RECLAMATION

Managing Water in the West

Environmental Assessment

East Highline Reservoir and Intake Channel Project

BUREAU OF RECLAMATION

Interior Region 8 - Lower Colorado Basin
Arizona, California, Nevada
Yuma Area Office
Yuma, Arizona

April 2020

Mission Statements

The U.S. Department of the Interior protects and manages the Nation's natural resources and cultural heritage; provides scientific and other information about those resources; and honors its trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated Island Communities. The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

Environmental Assessment
East Highline Reservoir and Intake Channel Project

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Acronyms and Abbreviations

Acronym or Abbreviation	Description
AAC	All-American Canal
AF	Acre-Feet
APE	Area of Potential Effect
BMPs	Best Management Practices
BLM	Bureau of Land Management
CDFW	California Department of Fish and Wildlife
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
Cfs	Cubic feet per second
CWA	Clean Water Act
CVWD	Coachella Valley Water District
DTSC	Department of Toxic Substances Control
DWR	Department of Water Resources
EA	Environmental Assessment
EHL	East Highline
EIR	Environmental Impact Report
EPA	Environmental Protection Agency
FTHL	Flat-tailed Horned Lizard
FONSI	Finding of No Significant Impact
I-8	Interstate Highway 8
ICAPCD	Imperial County Air Pollution Control District
IID	Imperial Irrigation District
NHPA	National Historic Preservation Act
NEPA	National Environmental Policy Act
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
O&M	Operation and Management
PM_{10}	Coarse particulate matter
QSA	Quantification Settlement Agreement
Reclamation	Bureau of Reclamation
ROW	Right-of-Way
RWQCB	Regional Water Quality Control Board
SCAG	Southern California Association of Governments
SR-98	State Route 98
SPCC	Spill Prevention, Control, and Countermeasures
SHPO	State Historic Preservation Officer
US	United States
USFWS	United States Fish and Wildlife Service
USACE	United States Army Corps of Engineers
YRR	Yuma Ridgway's rail

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Chapter 1. Introduction

1.1 Introduction

The Bureau of Reclamation (Reclamation) has prepared this Environmental Assessment (EA) to evaluate potential impacts associated with the proposed East Highline Reservoir and Intake Channel Project ("Project" or "Proposed Action"). This EA was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 (42 U.S.C. 4321 et seq.), the Council on Environmental Quality (CEQ) regulations (40 CFR 1500-1508) for implementing NEPA, the Department of the Interior's NEPA Regulations (43 CFR Part 46), and Reclamation Manual NEPA Policy (ENV P03). Reclamation is the lead Federal agency pursuant to NEPA. Because the Project would modify Reclamation facilities and introduce new facilities within Reclamation's withdrawn land, a land use license agreement from Reclamation is required in accordance with Reclamation's Directives and Standards LND 08-01, dated 1/3/2002.

Imperial Irrigation District (IID) intends to undertake the Proposed Action if a land use license (license) is granted by Reclamation. The Proposed Action consists of construction of a new agricultural single cell water reservoir (or split cell design option), and construction of an open intake channel to convey water from the All-American Canal (AAC). The AAC is owned by Reclamation and is operated by IID under contract with Reclamation. Water would be gravitationally conveyed from the AAC to the proposed reservoir via a new open intake channel. Water would then be delivered through automated gates and a discharge structure into the East Highline (EHL) Canal which is owned and operated by the IID and serves the eastern portion of the Imperial Valley. The reservoir would temporarily store and operationally manage up to approximately 3,400 acre-feet (AF) of water.

1.2 Project Location

The Proposed Action is located in the southern region of Imperial County, California, east of Calexico and southeast of Holtville (Figure 1-1, Project Location). The Project is located on five parcels (Assessor's Parcel Number (APN) 055-250-020, 059-310-005, 055-310-007, 055-310-006, 059-310-006) owned by IID, cumulatively totaling approximately 556 acres (Figure 1-2, Vicinity Map). The Project area is found on the USGS Bonds Corner 7.5-minute topographic quadrangle in Sections 25, 26 and 36 of Township 16 South, Range 16 East, and Section 6 of Township 17 South, Range 17 East. The latitude and longitude coordinates are 32°43'35″N and 115°16'52"W. The Proposed Action is located directly east of the EHL Canal, and directly west of lands managed by the Bureau of Land Management (BLM). The Proposed Action is located adjacent to the AAC, approximately 1.1 miles north of State Highway 98 (SR-98) and approximately 2 miles south of Interstate Highway 8 (I-8). To the east of the Proposed Action

site, is open and vacant desert land with desert shrubbery and patches of groundcover managed by the BLM. Agricultural fields surround the Project site to the northwest, west and south, with the EHL Canal directly adjacent to the west. See Figure 1-3 for Proposed Action area and Figure 1-4 for Proposed Action Conceptual Design.

