4.0 Alternatives Comparison

4.1 CEQA Requirements for Alternatives

CEQA requires that a reasonable range of feasible alternatives be evaluated in an EIR. The CEQA Guidelines, Section 15126.6, Consideration and Discussion of Alternatives to the Proposed Project, specify the following:

“(a) Alternatives to the Proposed Project. An EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decisionmaking and public participation. An EIR is not required to consider alternatives which are infeasible. The lead agency is responsible for selecting a range of project alternatives for examination and must publicly disclose its reasoning for selecting those alternatives. There is no ironclad rule governing the nature or scope of the alternatives to be discussed other than the rule of reason. (Citizens of Goleta Valley v. Board of Supervisors (1990) 52 Cal.3d 553 and Laurel Heights Improvement Association v. Regents of the University of California (1988) 47 Cal.3d 376).”

4.2 NEPA Requirements for Alternatives

NEPA also requires that alternatives to the Proposed Project be evaluated in an EIS. The Council on Environmental Quality Regulations for Implementing NEPA, Section 1502.14, Alternatives Including the Proposed Project, specifies the following:

“This section is the heart of the environmental impact statement. Based on the information and analysis presented in the sections on the Affected Environment (Sec. 1502.15) and the Environmental Consequences (Sec. 1502.16), it should present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decision maker and the public. In this section agencies shall:

(a) Rigorously explore and objectively evaluate all reasonable alternatives, and for alternatives that were eliminated from detailed study, briefly discuss the reasons for their having been eliminated.

(b) Devote substantial treatment to each alternative considered in detail including the Proposed Project so that reviewers may evaluate their comparative merits.

(c) Include reasonable alternatives not within the jurisdiction of the lead agency.

(d) Include the alternative of no action.
(e) Identify the agency’s preferred alternative or alternatives, if one or more exists, in the draft statement and identify such alternative in the final statement unless another law prohibits the expression of such a preference.

(f) Include appropriate mitigation measures not already included in the Proposed Project or alternatives.

4.3 Alternatives Evaluated in this Draft EIR/EIS

The alternatives evaluated in this Draft EIR/EIS were selected based on an analysis that considered 14 alternatives against several criteria. The surviving alternatives included those that were shown to be able to reduce impacts compared to the Proposed Project, that were shown to be feasible, and that met most of the project objectives. The entire Alternatives Analysis is included as Appendix D to this Draft EIR/EIS. A summary of the analysis showing each alternative considered, how it performed against the evaluation criteria, and why it was included for or excluded from further analysis in this Draft EIR/EIS is shown in Table 4-4. Alternatives considered but eliminated are further discussed below in Section 4.8.

The alternatives evaluated in this Draft EIR/EIS include the Proposed Project and Alternatives 1 through 4, each of which is summarized below. Table 4-1 shows the key elements of each alternative, and Table 4-2 shows selected environmental effects. The effects on the Salton Sea are included in this table as they are the major environmental effects of the Proposed Project and alternatives. These effects help to differentiate the alternatives from one another according to each alternative’s ability to reduce impacts when compared to the Proposed Project. A more detailed comparison of environmental resources that would experience significant unavoidable impacts is shown in Table 4-3.

4.3.1 Proposed Project

The Proposed Project is described in detail in Section 2 of this Draft EIR/EIS. This section below summarizes the major components of the Proposed Project, including the following:

- Voluntary commitment by IID to limit its annual diversions of Priority 3 Colorado River water to 3.1 MAFY.

- Change in the point of diversion for 300 KAFY on the LCR from Imperial Dam to Parker Dam.

- Conservation by IID of water through a combination of on-farm and water delivery system improvements and falling in the IID water service area.

- Water transfer by IID to SDCWA under the terms of the IID/SDCWA Transfer Agreement.

- Water transfer by IID to SDCWA, CVWD, and/or MWD under the terms of the QSA.

- Physical conveyance of conserved water and associated approvals needed from Reclamation.

- Implementation of the HCP.
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</thead>
<tbody>
<tr>
<td>3.1 MAFY</td>
<td>Any combination of conservation measures to conserve up to 300</td>
<td>300</td>
<td>200</td>
<td>Total of 100</td>
<td>Yes</td>
<td>Yes&lt;sup&gt;2&lt;/sup&gt;</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
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<td>0</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Alternative 3: 230 KAFY</td>
<td>Any combination of conservation measures to conserve up to 230</td>
<td>230</td>
<td>130</td>
<td>Total of 100</td>
<td>Yes</td>
<td>Yes&lt;sup&gt;2&lt;/sup&gt;</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Alternative 4: 300 KAFY</td>
<td>Any combination of conservation measures to conserve up to 230</td>
<td>300</td>
<td>200</td>
<td>Total of 100</td>
<td>Yes</td>
<td>Yes&lt;sup&gt;2&lt;/sup&gt;</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Alternative 2: 130 KAFY</td>
<td>130</td>
<td>130</td>
<td>0</td>
<td>0</td>
<td>Yes</td>
<td>Yes&lt;sup&gt;2&lt;/sup&gt;</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>3.43 MAFY</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
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<tr>
<td>Alternative 1: No Project</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

<sup>1</sup>The maximum amount of conservation that can be achieved by on-farm irrigation system improvement measures is 230 KAFY, and the maximum amount of conservation that can be achieved by water delivery system improvements is 100 KAFY (see IIDSS in Appendix E).

