System and On-farm)	2012	-250	49,500	N.F.	N.F.	N.F.	N.F.	N.F.	9,800	9,800
300K - (Fallowing)	2017	-241	15,800	2030	-240	15,100	50,000	30,500	9,800	90,300
Alternative 1										
No Project	2023	-235	N.A.	2023	-235	N.A.	N.A.	N.A.	N.A.	N.A.
Alternative 2										
130K - (On-farm only)	2013	-242	21,700	2030	-242	21,200	None	40,600	9,800	50,400
Alternative 3										
230K - (System/On-Farm Only)	2012	-247	38,500	2030	-246	37,700	None	67,300	9,800	77,100
230K - (Fallowing)	2018	-239	11,600	2030	-239	11,100	38,300	25100	9,800	73,200
Alternative 4										
300K - (Fallowing)	2017	-241	15,800	2030	-240	15,100	50,000	30,500	9,800	90,300

Notes:
[1] Salton Sea elevations derived from the Salton Sea Accounting Model (SSAM) developed by the Bureau of Reclamation. Elevations rounded to the nearest whole number.

[2] Additional increment as compared to the No Project baseline.

N.A. = Not Applicable
N.F. = Not Feasible

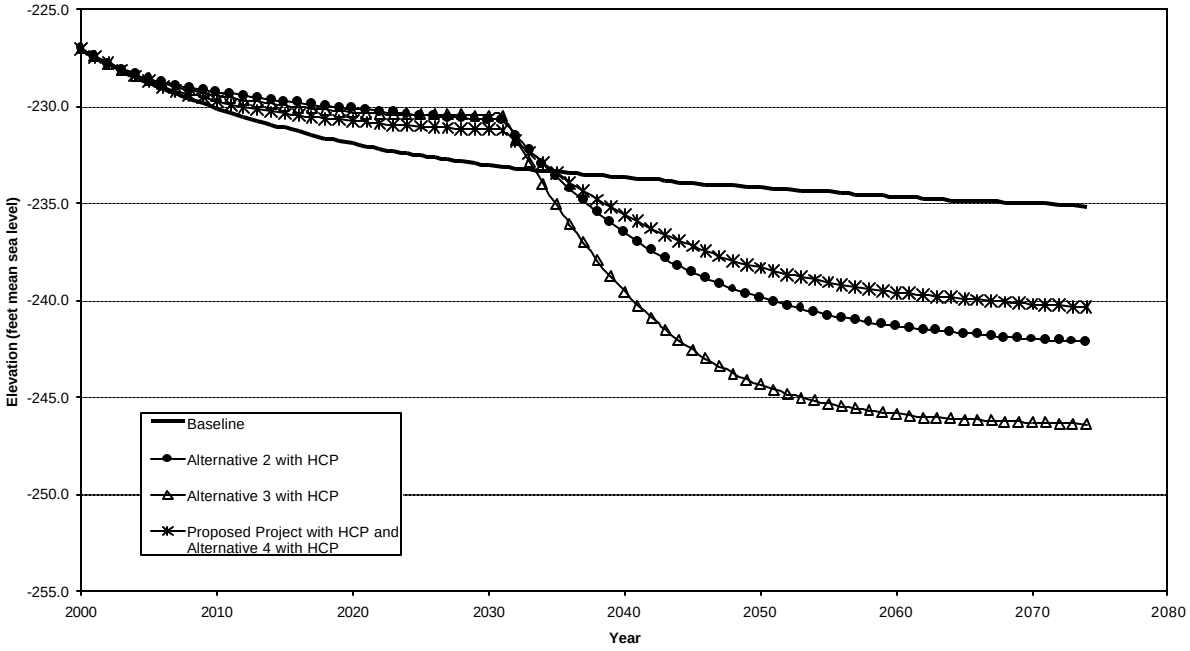


FIGURE 2-10
Projected Surface Elevation under the Baseline and Each Alternative with Implementation of the Salton Sea Habitat Conservation Strategy