1.3 Project Background

IID was formed in 1911 under a state charter and acquired certain rights of the California Development Company and its Mexican subsidiary. IID is an irrigation district, a limited-purpose public agency, formed under the laws of the State of California. IID holds rights to take water from the Colorado River and deliver it to farmers, tenants, and landowners in Imperial County. IID provides agricultural water to approximately 475,000 acres of some of the most intensively farmed land in the nation. Landowners and tenants within IID's water service area conduct on-farm operations, which include crop irrigation (i.e., applying water to fields) and maintaining on-farm drainage systems. IID does not have authority to approve or disapprove land use, water use, or crop selection by farmers. IID's operational activities are associated with irrigation (i.e., the diversion, measurement, conveyance, and delivery of Colorado River water to customers within the IID water service area through its canal system), drainage (i.e., the collection, removal, measurement, and transport of drainage waters to the Salton Sea), hydroelectric power, and energy services.

In 1942, the AAC, operated by IID, became the sole water source for Imperial Valley residents and area farmlands. Approximately 3.1 million acre-feet of Colorado River water is delivered annually through the AAC to six cities, two special water districts, a private water company, and 475,000 acres of agricultural lands throughout the Imperial Valley (IID 2017). The EHL Canal begins south of the intersection of Bornt Road and SR-98. The EHL Canal deviates from the AAC, thus bringing water north to the surrounding agricultural areas. The AAC is a federal facility under the ownership of Reclamation. IID, in accordance with contractual agreements with Reclamation's Yuma Area Office, has operation and maintenance responsibility for the AAC and appurtenant facilities.

IID has a substantial seepage recovery program from main system laterals within the IID service area that are currently producing approximately 35,000 acre-feet of conserved water annually. IID began seepage recovery along the AAC in 1947, along the EHL Canal in 1967, and has been expanding these projects to meet Quantification Settlement Agreement (QSA)/Transfer Agreements obligations since 2009.

1.4 Project Purpose and Need

Under NEPA, an EA "shall briefly specify the underlying purpose and need to which the agency is responding" with the Proposed Action (40 CFR 1502.13). The purpose of the Proposed Action is to augment IID's current levels of operational flexibility while creating an additional tool to assist in meeting main-system and on-farm conservation program goals. The Project is also consistent with the State of California's water conservation objectives established under Executive Order B-37-16. The Proposed Action is further consistent with the intended use of Reclamation's withdrawn lands for water management use. The specific objectives for IID, and the purpose and need, are further described below:

- The Proposed Action will increase delivery flexibility and provide conservation opportunities within the district to accommodate in-valley water demand. These efforts are consistent with the objectives set forth in IID's 2016 Water Conservation Plan. Mid lateral and off line reservoirs are an integral part of the IID System Conservation Program.
- The Proposed Action will help support IID's 12-Hour Delivery Program via maximized operational storage capacity and flexibility, enabling farmers to match crop water requirements and conserve water. The reservoir will help balance supply-demand mismatches due in part to conveyance travel time, peak demands, unavailable storage, and rain events.
- The Proposed Action will provide consistency with the 2018 California Water Plan goals: Goal 2-Strengthen Resiliency and Operational Flexibility of Existing and Future Infrastructure; Goal 4-Empower California's Under-Represented and Vulnerable Communities; and, Goal 6-Support Real-time Decision-making, Adaptive Management, and Long-term Planning.
- The Proposed Action is in support of the Reclamation Reform Act of 1982 to " . . . encourage . . . consideration and incorporation of prudent and responsible water conservation measures . . .by . . . recipients of irrigation, municipal and industrial water . . ."

Additional specific Project design objectives are as follows:

- Minimize the length of the intake channel from AAC and the outflow channel to EHL Canal.
- Optimal placement to benefit the maximum number of downstream IID water users.
- Utilize a route with the most beneficial hydrologic conditions to accommodate gravity flow (i.e., avoiding/minimizing pumping).

The construction and use of the Proposed Action is primarily for agricultural purposes to have a large operational reservoir that will allow for the management of fluctuating downstream agricultural demands due to increases in requests for shorter 12-hour water deliveries or any reductions from the normal 24-hour water delivery period. The Proposed Action will allow IID to better match water demands by creating a more efficient canal system with the additional water

management facility upstream of most of IID's water service. Improved management of Colorado River water deliveries to agricultural users within IID's distribution system will further maximize water conservation opportunities.