<sup>2</sup>Assumes that the IID/SDCWA Transfer Agreement would be amended to allow fallowing to conserve water for transfer.
### TABLE 4-2
Major Environmental Effects of Proposed Project and Alternatives

<table>
<thead>
<tr>
<th>Alternative</th>
<th>Biological Effects</th>
<th>Salton Sea Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Year Tilapia Life Cycle Impacted</td>
<td>Year Pupfish Life Cycle Impacted</td>
</tr>
<tr>
<td>Existing (2002)</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Proposed Project (2077)</td>
<td>2012</td>
<td>2016</td>
</tr>
<tr>
<td>Alternative 1: No Project (2077)</td>
<td>2023</td>
<td>2042</td>
</tr>
<tr>
<td>Alternative 2 (2077)</td>
<td>2013</td>
<td>2019</td>
</tr>
<tr>
<td>Alternative 3 (2077)</td>
<td>2012</td>
<td>2017</td>
</tr>
<tr>
<td>Alternative 4 (2077)</td>
<td>2017</td>
<td>2025</td>
</tr>
</tbody>
</table>

(Reclamation 2001b)

### 4.3.2 Alternative 1: No Project

The No Project alternative is the scenario under which the Proposed Project is not permitted, constructed, or implemented. The No Project alternative is not the environmental status quo. Rather, it is defined as “existing environmental conditions” (see Chapter 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 in detail in Section 2.3.2.1. 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).

For this EIR/EIS, the No Project alternative plays a key role in the evaluation and comparison of the Proposed Project and alternatives. Comparing the impacts of the Proposed Project and alternatives to the No Project condition of the Sea (projected condition in year 2077) allows us to predict what the added increment of impact to the Sea would be for each alternative.

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

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).

Alternative 2 was developed to provide an alternative to the Proposed Project that could reduce the impacts of the Proposed Project by reducing the amount of water conserved. As described in Chapter 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.

Alternative 2 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, 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 as 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. Additional information about this alternative is included in the HCP (see Appendix C).

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

Alternative 3 provides 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 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 Alternative 3, less water would be conserved and transferred than under the Proposed Project.

In addition, this alternative was also anticipated to have an incrementally lower level of take and less impact than 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 as 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. Additional information about this alternative is included in the HCP (see Appendix C).

4.3.5 Alternative 4: Water Conservation and Transfer of Up To 300 KAFY to SDCWA, CVWD, and/or MWD Service Areas (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 part of the water conservation program anticipated by the Proposed Project, fallowing as the exclusive conservation measure has been isolated under Alternative 4 to identify the effects of fallowing separately.

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 short-term or long-term 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, implementation of Alternative 4 would require that restrictions on fallowing in the IID/SDCWA Transfer Agreement 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 by IID on land it owns, leases, or purchases. The purpose of the Alternative 4 analyses 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.

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 as under the Proposed Project. As a result, all of the conservation strategies would be substantially the same as under the Proposed HCP. Additional information about this alternative is included in the HCP (see Appendix C).

4.4 HCP

The HCP for the Proposed Project and alternatives is an inherent part of the project and is described in Section 2.2.6.1 Habitat Conservation Plan Overview and in detail in Appendix C. There is one HCP for the project; however, for environmental analysis purposes, it is useful to divide the HCP into the IID Water Service Area Portion and the Salton Sea Portion.

IID has prepared the HCP 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. An Incidental
Take Permit allows a project applicant to conduct otherwise lawful activities that incidentally harm (or “take”) federal and/or state listed species, either through habitat modification or direct injury. The federal- and/or state- listed species that are included in IID’s HCP are called “covered species.” These covered species are discussed in Section 2.2.6.4 and further defined in Appendix C.

4.5.1 HCP (IID Water Service Area Portion)

The IID Water Service Area Portion of the HCP mitigates for potential take associated with implementation of the IID/SDCWA Transfer Agreement, the QSA, and/or continuation of its routine O&M activities within the IID water service area. 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 and alternatives. Issuance of an Incidental Take Permit by USFWS constitutes a federal action that requires evaluation under NEPA. The IID Water Service Area and AAC Portion of the HCP includes conservation strategies for tamarisk scrub, drain, desert and agricultural habitats, which are described in detailed in Section 2.2.6.7, Implementation of the HCP Conservation Strategies and in the HCP (Appendix C). The HCP actions associated with the IID Water Service Area Portion are part of the Proposed Project and alternatives 2, 3, and 4.