Implementation of the Salton Sea Habitat Conservation Strategy in concert with the use of only on-farm and system-based conservation measures to produce water for transfer is not currently considered to be practicable if fallowing by IID is relied upon to produce mitigation water for the Salton Sea. These "efficiency conservation" measures require a 1-to-1 ratio of mitigation water to the Sea. That is, for every acre-foot of water conserved by efficiency conservation measures for transfer, an acre-foot would need to be provided to the Sea in order to meet the obligations of the Salton Sea Habitat Conservation Strategy. The combination of efficiency conservation required to produce 300 KAFY for transfer plus conservation by fallowing by IID to produce the related amount of mitigation water to meet the obligations of the Salton Sea Habitat Conservation Strategy has not been assessed in this Final EIR/EIS. It is noted, however, that the source of mitigation water to implement the Salton Sea Habitat Conservation Strategy is not limited to fallowing by IID or other Colorado River water provided by IID. If IID elects to pursue implementation of efficiency conservation together with the Salton Sea Habitat Conservation Strategy, additional environmental analysis may be required depending on the quantity and source of mitigation water. However, some combination of efficiency conservation measures and fallowing could potentially be implemented with the Salton Sea Habitat Conservation Strategy, although the amount of each that would be required to feasibly satisfy the Salton Sea Habitat Conservation Strategy has not been determined.

The use of water obtained by IID from sources outside the Imperial Valley could require subsequent environmental review. The amount of water discharged to the Sea would be calculated annually based on the reduction in inflows resulting from the conservation methods used to generate water for transfer and the proportion of efficiency conservation

(e.g., system and on-farm) and fallowing used. As previously described, the amount of water discharged annually would match the anticipated Project-related reduction in inflow plus or minus any increment necessary to maintain the salinity trajectory, but not to exceed the elevation levels projected for the Project, as described above.

Salton Sea Habitat Conservation Strategy Summary. By maintaining suitable salinity conditions in the Sea, IID would ensure continued persistence of fish (and therefore piscivorous birds covered by the HCP) for a period consistent with that projected under the Salton Sea Baseline. Under this approach, the level and duration of use of the Salton Sea by piscivorous birds would be expected to be the same as under the Salton Sea Baseline. In addition, maintaining the salinity trajectory associated with the 95-percent confidence bound until 2030 likely would result in a deceleration in the rate of salinization in the Sea. Any improvement over the Salton Sea Baseline likely would provide indirect benefits to salt-sensitive species, including several of the sport fish species that are the basis for the recreational sport fishery.

Avoiding salinity impacts would also result in the avoidance of biological impacts associated with changes in surface elevation. Because water surface elevation in the Sea under this strategy would be held at or above the Salton Sea Baseline projections up to 2030, conservation-related changes in the use of nesting islands by covered species would not occur as a result of the Project. Likewise, potential impacts on the tamarisk scrub community adjacent to the Sea (e.g., shoreline strand) would not be affected by the Project prior to 2030, and might be avoided altogether. Implementation of this strategy also provides the ancillary benefit of allowing time for a Salton Sea restoration project to be developed.

2.2.6.8 Other HCP Commitments

As part of the HCP, IID would implement a monitoring and adaptive management program to assess the effectiveness of the HCP conservation measures and guide management decisions to meet the HCP's overall conservation goals. Appendix C in this EIR/EIS contains a detailed description of the monitoring and compliance measures that would be implemented under the HCP. Funding assurances are also included to guarantee that the HCP conservation measures are successfully implemented. The funding assurances also address changed circumstances that could arise during the life of the Incidental Take Permits.

2.3 Project Alternatives

2.3.1 Selection of Project Alternatives

Project alternatives were selected in accordance with both the CEQA Guidelines and NEPA requirements. A comprehensive alternatives identification, screening, and selection process was conducted, and an Alternatives Analysis Report (see Appendix D) was written. The Alternatives Analysis Report includes a detailed description of CEQA/NEPA requirements for alternatives, how alternatives were identified, potential alternatives, screening criteria used for evaluation of alternatives, and rationale for including or excluding each of the alternatives for further analysis in this EIR/EIS. The analysis evaluated 14 alternatives

(including the No Project alternative), four of which were determined to: (1) meet most of the Project objectives; (2) have the potential to reduce impacts when compared to the Proposed Project; and/or (3) be potentially feasible. These four alternatives are carried forward for analysis in this EIR/EIS and are described below.

Section 4, Alternatives Comparison, compares each of the alternatives, including the No Project, against the Proposed Project, and identifies the environmentally superior alternative as required by CEQA. As required by NEPA, the alternatives are evaluated at a comparable level of detail in each of the resource sections in Section 3. Section 4 also includes a summary of the alternatives that were considered but eliminated from further consideration. As stated above, these eliminated alternatives are also discussed in detail in the Alternatives Analysis Report, which is included in this EIR/EIS as Appendix D.