1.5 Reclamation Authority and Policy

Reclamation's authority to grant land use authorizations is stated in the Reclamation Manual, Directives and Standards LND 08-01 (dated 1/3/2002). This document provides standard procedures for issuing land use authorization documents such as easements, leases, licenses, and permits, which allow others to use Reclamation lands and interests in its lands, facilities, and water surfaces. According to LND 08-01 item 2.C, "Permits and licenses are similar in nature. Permits are generally considered a form, or subset, of licenses. They do not convey possessory interest, but grant only permission to use real property under specific, limited conditions. Licenses, including permits, are use authorizations that grant personal, revocable permission or authority for a person or entity to utilize a specific parcel of land for a specific purpose or purposes. Licenses, including permits do not convey any ownership interest in the land and are not generally considered appurtenant to a parcel of land, thus are personal in nature. In Reclamation, the term 'permit' is generally used to refer to short-term and less intense uses (less than 3 years) and 'license' generally is used to refer to longer and more substantial uses."

IID is requesting a license from Reclamation. The license would grant IID access to the AAC and withdrawn lands to construct the Proposed Action. It would be the responsibility of the IID to adhere to guidance detailed in this EA concerning implementation. It would also be the responsibility of the IID to provide funding, labor and materials to implement and maintain the plan. Therefore, since the Project would result in the addition of permanent infrastructure involving a Reclamation facility that would be a long and substantial use requiring a license, the Project is subject to the provisions in LND 08-01 item 7.A-C regarding licenses

1.6 Purpose of the Environmental Assessment

The Proposed Action consists of construction, operation, and maintenance of a new reservoir and intake structure including connection to the AAC, a federally owned facility. Reclamation's decision to issue a license to IID is considered a federal undertaking and triggers the requirement under NEPA to conduct an assessment of environmental effects. Reclamation is the lead federal agency for NEPA compliance because Reclamation must authorize the Project's connection to Reclamation's AAC in order for IID to implement the project. This EA evaluates the environmental effects of construction, use, and maintenance of the Proposed Action. The

environmental process includes a public comment period, during which Reclamation will solicit the public, agencies, and Tribes for comment (please see Chapter 4).

This EA includes an assessment of the effects that could reasonably be expected should Reclamation issue a license to IID granting them access to the AAC to facilitate the construction, use, and maintenance of the proposed EHL Reservoir and Intake Channel. This EA identifies minimization and mitigation measures that will help to minimize potential environmental effects and considers alternatives to the Proposed Action. The scope of this EA is focused on potential environmental effects and serves as an informational document to provide public disclosure of potential effects of the Project, identify ways to minimize those effects, and consider alternatives to the Proposed Action. Fieldwork and resource mapping conducted to evaluate conditions within the Proposed Action area focused on the 556-acre reservoir and intake channel areas, of which 11 acres are federally managed. The land included in the corridor where fieldwork and resource mapping occurred is referred to in this EA as the Study Area. The total acreage of all affected parcels of land is 573 acres.

1.7 Related CEQA Documentation

The Proposed Action also triggers the need for environmental review under the California Environmental Quality Act (CEQA). IID is the agency primarily responsible for the full Project and therefore the lead agency under the CEQA. IID has prepared an Environmental Impact Report (EIR) for the Project (attached as Appendix A) in accordance with Section 21081.6 of the California Resources Code. The EIR and the associated technical studies provide much of the background information relied upon in this EA.