4.5.2 HCP (Salton Sea Portion) Approach 1: Hatchery and Habitat Replacement

Under this approach proposed by USFWS and CDFG, IID would implement a phased approach for maintaining fish to provide foraging opportunities for piscivorous birds at the Salton Sea. In the first phase, IID would construct a hatchery to ensure continued availability of tilapia as forage base for piscivorous birds. It is expected that as salinity in the Salton Sea increases, tilapia reproduction would be affected before adult survival is threatened. IID would stock tilapia in the Salton Sea when the CDFG determines that natural reproduction of tilapia has ceased in the Salton Sea based on annual young-of-year abundance surveys conducted by CDFG. IID would continue stocking tilapia in the Salton Sea for as long as they could continue to survive and grow or until the Salton Sea Restoration Project was funded and its implementation initiated. If the Salton Sea Restoration Project was initiated, that project could fund continued operation of the stocking program until the salinity level of the Salton Sea was low enough to allow fish to naturally reproduce.

The hatchery element would be intended to extend the period of time during which fish would be present in the Salton Sea. Juvenile and adult tilapia are capable of withstanding high salinity levels; tilapia have been collected at salinity as high as 120 ppt. However, the ability of tilapia to reproduce is more sensitive to salinity. At salinity above 60 ppt, tilapia reproduction has been predicted to decline. The hatchery under this approach would be used to replace reproduction of tilapia lost in the Sea because of high salinity. Because juvenile and adult tilapia can tolerate higher salinity levels, the hatchery would extend the time during which the Sea supports fish. This extension would have the dual benefit of continuing to support fish as prey for fish-eating birds and providing additional time for implementation of a long-term restoration project.

Hatchery operations would likely be located near the Salton Sea on land not currently under cultivation. The acreage could vary depending on the level of production needed to augment natural reproduction. For the purpose of planning, it is anticipated that up to 50 acres would be
needed to accommodate the hatchery operation. The facility would be designed to ensure that any discharge hatchery effluent to the Salton Sea would be adequately treated to avoid adverse water quality impacts. Water requirements would vary depending on the volume of production.

The second component of the approach would be initiated if a long-term restoration Project was not implemented before the Sea could no longer support fish. Under this component of the approach, IID would create 5,000 acres of ponds at the Salton Sea that would support fish and provide a forage base for piscivorous birds. The purpose of these ponds would be to maintain some foraging opportunities at the Salton Sea for piscivorous birds for the remainder of the permit term. The objective of creating ponds would be to maintain a level of foraging habitat that would help ensure that piscivorous birds would continue to be represented at the Salton Sea. IID would stock the ponds with tilapia (from continued hatchery operations) and manage the ponds to provide foraging opportunities for covered piscivorous bird species for remainder of the 75-year permit term. If the Salton Sea Restoration Project were implemented at any time during the term of the permit, IID would contribute the remaining funding committed to the creation and operation of a hatchery and for creation and management of ponds to the Salton Sea Restoration Project.

The ponds would be about 5 feet deep and constructed using berms. To obtain the soil characteristics necessary for berm construction, the ponds would be constructed on farmland. The construction cut and fill would be balanced such that transport of soil to or from the construction site would not be required. The ponds would likely be constructed along the southern edge of the Salton Sea in land blocks 160 and 640 acres in size. The water supply for the mitigation ponds would be of the same quality as that delivered to farmers. Based on preliminary calculations performed by CDFG, close to 30 KAFY of water would be required to maintain the ponds. The water associated with the 5,000 acres of farmland removed from production to construct the ponds would be sufficient to support the ET losses in the ponds if the historic water use on those acres was equivalent to about 6 AFY per year. If historic water use was less, additional conservation could be required to generate water necessary to maintain the ponds. In addition to the water necessary to support the ponds, additional water could be necessary to provide adequate water circulation in the ponds. The requirements for water circulation would not be defined until the specific pond locations were identified and the characteristics of the pond system design developed. Any impacts associated with obtaining water to maintain circulation in the ponds would be addressed in subsequent environmental documentation.

This acreage requirement and general approach would remain the same regardless of the alternative selected. However, the timing of hatchery operation and possible pond construction would vary depending on the amount of water conserved. Current salinity projections suggest that hatchery operations to augment fish reproduction could be necessary as early as 2012 under conservation of 300 or 230 KAFY and 2013 for conservation of 130 KAFY. Pond construction, if needed, would take place sometime after 2012, depending on how long fish survive in the Salton Sea. Tilapia have been recorded at a salinity of 120 ppt, although the ultimate salinity tolerance of tilapia at the Salton Sea could be less. If tilapia were to persist in the Salton Sea until the salinity reaches 120 ppt, salinity projections suggest that pond construction under conservation of 300 KAFY would not be necessary until about 2052;
conservation of 230 KAFY would not occur until 2073. With conservation of 130 KAFY, tilapia would persist through the entire 75 years of the HCP term. For the purpose of evaluating potential impacts of implementing this approach, however, it was assumed that the 5,000 acres of ponds would be constructed at some time during the permit term. The precise timing of the construction would not substantially influence the impact of implementing this component of the approach.

In addition to the measures addressing impacts to piscivorous birds, IID would implement measures to address:

- Potential impacts to pupfish resulting from the acceleration of salinization of the Sea.
- Potential impacts to the suitability of nesting islands for gull-billed terns and black skimmers that could result from an accelerated decline in the water surface elevation.
- Potential impacts to proposed covered species associated with tamarisk scrub that could result from an accelerated decline in the water surface elevation.