2.3.2 Description of Alternatives

This section presents the alternatives to the Proposed Project, including the HCP, that are assessed in this EIR/EIS. Table 2-7 provides a summary of key aspects of the Proposed Project and each of the Project Alternatives. Alternatives are described in detail in the following sections.

2.3.2.1 Alternative 1: No Project

The No Project alternative is the scenario under which the Proposed Project and HCP are not constructed, permitted, or implemented. The No Project alternative is not the environmental status quo. Rather, it is defined as "existing environmental conditions" (see Section 3), as well as what would reasonably be expected to occur in the foreseeable future if the Proposed Project were not approved, based on current plans and consistent with available infrastructure (CEQA Guidelines, §15126.6[e][2]). Under the No Project alternative, the IID/SDCWA Transfer Agreement would not be implemented, the QSA would not be finalized and implemented, and the HCP would not be finalized and implemented. Additional, assumed, and future conditions through 2077 under the No Project alternative are described below. Additional information on the No Project alternative in relation to the HCP can be found in Section 6.1 of the HCP (see Appendix C). Additional information on the No Project alternative in relation to the hydrology and water quality of the LCR and Salton Sea can be found in Section 3.1, Hydrology and Water Quality.

Succeeding sections describe the conditions in each geographic subregion that were assumed to be in effect under the No Project alternative for purposes of the assessment contained in this EIR/EIS.

Conditions Affecting the LCR, IID Water Service Area, and Salton Sea

- Major components of the California Plan would not be implemented.
- The IA would not be executed , nor would the IOP be adopted or the biological conservation measures implemented for the LCR that are described in the IA EIS.
- The Secretary would continue to make deliveries of Colorado River water subject to existing legal requirements, including the Law of the River and the existing priority system. 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 Project 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 of 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 Project alternative.

- The Interim Surplus Guidelines would be suspended and surplus determinations would be based upon the 70R Strategy until such time as California completes all actions and complies with reductions in water use identified in Section 5(c) of the Interim Surplus Guidelines Record of Decision. 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 Guidelines will be suspended and determinations will be based on the 70R Strategy. Section 5(c) also provides conditions regarding reinstatement of the Interim Surplus Guidelines if the missed benchmark quantities are later met.
- IID would continue to divert Colorado River water in accordance with its legal entitlement. However, the diversion of Colorado River water in addition to the quantities historically diverted by IID would be necessary for leaching salt as a result of increasing levels of salinity in the Colorado River.
- Aquifer depletion in the CVWD service area would continue through year 2077.
- The 1988 IID / MWD Agreement, which provides for the conservation and transfer by IID to MWD of 106 KAFY, would continue in accordance with the agreement but without exercise of either party's early termination rights after 35 years. In addition, the 1989 IID / MWD / Palo Verde Irrigation District (PVID) / CVWD Approval Agreement and MWD / CVWD 1989 Agreement to Supplement Approval Agreement, which have been implemented, would continue to be implemented.
- The construction projects embodied in the QSA that would help conserve Colorado River water, such as lining the AAC and the Coachella Canal, would lose $200 million in state funding and would likely not be implemented; therefore, water would not be made available from canal lining projects to facilitate implementation of the San Luis Rey Indian Water Rights Settlement Act.
- Existing cropping and water delivery patterns would substantially continue through year 2077.
- As described in Section 3.1, inflows to the Salton Sea are expected to decrease and the water quality of the Sea is expected to decline as a result of natural processes. In addition, salinity loads would naturally increase over time compared to historic loads.
- Biological conditions at the Salton Sea would change, such that key invertebrates and fish that maintain a sportfishery and provide forage for piscivorous and non-piscivorous birds would be eliminated.

Conditions Affecting the SDCWA Service Area

- SDCWA would rely on MWD to meet SDCWA's long-term water supply objectives and to meet the requirements of local general plans and system demands in future years. In addition, no increase in the reliability of water supplies available to SDCWA in water shortage years would occur.
- Within the area served by MWD, water rationing could occur during dry years unless additional supplies are secured and delivered through the MWD system.
- The MWD-SDCWA Exchange Agreement, which provides for the conveyance via the CRA of water transferred from IID to SDCWA, would be terminated.
- Water users served by SDCWA could bear significantly higher costs to support development of new MWD water supplies because other supply sources in the SDCWA service area are extremely limited and the availability of other imported supplies is unknown (see Appendix D, Alternatives Screening Analysis).