1.8 Determinations to be Made

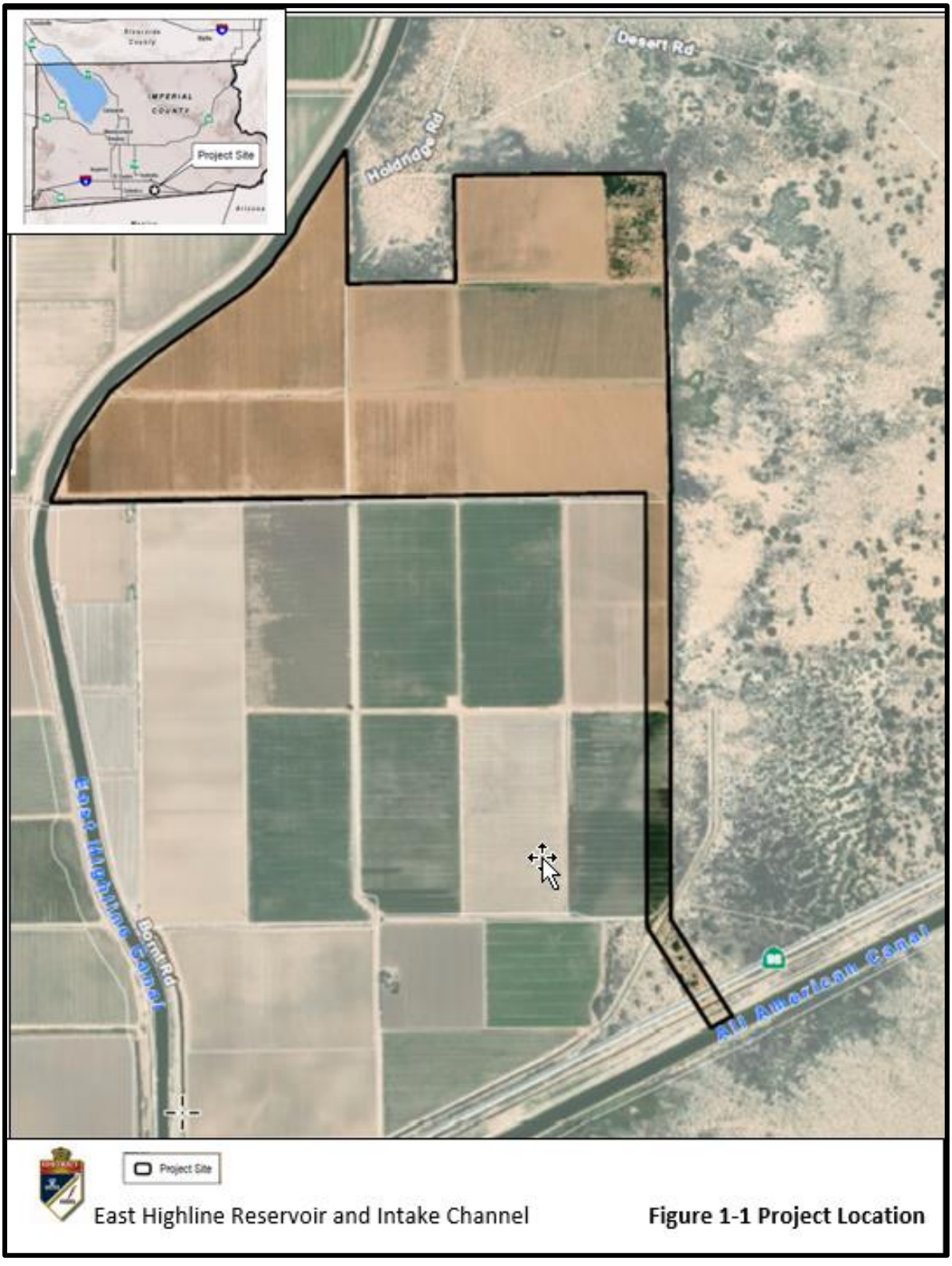
Although IID is the agency preparing the environmental documentation and responsible for construction, operation, and maintenance of the Proposed Action, Reclamation is the lead Federal agency under NEPA. Because the project would modify Reclamation facilities and introduce new facilities within Reclamation's ROW, a land use authorization license agreement from Reclamation is required in accordance with Reclamation's Directives and Standards LND 08-01, dated January 3, 2002. This EA will serve to inform the Yuma Area Office Manager with the information and analysis necessary to determine whether a Finding of No Significant Impact (FONSI) is appropriate and an EIS is not required. This decision will be based on a determination that all potential effects are either non-significant or can be reduced to non-significant levels through the implementation of mitigation measures. If any potential effects are considered

significant and cannot be avoided or reduced to non-significant levels, the preparation and processing of an Environmental Impact Statement is required to implement the Proposed Action.

Permits and Approvals

Permits, and approvals required from other responsible agencies to authorize construction, maintenance, and operation of the Proposed Action include but may not be limited to those detailed in the EIR (Appendix A). Approvals by Reclamation or coordinated through Reclamation are as follows:

- **License Agreement:** Reclamation would issue a license to IID, to allow for construction and operation of an intake channel and associated access facilities to convey water from the AAC to the proposed EHL Reservoir and Intake Channel.
- **Federal Endangered Species Act Consultation:** Prior to issuing an IA, Reclamation shall consult with the U.S. Fish and Wildlife Service (USFWS) to determine whether the Project would adversely affect threatened or endangered plants or wildlife.
- **National Historic Preservation Act Section 106 Consultation:** Prior to issuing an IA, Reclamation shall consult with the State Historic Preservation Officer to determine whether the Proposed Action would adversely affect cultural or historic resources.