The measures that IID would implement to address these impacts are as follows. For desert pupfish, IID would ensure that connectivity is maintained among pupfish drains in the event that the Salton Sea becomes unsuitable for pupfish. For potential impacts to nesting island for gull-billed terns and black skimmers, IID would construct nesting islands suitable for these species. To address potential impacts to proposed covered species associated with tamarisk scrub, IID would monitor areas of tamarisk scrub adjacent to the Salton Sea and create or acquire, and protect native tree habitat if monitoring shows a net loss in the amount of tamarisk scrub. Additional description of these measures is contained in Section 3.3 of the HCP (Appendix C of this EIR/EIS).

4.5.3 HCP (Salton Sea Portion) Approach 2: Use of Conserved Water as Mitigation

Approach 1 outlines a strategy to mitigate the potential take of piscivorous birds using hatchery production and creating replacement habitat. In lieu of this approach, IID could reduce or avoid Project effects on salinity and mitigate impacts on piscivorous birds by conserving additional water and allowing it to flow to the Salton Sea. This approach, which could be used in combination with other approaches or used to avoid impacts entirely, would make up for Project-related reductions in flow to the Sea. Under this approach, water conserved for mitigation purposes could be generated through on-farm irrigation system improvements, water delivery system improvements, and/or fallowing, or any combination of these measures.

To avoid or mitigate the temporal impacts of reducing flows to the Sea, IID could fallow or otherwise conserve an amount of water equivalent to the Project-related inflow reduction and allow the conserved water to flow to the Sea. (This amount would be in addition to the amount of water conserved for transfer.) For example, if all water conservation was achieved through fallowing, approximately 50,000 acres of fallowed land would be required to generate the water necessary for transfer and an additional 25,000 acres of fallowing would be required to generate the water necessary to offset changes in inflow to the Sea. An additional 9,800 acres of fallowing would be required to provide water necessary for compliance with the IOP. This mitigation would maintain salinity and elevation changes on the baseline trajectory, thereby avoiding salinity increases and elevation decreases related to the Project.
4.5.4 HCP Alternatives

Section 10 of the ESA requires an applicant for an Incidental Take Permit to consider and describe “alternative actions to such takings” with the HCP. Because the HCP is an inherent part of the Proposed Project and alternatives, each of the project alternatives described above is also an alternative to the HCP. However, it was determined that lesser amounts of conservation and transfer would not substantially reduce the level of take and therefore would not reduce the HCP requirements.

4.6 Alternatives Comparison

Table 4-3 compares the significant unavoidable impacts of the Proposed Project and alternatives. Significant unavoidable impacts were identified for hydrology and water quality, agricultural resources, recreation, and air quality. The remaining environmental resources are not shown on the table because there were either no impacts, or the impacts could be mitigated to less than significant with mitigation measures. Biological resources are not included on this table because biological impacts are addressed by the HCP, which is an inherent part of the project and which reduces biological impacts to less than significant, as described in Section 3.2, Biological Resources. Table 4-3 shows the effect that implementation of HCP (Salton Sea Portion) Approaches 1 and 2 would have on significant unavoidable impacts.

A comprehensive listing and summary of the impacts is included as the first table in each of the resource sections. A list of all potentially significant impacts, including those that can be mitigated to less than significant, is included in the Executive Summary.

4.7 Environmentally Superior Alternative

CEQA Guidelines 15126.6(e)2, Consideration and Discussion of Alternatives to the Proposed Project, state, “If the environmentally superior alternative is the No Project alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives.” For this Project, Alternative 1, the No Project Alternative is environmentally superior to the others; therefore, the next environmentally superior alternative is discussed below.

Determination of the environmentally superior alternative is to some extent driven by the selection of an HCP approach for the Salton Sea. Implementation of HCP (Salton Sea Portion) Approach 2 would avoid significant unavoidable impacts to recreation and air quality by maintaining Baseline flows to the Salton Sea. Approach 2 would minimize but not avoid significant unavoidable impacts to water quality, and it would not avoid or minimize impacts to agricultural resources. To minimize impacts to water quality (selenium impacts to the drains) and impacts to agricultural resources (conversion of prime farmland and farmland of statewide importance), the amount of water conserved and the method of conservation is the determining factor. Alternative 2, 130 KAFY with on-farm irrigation system improvements only, with HCP Approach 2 would avoid recreation, air quality, and agricultural resources impacts and minimize water quality impacts and is therefore the environmentally superior alternative. However, the Proposed Project includes the flexibility to be implemented using the same methods and quantities as Alternative 2, so, if it is implemented in this manner, the Proposed Project could be considered environmentally superior.
4.8 Alternatives Considered but Eliminated

4.8.1 Water Conservation and Transfer Alternatives Considered

To select alternatives for evaluation in this Draft EIR/EIS, a comprehensive alternatives analysis was conducted, which is included as Appendix D of this Draft EIR/EIS. To prepare the alternatives analysis, a comprehensive list of all potential alternatives was first compiled. Potential alternatives for this project were identified from comments received during the scoping process, the environmental review process for the Draft QSA PEIR, and discussions with IID and SDCWA engineers and other water resource professionals familiar with the IID system and the region.