Conditions Affecting QSA Objectives

- Major components of the California Plan (i.e., the water transfers and quantified diversion caps included in the Proposed Project) would not be implemented, and the key enforceable and binding provisions of the QSA would not be implemented (CRB 2000). As a result, California would need to use other methods to achieve its goal to live within its legal, normal-year allocation of Colorado River water.
- The reliability of Colorado River water supplies to SDCWA, CVWD, and MWD, which is an integral part of the QSA, would not increase. These water agencies would be required to develop other water supply options to meet demand based on existing approved general plans and local specific area plans. This could, in turn, result in continued dependence on overdrafted groundwater supplies in the CVWD service area. Reduced deliveries to MWD could result in the CRA carrying approximately half of its capacity.
- IID would not be obligated to limit its annual diversions of Priority 3 Colorado River water to 3.1 MAFY pursuant to the contractual forbearance set forth in the IID/SDCWA Transfer Agreement and the QSA.
- Water would likely not be available from the AAC lining to facilitate implementation of the San Luis Rey Indian Water Rights Settlement Act, and there would be no consensual agreement among IID, CVWD, and MWD to divide the responsibility of satisfying the demands of miscellaneous and Indian present perfected rights.

2.3.2.2 Alternative 2: Water Conservation and Transfer of Up To 130 KAFY to SDCWA (On-farm Irrigation System Improvements As Exclusive Conservation Measure)

Implementation of Alternative 2 is similar to the Proposed Project as described in Section 2.2. However, Alternative 2 is a scaled back version of the Proposed Project/HCP and includes only the minimum amount of water that could be transferred under the terms of the IID/SDCWA Transfer Agreement, which is 130 KAFY. The 130 KAFY would be conserved exclusively by on-farm irrigation system improvements in the IID water service

area. It is important to note that Alternative 2 would not comply with the QSA (if the QSA is finalized) because no water would be made available for transfer to either CVWD or MWD. Under Alternative 2, the water conveyance methods of the Proposed Project would also apply (i.e., water transferred from IID to SDCWA would be diverted at Parker Dam and conveyed via the CRA).

This alternative was developed to reduce the impacts of the Proposed Project by reducing the amount of water conserved. As described in Section 3, implementation of the water conservation and transfer components of the Proposed Project would result in reduced inflows to the Salton Sea. This reduction in flow to the Sea is directly related to the amount of water conserved under the Proposed Project as well as to the particular conservation measures that would be implemented under the Proposed Project. Under Alternative 2, less water would be conserved and transferred than under the Proposed Project. The elevation of the Salton Sea in 2077 under Alternative 2 (with implementation of the Salton Sea Habitat Conservation Strategy) is projected to be approximately –242.1 feet msl.

Alternative 2 was also anticipated to have an incrementally lower level of take of listed species and their habitats and less impact when compared to the amount of water conserved under the Proposed Project. However, reduced conservation and transfer amounts would not substantially reduce the level of take or mitigation requirements for biological resources. Potential impacts along and within IID's canal and drainage system, and in and around the Salton Sea would be substantially similar to those under the Proposed Project. Habitat conditions along the AAC would remain relatively unchanged. IID's ongoing O&M activities would be the same as those outlined in the proposed HCP. As a result, all of the conservation strategies would be substantially the same as under the Proposed HCP for the IID water service area portion. Additional information about this alternative is included in the HCP (see Appendix C). For the Salton Sea Habitat Conservation Strategy, if fallowing within IID were used as the source of mitigation water, approximately 40,600 acres would be required as shown on Table 2-7.

2.3.2.3 Alternative 3: Water Conservation and Transfer of Up To 230 KAFY to SDCWA, CVWD, and/or MWD (All Conservation Measures)

Alternative 3 represents a middle level of conservation between the Proposed Project and Alternative 2 by providing for water conservation and transfer of up to 230 KAFY using any type of conservation measure, including on-farm irrigation system improvements, water delivery system improvements, and/or fallowing. The first 130 KAFY would be transferred to SDCWA, and the remaining 100 KAFY would be conserved and transferred either to SDCWA or to CVWD and/or MWD. Water transferred from IID to SDCWA or MWD would be diverted at Parker Dam and conveyed via the CRA. Water transferred to CVWD would remain in the LCR; diversion would occur at Imperial Dam and water would be conveyed to the CVWD service area via the Coachella Canal.