Project Site
IMPERIAL COUNTY
Desert Rd
Holtville Rd
East Highline Canal
Bonn Rd
All American Canal
Project Site
East Highline Reservoir and Intake Channel
Figure 1-1 Project Location

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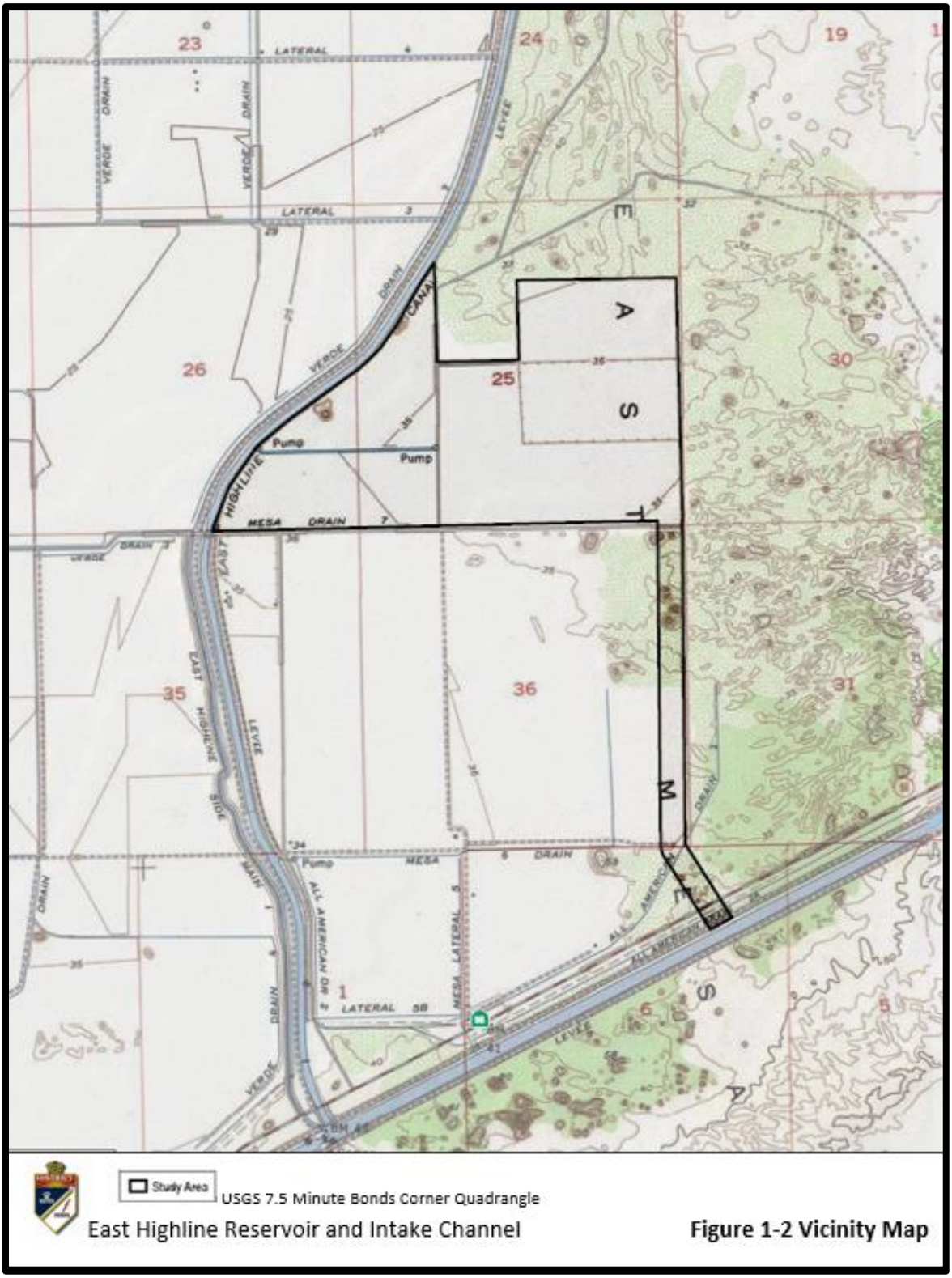
Study Area
USGS 7.5 Minute Bonds Corner Quadrangle
East Highline Reservoir and Intake Channel
Figure 1-2 Vicinity Map

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East Highline Canal
All American Canal
Project Site
Reservoir
Intake Route
Potential Staging Areas
Area Fenced off from Disturbances
Undergrounded Areas
East Highline Reservoir and Intake Channel
Figure 1-3 Proposed Action