Fourteen alternatives (including subalternatives) were initially identified for evaluation. Screening criteria were then applied to those 14 alternatives. The screening criteria were developed based on CEQA guidelines for selecting alternatives and are described in detail in Appendix D, Alternatives Screening Analysis. The performance of each of these alternatives, evaluated against the screening criteria, is documented in Appendix D, Alternatives Screening Analysis. Of the 14 alternatives, five, including the Proposed Project and the No Project alternative, are recommended for further evaluation in this Draft EIR/EIS, based on the screening analysis. The other alternatives, which were considered but eliminated, are listed below.

Additionally, Table 4-4 shows how each alternative performed against each of the screening criteria and also indicates which alternatives were carried forward for analysis in this Draft EIR/EIS, and which were eliminated from further consideration. The table also summarizes the rationale for inclusion or exclusion of each of the considered alternatives.

4.8.2 HCP Alternatives Considered

Section 10 of the ESA requires an applicant for an Incidental Take Permit to consider and describe “alternative actions to such takings” within the HCP. IID considered three alternatives in the process of developing the HCP that were determined to be inconsistent with its objectives and/or less likely to be successfully implemented. The alternatives to the HCP that were considered are listed below.

4.8.3 No Take Alternative

An alternative to the HCP that avoided take of all proposed covered species was considered but determined not to be practicable. The Proposed HCP consists of several conservation strategies as follows:

- Salton Sea Conservation Strategy
- Tamarisk Scrub Habitat Conservation Strategy
- Drain Habitat Conservation Strategy
- Desert Habitat Conservation Strategy
- Specific-species Conservation Strategies
- Agricultural Field Conservation Strategy
The Salton Sea Conservation Strategy of the Proposed HCP contains a no take approach. Approach 2, Use of Conserved Water as Mitigation would avoid Project-related inflow reductions to the Salton Sea and in that way avoid take of proposed covered species associated with the Salton Sea. No other means for avoiding take of species associated with the Salton Sea was identified. The Desert Habitat Conservation Strategy incorporates no take practices to the extent possible. In developing this strategy, many of the USFWS and CDFG’s standard take avoidance and minimization measures for desert species (e.g., desert tortoise) were incorporated into the conservation strategy. Because IID must conduct O&M activities on the AAC and other canals adjacent to desert habitat, it would not be practicable to further avoid take.

IID is obligated to provide drainage to farm fields in the Imperial Valley. As part of this obligation, IID must conduct O&M activities (e.g., vegetation removal) on the drainage system to maintain gravity flow of drainage water. As a result, avoidance of take of proposed covered species using the drains (including burrowing owls and desert pupfish) would not be practicable. Similarly, IID must conduct O&M activities on its conveyance system such that avoidance of take of species using the conveyance system (e.g., burrowing owls) would not be practicable. Because measures to avoid take are either already incorporated into the Proposed HCP or no take measures would not be practicable to implement, a No Take alternative was not carried forward.

4.8.4 Modification of Water Conservation and Transfer Amounts

Two different levels of water conservation (conservation and transfer of 130 KAFY and 230 KAFY) were examined as alternative actions to the level of take anticipated under the proposed water conservation programs and the HCP. The underlying premise for considering these alternatives was that the potential for impact and the level of take are related to the amount of water conserved and transferred out of the system. Each of these alternatives was anticipated to have incrementally less impact relative to the Proposed Project. However, IID determined that reduced conservation and transfer amounts would not substantially reduce the level of take or mitigation requirements. For these reasons, a reduced HCP alternative was not adopted. However, reduced levels of conservation are Project Alternatives and HCP alternatives as described in Section 4.3 above.
<table>
<thead>
<tr>
<th>Resource Area</th>
<th>Proposed Project 300 KAFY</th>
<th>Alternative 1 No Project (Baseline)</th>
<th>Alternative 2 130 KAFY On-Farm Irrigation System Improvements Only</th>
<th>Alternative 3 230 KAFY All Conservation Measures</th>
<th>Alternative 4 300 KAFY Fallowing Only</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1 Hydrology and Water Quality</td>
<td>SUI due to increased selenium concentrations to 9.25 µg/l in the IID surface drain discharge to the Alamo River.</td>
<td>Baseline selenium concentration in the IID surface drain discharge to the Alamo River 6.32 µg/l.</td>
<td>SUI due to increased selenium concentrations to 6.91 µg/l in the IID surface drain discharge to the Alamo River.</td>
<td>SUI due to increased selenium concentrations to 8.88 µg/l in the IID surface drain discharge to the Alamo River.</td>
<td>Less than significant impact due to decreased selenium concentrations to 6.10 µg/l in the IID surface drain discharge to the Alamo River.</td>
<td>Selenium U.S. EPA ambient water quality criteria is 5 µg/l. Water quality projections based on IIDSS and project for the year 2077.</td>
</tr>
<tr>
<td></td>
<td>SUI due to increased selenium concentrations to 7.86 µg/l in Alamo River at the outlet to the Sea.</td>
<td>Baseline selenium concentrations in Alamo River at the outlet to the Sea of 6.25 µg/l.</td>
<td>Less than significant impact due to no change in selenium concentrations - 6.25 µg/l in Alamo River at the outlet to the Sea.</td>
<td>SUI due to increased selenium concentrations to 7.39 µg/l in Alamo River at the outlet to the Sea.</td>
<td>Beneficial impact due to decrease in selenium concentrations to 6.13 µg/l in Alamo River at the outlet to the Sea.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SUI due to increased selenium concentrations to 8.30 µg/l in the IID surface drain discharge to the New River.</td>
<td>Baseline selenium concentration in the IID surface drain discharge to the New River 6.51 µg/l.</td>
<td>SUI due to increased selenium concentration 7.15 µg/l in the IID surface drain discharge to the New River.</td>
<td>SUI due to increased selenium concentration 7.90 µg/l in the IID Surface drain discharge to the New River.</td>
<td>Less than significant impact due to slight decrease in selenium concentration to 6.50 µg/l in the IID surface drain discharge to the New River.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SUI due to increased selenium concentrations to 6.69 µg/l in the IID surface drain discharge to the Salton Sea.</td>
<td>Baseline selenium concentration in the IID surface drain discharge to the Salton Sea of 4.80 µg/l.</td>
<td>SUI due to increased selenium concentrations to 5.09 µg/l in the IID surface drain discharge to the Salton Sea.</td>
<td>SUI due to increased selenium concentrations to 6.40 µg/l in the IID surface drain discharge to the Salton Sea.</td>
<td>Beneficial impact due to decrease in selenium concentrations to 4.61 µg/l in the IID surface drain discharge to the Salton Sea.</td>
<td></td>
</tr>
</tbody>
</table>
### TABLE 4-3
Significant Unavoidable Impacts (SUIs) of the Proposed Project and Alternatives