As described under Alternative 2, alternatives were developed to minimize Project-related impacts. Under Alternative 3, the reduced amount of conservation is intended to minimize the impact of reduced flows to the Sea, as well as to minimize related impacts that could occur in relation to reduced flows to the Sea when compared to the Proposed Project. Under this alternative, less water would be conserved and transferred than under the Proposed Project. As shown on Table 2-7, if system and on-farm conservation methods are used to

conserve water for transfer under Alternative 3, approximately 67,300 acres would be required to be fallowed if fallowing within the IID water service area were used to create mitigation water for the Sea to meet the obligations of the Salton Sea Habitat Conservation Strategy, resulting in a 2077 Salton Sea elevation of –246.4 feet msl. If fallowing is used to conserve water for transfer, approximately 25,100 acres would be required to be fallowed if fallowing within the IID water service area was used to create mitigation water to meet the obligations of the Salton Sea Habitat Conservation Strategy, resulting in a 2077 Salton Sea elevation of -239 feet msl.

This alternative was also anticipated to have an incrementally lower level of take and less impact relative to the amount of water conserved under the Proposed Project. However, as described under Alternative 2, reduced conservation and transfer amounts would not substantially reduce the level of take or mitigation requirements for biological resources. Potential impacts along and within IID's canal and drainage system, and in and around the Salton Sea would be substantially similar to those under the Proposed Project. Habitat conditions along the AAC would remain relatively unchanged. IID's ongoing O&M activities would be the same as those outlined in the proposed HCP. As a result, all of the conservation strategies would be substantially the same as under the Proposed HCP for the IID water service area portion. Additional information about this alternative is included in the HCP (see Appendix C).

2.3.2.4 Alternative 4: Water Conservation and Transfer of Up To 300 KAFY to SDCWA, CVWD, and/or MWD (Fallowing As Exclusive Conservation Measure)

Alternative 4 assumes that fallowing, rather than other conservation methods, would be the exclusive measure used to conserve water. Although fallowing is a potential component of the water conservation program anticipated by the Proposed Project, fallowing as the exclusive conservation measure under Alternative 4 has been isolated under a separate alternative to identify the effects of fallowing separately and to provide a comparison with the variability of conservation methods allowed under the Proposed Project's water conservation program.

Fallowing of farmland could be used to meet water conservation objectives because it could reduce the amount of irrigation water that IID would be required to deliver to its water service area. Fallowing is defined in Section 2.2.3.4 as the non-use of farmland for crop production to conserve irrigation water, on a rotational (less than four years) or non-rotational (four years or more) basis. As described in that section, there are a number of ways to implement fallowing to achieve water conservation.

As discussed in Section 2.2.3.4, to implement Alternative 4, restrictions on fallowing in the IID/SDCWA Transfer Agreement would need to be waived or modified to allow fallowing as an acceptable method of on-farm water conservation under landowner contracts. The IID Board would also have to rescind or modify its adopted policies that do not currently support fallowing by landowners for purposes of transferring water.

Fallowing could be undertaken by landowners on land they own, lease, or purchase; or, fallowing could be undertaken by IID on land it owns, leases, or purchases. The purpose of the analysis of Alternative 4 is to assess the potential environmental impacts of fallowing rather than to predict the exact method of fallowing or by whom it would be done.

In addition, as described under Alternatives 2 and 3, alternatives were developed to reduce Project-related impacts. Under Alternative 4, the use of fallowing as a conservation measure would minimize the impact of reduced flows to the Sea under the Proposed Project. However, as described under Alternatives 2 and 3, potential impacts along and within IID's canal and drainage system and in and around the Salton Sea would be substantially similar to those under the Proposed Project. As a result, all of the conservation strategies would be substantially the same as under the Proposed HCP for the IID water service area portion. Additional information about this alternative is included in the HCP (see Appendix C). Under Alternative 4, the fallowing of approximately 50,000 acres would be required to create 300,000 KAFY of water for transfer, and the fallowing of 30,500 acres would be required to generate mitigation water to the Sea to meet the obligations of the Salton Sea Habitat Conservation Strategy, as shown on Table 2-7. The elevation of the Sea in 2077 with implementation of the Salton Sea Habitat Conservation Strategy would be –240.3 feet msl.