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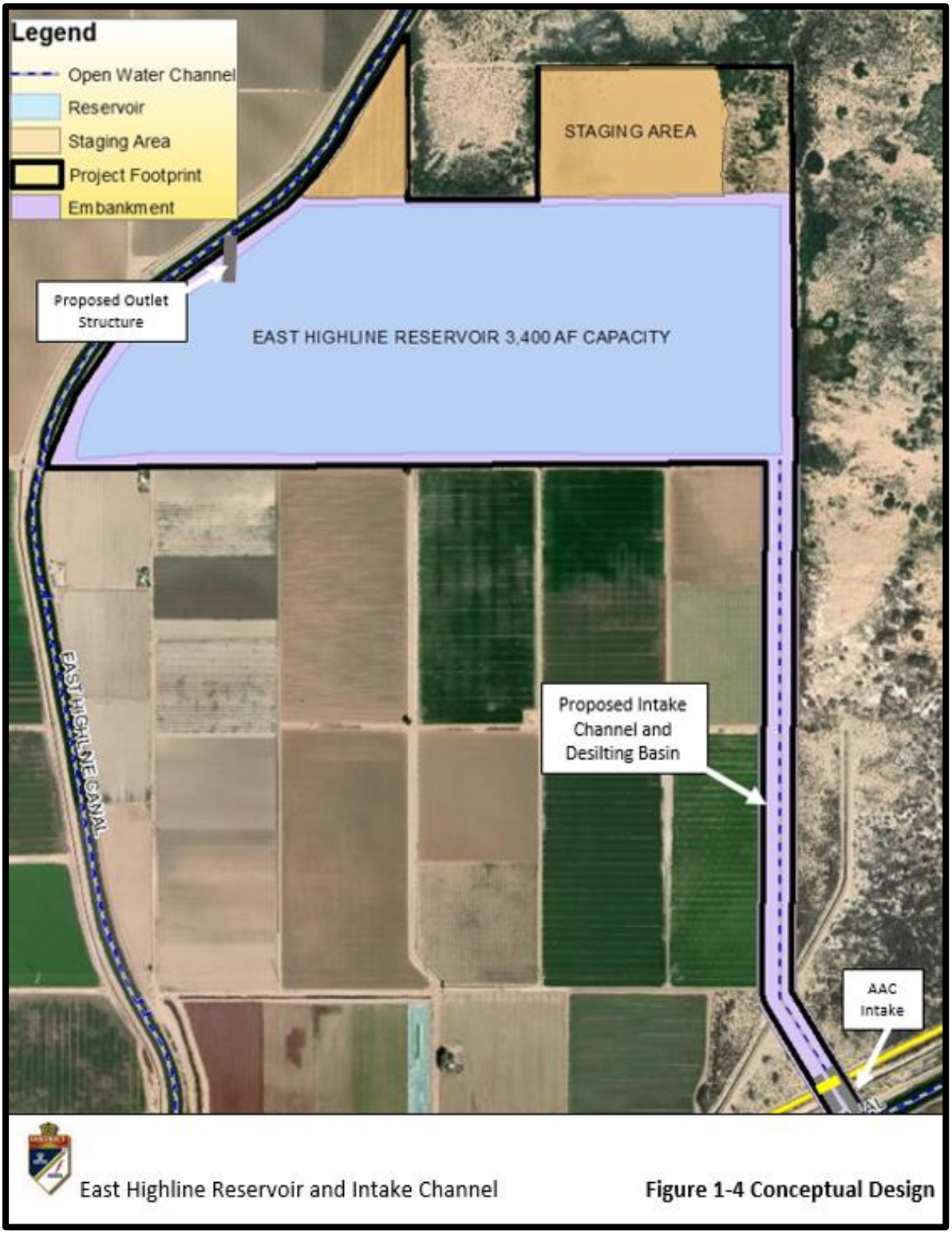

Figure 1-4 Conceptual Design

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Chapter 2. Alternatives

2.1 Introduction

NEPA guidelines require that an EA evaluate the "No Action" alternative in addition to the Proposed Action. This chapter describes the alternatives considered for the Proposed Action, including a No Action alternative, and alternatives that have been eliminated from further analysis due to infeasibility, or economic or environmental restraints.

2.2 No Action Alternative

The No Action alternative provides a basis for comparison of the environmental consequences of the Proposed Action or any other potential action. In this EA, the no action alternative assumes that no activities would occur and the IID system would continue to be operated and maintained in its current condition. Under the No Action alternative, construction of the Proposed Action would not be conducted and the AAC and EHL canals would continue to function in their current state, which would eliminate the potential increase in water conservation and operational flexibility with the demands of downstream water users from new facilities.