<table>
<thead>
<tr>
<th>Resource Area</th>
<th>Proposed Project 300 KAFY</th>
<th>Alternative 1 No Project (Baseline)</th>
<th>Alternative 2 130 KAFY On-Farm Irrigation System Improvements Only</th>
<th>Alternative 3 230 KAFY All Conservation Measures</th>
<th>Alternative 4 300 KAFY Fallowing Only</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>HCP (Salton Sea Portion) Approach 1: Hatchery and Habitat Replacement</td>
<td>With HCP Approach 1, SUI Water Quality Impacts could be minimized but would not be avoided for the Proposed Project and Alternatives 2, 3, and 4. For Alternative 1, Baseline conditions would continue.</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>HCP (Salton Sea Portion) Approach 2: Use of Conserved Water for Mitigation</td>
<td>HCP Approach 2 would maintain flows to the Salton Sea at the Baseline levels and could reduce selenium concentrations in the New and Alamo Rivers. However, selenium concentrations in the drain discharge would not necessarily be improved by this approach, as the location of lands generating water for mitigation may not coincide with impacted drains for conservation for transfer.</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>3.5 Agricultural Resources</td>
<td>SUI to Prime farmland and Farmland of Statewide Importance due to the potential permanent fallowing of up to 50,000 acres for conservation for transfer.</td>
<td>None</td>
<td>No impacts to agricultural resources.</td>
<td>SUI to Prime farmland and Farmland of Statewide Importance due to the potential permanent fallowing of up to 38,300 acres for conservation for transfer.</td>
<td>SUI to Prime farmland and Farmland of Statewide Importance due to the potential permanent fallowing of up to 50,000 acres for conservation for transfer.</td>
<td>Impacts to Prime farmland and Farmland of Statewide Importance result if lands do not produce irrigated crops for more than four years.</td>
</tr>
<tr>
<td>HCP (Salton Sea Portion) Approach 1: Hatchery and Habitat Replacement</td>
<td>With HCP Approach 1, SUI to agricultural resources would not be minimized or avoided for the Proposed Project and Alternatives 2, 3 and 4. For Alternative 1, Baseline conditions would continue.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
TABLE 4-3
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<th>Alternative 4 300 KAFY</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All Conservation Measures</td>
<td></td>
<td></td>
<td>All Conservation Measures</td>
<td>Fallowing Only</td>
<td></td>
</tr>
</tbody>
</table>

HCP (Salton Sea Portion) Approach 2: Use of Conserved Water for Mitigation

With HCP Approach 2, SUI to agricultural resources would not be minimized or avoided for the Proposed Project and Alternatives 2, 3, and 4. If fallowing is used to conserve water for mitigation under this approach, rotational fallowing would be used to avoid additional impacts to agricultural lands. For Alternative 1, Baseline conditions would continue.

3.6 Recreation
SUI to sportfishing due to projected life cycle impacts on fish beginning in Year 2010.
Life cycle of fish impacted beginning in Year 2015.
SUI to sportfishing due to projected life cycle impacts on fish beginning in Year 2015.
SUI to sportfishing due to projected life cycle impacts on fish beginning in Year 2010.
SUI to sportfishing due to projected life cycle impacts on fish beginning in Year 2012.