2.3 Proposed Action

The Proposed Action consists of constructing an agricultural water storage reservoir and intake channel, covering approximately 370 acres, within a 417-acre Project footprint north of the AAC. The reservoir currently has two optional designs, a single cell, or split cell design (described further on page 19). Both cell design options would equally maximize the operational management of up to approximately 3,400 acre-feet of water without a difference in water storage volume. The reservoir would have concrete lined embankments and a geo-membrane liner on the base floor and have a maximum water storage depth of approximately 11 feet. Water would be gravitationally conveyed from the AAC to the proposed reservoir via an open canal intake channel, within a proposed 300-foot wide ROW (approximately 1.3 miles in length and covering approximately 47 acres). The intake channel would serve a dual purpose as a sedimentation basin. Water temporarily stored in the proposed reservoir would be delivered into the EHL Canal to serve downstream agricultural demands through an automated gate outlet with a gravity flow capacity of approximately 1,500 cubic feet per second (cfs).

Two potential staging areas (approximately 35 acres) are anticipated in the northwest and northeast portions of the Proposed Action site within IID owned land, as indicated in Figure 1-3. The reservoir footprint would be constructed over agricultural land also owned by IID. Approximately 36 acres of the proposed intake channel and right of way would be constructed on agricultural land and

an additional 11 acres would cross federal lands withdrawn to Reclamation. The federally owned land is located at the southern end of the proposed intake channel route from the AAC, which is also federally owned.

The proposed intake channel will run from the north side of the AAC within the proposed 300-foot width of new ROW. The ROW would include the channel, embankments on either side, 25-foot wide operation and maintenance roads on either side (top of embankment), and respective setback on either side (70-foot setback on the east side and 30-foot setback on the west side). The actual channel would have a bottom width of approximately 20 feet with a total open channel width of approximately 70 feet (concrete edge to concrete edge) and a depth of 10-15 feet from the top of the embankments. Impacts to the AAC include cutting the AAC bank to allow a direct connection to the open intake channel. The cut bank and intake structure would alter approximately 150 feet of the AAC bank. The embankments on either side of the proposed intake channel would have a height of approximately 10 feet above existing grade and an outer 3-1 slope extending approximately 40 feet in width on either side of the intake channel.

Construction Activities

Construction of the reservoir and intake channel would take a total of approximately 15 months and involve six principal activities that may be phased (but include overlapping and/or concurrent activities) as follows.

Reservoir (Phase 1): The construction of the reservoir is anticipated to occur over the 15-month construction period. Construction of the reservoir will require a crew consisting of an average of 20 workers. The total area that will be excavated and graded is approximately 525 acres, including embankment areas and areas where excess material will be deposited and regraded to the north of the proposed reservoir site. The total volume of excavation is estimated to be about 2.4 million cubic yards. The temporary disposal facility (located within the staging area) is proposed north of and adjacent to the proposed reservoir. However, a material balance is expected at project end resulting from material demand for embankment and rerouted roadway. Any incidental excess would be re-graded to the site areas on the north of the proposed cell area. The quantity of concrete lining for the reservoir would be approximately 28,700 cubic yards for channel, reservoir, outlet and related support structures. A geo-membrane liner would be installed to cover the bottom of the reservoir and continue up under the concrete on the inside embankments. Construction equipment likely to be utilized at various times during the construction of the reservoir is detailed in Table 2-1. Holdridge Road realignment would take place within the proposed action area and at the same time as the reservoir construction activities. Access to the north of Holdridge road will be around the perimeter of the proposed reservoir.

State Route 98 Roadway Detour (Phase 2): The SR-98 Roadway Detour would occur during the first month of construction. The detour plans would be coordinated through, and approved by, the California Department of Transportation as well as Reclamation for a small portion affecting federal withdrawn lands. The detour would be temporary, while construction of the intake channel intersects with SR-98. Construction equipment likely to be utilized at various times during the construction of the roadway detour is detailed in Table 2-1.

Sedimentation Basin (Phase 3): The construction of the sedimentation basin (located within intake canal's footprint) would be anticipated to occur over a 3-month construction period. Construction of the sedimentation basin would require a crew consisting of an average of 15 workers over the duration of the construction period. The total area that will be graded is approximately 10 acres. The total volume of excavation is estimated to be about 120,000 cubic yards. The disposal facility is located north and adjacent to the reservoir. The quantity of concrete lining for the sedimentation basin would be approximately 3,000 cubic yards. Construction equipment likely to be utilized during the construction of the sedimentation basin is detailed in Table 2-1. This phase would overlap with Phase 4, Intake Canal and Measurement Flume.