HCP (Salton Sea Portion) Approach 1: Hatchery and Habitat Replacement

With HCP Approach 1, SUI recreation impacts to sportfishing would not be minimized or avoided for the Proposed Project and Alternatives 2, 3, and 4. For Alternative 1, Baseline conditions would continue.

HCP (Salton Sea Portion) Approach 2: Use of Conserved Water for Mitigation

HCP Approach 2 would maintain flows to the Salton Sea at the Baseline levels and would avoid SUI recreation impacts to sportfishing resulting from the Proposed Project. The life cycle of fish would be impacted in Year 2023 as predicted for the Baseline/No Project.

3.7 Air Quality
SUI air quality impact due to the potential for windblown dust from exposure of 50,000 acres of shoreline.
Exposure of 16,000 acres of shoreline by 2077.
SUI air quality impact due to the potential for windblown dust from exposure of 22,000 acres of shoreline.
SUI air quality impact due to the potential for windblown dust from exposure of 39,000 acres of shoreline.
SUI air quality impact due to the potential for windblown dust from exposure of 16,000 acres of shoreline.
### TABLE 4-3
Significant Unavoidable Impacts (SUIs) of the Proposed Project and Alternatives

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<th>Alternative 4 300 KAFY Fallowing Only</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>HCP (Salton Sea Portion) Approach 1: Hatchery and Habitat Replacement</td>
<td>With HCP Approach 1, SUI air quality impacts would not be minimized or avoided for the Proposed Project and Alternatives 2, 3, and 4. For Alternative 1, Baseline conditions would continue.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HCP (Salton Sea Portion) Approach 2: Use of Conserved Water for Mitigation</td>
<td>HCP Approach 2 would maintain flows to the Salton Sea and prevent exposure of the shoreline, thereby avoiding SUI impacts to air quality. Shoreline exposure in year 2077 would be as predicted for the No Project/Baseline.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Table 4-4
### Alternative Analysis Summary

<table>
<thead>
<tr>
<th>Type of Criteria</th>
<th>Project Objectives</th>
<th>Reduce Impacts</th>
<th>Screening Criteria</th>
<th>Feasibility</th>
<th>C6: Implementable within reasonable schedule</th>
<th>C7: Meets QSA transfer objectives</th>
<th>Evaluate in EIR/EIS?</th>
<th>Rationale for Evaluation in EIR/EIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alternative</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proposed Project</td>
<td>Pass</td>
<td>Pass</td>
<td>N/A1</td>
<td>Pass</td>
<td>Pass</td>
<td>Pass</td>
<td>Pass</td>
<td>Yes</td>
</tr>
<tr>
<td>1. No Project</td>
<td>Required for Evaluation by CEQA and NEPA</td>
<td>Pass</td>
<td>Pass</td>
<td>Pass</td>
<td>Pass</td>
<td>Pass</td>
<td>Pass</td>
<td>Yes</td>
</tr>
<tr>
<td>2. 130 KAFY Water Conservation and Transfer (Meet Minimum of IID/SDCWA Transfer Agreement Only)</td>
<td>Pass</td>
<td>Pass</td>
<td>Pass</td>
<td>Maybe</td>
<td>Pass</td>
<td>Fail</td>
<td>Yes</td>
<td>Meets primary objectives and potentially reduces impacts when compared to the Proposed Project - reduced conservation and transfer reduces impacts to Salton Sea and LCR.</td>
</tr>
<tr>
<td>4. 300 KAFY Water Conservation and Transfer (Meet Minimum of QSA and IID/SDCWA Transfer Agreement) - Fallowing Only</td>
<td>Maybe</td>
<td>Pass</td>
<td>Pass</td>
<td>Maybe</td>
<td>Pass</td>
<td>Pass</td>
<td>Yes</td>
<td>Meets primary objectives and potentially reduces impacts when compared to the Proposed Project - following reduces impacts to the Salton Sea.</td>
</tr>
<tr>
<td>5. Water Treatment and Reuse</td>
<td>Pass</td>
<td>Fail</td>
<td>Fail</td>
<td>Maybe</td>
<td>Unknown</td>
<td>Pass</td>
<td>No</td>
<td>Does not reduce impacts compared to the proposed project, may include additional impacts associated with construction of facilities and disposal of treatment byproducts.</td>
</tr>
<tr>
<td>6. Alternative Conveyances</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6a. Connect Coachella Canal to CQA</td>
<td>Pass</td>
<td>Fail</td>
<td>Pass</td>
<td>Maybe</td>
<td>ST-F; LT - P2</td>
<td>Pass</td>
<td>No</td>
<td>Reduces impacts to LCR because does not require change in diversion point on LCR, however impacts to LCR with Proposed Project can be fully mitigated. Significant construction and potentially operation impacts associated with constructing 10 miles of conveyance facilities for this alternative prevent this alternative from reducing impacts compared to the Proposed Project.</td>
</tr>
<tr>
<td>6b. Extend the AAC to SDCWA system</td>
<td>Pass</td>
<td>Fail</td>
<td>Pass</td>
<td>Pass</td>
<td>ST-N; LT-Y</td>
<td>Pass</td>
<td>No</td>
<td>Reduces impacts to LCR because does not require change in diversion point on LCR for 200 or 250 out of 300K (transfers to MWD would be diverted at Parker, however impacts to LCR with Proposed Project can be fully mitigated. Significant construction and potentially operation impacts associated with constructing 150 miles of conveyance facilities for this alternative prevent this alternative from reducing impacts compared to the Proposed Project, which does not require construction of facilities other than for conveyance measures.</td>
</tr>
<tr>
<td>6c. New conveyance from LCR to SDCWA in Mexico</td>
<td>Pass</td>
<td>Fail</td>
<td>Pass</td>
<td>Maybe</td>
<td>ST-F; LT-P</td>
<td>Pass</td>
<td>No</td>
<td>Reduces impacts to LCR because does not require change in diversion point on LCR for 200 or 250 out of 300K (transfers to MWD would be diverted at Parker, however impacts to LCR with Proposed Project can be fully mitigated. Significant construction and potentially operation impacts associated with constructing</td>
</tr>
</tbody>
</table>

IID WATeR CONSERVATION AND TRANSFER PROJECT
DRAFT HABITAT AND CONSERVATION PLAN
DRAFT EIR/EIS
<table>
<thead>
<tr>
<th>Type of Criteria</th>
<th>Project Objectives</th>
<th>Reduce Impacts</th>
<th>Feasibility</th>
<th>Screen Criteria</th>
<th>Evaluate in EIR/EIS</th>
<th>Rationale for Evaluation in EIR/EIS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>C1: Provide SDCWA with reliable source</td>
<td></td>
<td></td>
<td>C4: Technically Feasible and Reliable</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>C2: Support cons. and protect IID’s water rights</td>
<td></td>
<td></td>
<td>C5: Institutionally and Politically feasible</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>C3: Minimize Env. Impacts compared to the Proposed Project</td>
<td></td>
<td></td>
<td>C6: Implementable within reasonable schedule</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>C7: Meets QSA transfer objectives</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**6d. Expand capacity of the CRA**

- **C1**: Pass
- **C2**: Pass
- **C3**: Fail
- **C4**: Unknown
- **C5**: Unknown
- **C6**: Fail
- **C7**: Pass
- **Evaluate in EIR/EIS? No**

Rationale: 150 miles of conveyance facilities for this alternative prevent this alternative from reducing impacts compared with the Proposed Project, which does not require construction of facilities other than for conservation measures.

**6e. Construct a New Aqueduct Parallel to the CRA**

- **C1**: Pass
- **C2**: Pass
- **C3**: Fail
- **C4**: Pass
- **C5**: ST-F LT-P
- **C6**: Pass
- **C7**: No

Rationale: Does not reduce impacts compared to the Proposed Project, since diversion would also be at Parker Dam. In addition this alternative has significant additional impacts associated with >100 miles of construction required to construct a new aqueduct parallel to the CRA. Additionally this alternative may not be politically feasible.

**7. Other Conservation/Transfer**

- **C1**: Fail
- **C2**: Fail
- **C3**: Unknown
- **C4**: N/A
- **C5**: Fail
- **C6**: Unknown
- **C7**: No

Rationale: Cannot guarantee reliable supply, particularly during drought periods when it is most needed and could compromise IID’s water rights because it does not implement a water conservation program in IID as required by the SWRCB. Also, may not reduce impacts when compared to the Proposed Project, depending on origin of water and method of conveyance.

**8. Maximize Local Supplies in SDCWA-Desalination**

- **C1**: Maybe
- **C2**: Fail
- **C3**: Unknown
- **C4**: Pass
- **C5**: ST-F LT-P
- **C6**: Fail
- **C7**: No

Rationale: Impacts, such as energy use, disposal of byproducts, encroachment onto sensitive marine habitats, associated with development of this alternative may be greater than the Proposed Project. Also the project may not be economically feasible.

**9. CVP and SWP Supplies**

- **C1**: Fail
- **C2**: Fail
- **C3**: Unknown
- **C4**: Unknown
- **C5**: Pass
- **C6**: Fail
- **C7**: No

Rationale: Cannot guarantee reliable supply, particularly during drought periods when it is most needed and could compromise IID’s water rights because it does not implement a water conservation program in IID as required by the SWRCB. Also, may not reduce impacts when compared to the Proposed Project, depending on origin of water to be purchased and method of conveyance.

**10. Water Banking**

- **C1**: Unknown
- **C2**: Fail
- **C3**: Pass
- **C4**: Pass
- **C5**: Pass
- **C6**: Fail
- **C7**: No

Rationale: Cannot guarantee reliable supply, particularly during drought periods when it is most needed and could compromise IID’s water rights because it does not implement a water conservation program in IID as required by the SWRCB. Also, may not reduce impacts when compared to the Proposed Project, depending on origin of water banked and methods of conveyance.

Notes:

1. F6 is not rated for this alternative because this criteria is intended to identify alternatives which have the potential to minimize environmental impacts when compared to the proposed project.
2. ST-F LT-P means that the project does not meet the criteria in the Short Term but does in the Long Term.