Intake Channel and Measurement Flume (Phase 4): The construction of the intake channel and measurement flume would be anticipated to occur over a 3-month construction period. Construction of the channel and measurement flume would require a crew consisting of an average of 20 workers over the duration of the 3-month period. The total area that would be graded is approximately 47 acres. The total volume of canal embankment is estimated to be about 225,000 cubic yards. The material would be hauled primarily from the reservoir excavation for the construction of the channel embankment. The quantity of concrete lining would be approximately 4,000 cubic yards. Construction equipment likely to be utilized during the construction of the intake channel and measurement flume is detailed in Table 2-1.

Canal Tie-Ins (Phase 5): The construction of the AAC inflow Tie-In and EHL Canal outfall Tie-In would occur over an approximate 3-month period and would require a crew consisting of an average of 10 workers over the duration of the construction period, after the SR-98 Roadway Detour, and would overlap partially with the Sedimentation Basin (Phase 3) and the Intake Canal and Measurement Flume (Phase 4) construction. Table 2-1 presents the Construction equipment likely be required at various times during the construction of the tie-ins.

Structures (Phase 6): The construction of the SR-98 crossing, channel inlet structure, reservoir outlet structure, meter vault, and EHL Canal outfall structure would occur over an approximately 6-month period and would require a crew consisting of an average of 12 workers over the duration of the construction period. Construction equipment likely to be utilized during the construction of these structures are detailed in Table 2-1.

Table 2-1
Phasing and Equipment

Phase Number	Phase Name	Months of Construction	List of Equipment*
Phase 1	Reservoir	15	Pickups, Dozer, Large Excavator Backhoe, Dump Truck (40 ton wagons), Flat Bed Truck, Vibratory Compactor, Ready-mix Concrete Trucks, Shotcrete Pump, Concrete Curing Applicator, Water Truck, Caterpillar motor grader, Small Crane or Large Boom Truck, 25 kVA Portable Generator, Dewatering Pump System
Phase 2	SR-98 Detour	1	Pickups, Caterpillar 633 Self-loading scraper, Dump Truck, Vibratory Compactor, Asphalt/Road Base Trucks, Asphalt Pavers, Smooth Drum Roller Compactor, Water Truck, Caterpillar motor grader
Phase 3	Sedimentation Basin	3	Pickups, Dozer, Large Excavator Backhoe, Dump Truck (40 cy wagons), Gradall (Trimming), Ready-mix Concrete Trucks, Shotcrete Pump, Concrete Curing Applicator, Flat Bed Truck, Vibratory Compactor, Water Truck, Caterpillar motor grader, 25 kVA Portable Generator, Dewatering Pump System
Phase 4	Intake Channel and Measurement Flume	3	Pickups, Gradall (Trimming), Ready-mix Concrete Trucks, Shotcrete Pump, Concrete Curing Applicator, Flat Bed Truck, Vibratory Compactor, Caterpillar 633 Self-loading scraper, Small Boom Truck, Water Truck, Caterpillar motor grader, 25 kVA Portable Generator, Dewatering Pump System
Phase 5	Canal Tie-Ins	3	Pickups, Large Excavator Backhoe, Dump Truck, Pile Driving, Vibratory Compactor, Gradall (Trimming), Ready-mix Concrete Trucks, Shotcrete Pump, Concrete Curing Applicator, Small Crane or Large Boom Truck, Water Truck, 15 kVA Portable Generator, Dewatering Pump System
Phase 6	Structures	6	Pickups, Dozer, Large Excavator Backhoe, Dump Truck (40 cy wagons), Gradall (Trimming), Ready-mix Concrete Trucks, Shotcrete Pump, Concrete Curing Applicator, Flat Bed Truck, Vibratory Compactor, Water Truck, Caterpillar motor grader, 25 kVA Portable Generator, Dewatering Pump System

*Not all equipment listed is used in all months of the identified construction phase

Access

The Proposed Action site is accessible from existing County dirt roads, Verde School Road, and Holdridge Road. These County roads are accessible via Bonds Corner Road and SR-98.

Maintenance

Maintenance would be undertaken by IID in accordance with existing practices for inspections and repair. No on-site operations and maintenance facilities would be provided. Inspections would be made via crew trucks and using the existing road infrastructure and the constructed perimeter road around the reservoir and along the intake channel.

Split Cell Design Option

The split cell reservoir design option includes the construction of two adjacent reservoirs, or cells, that would add approximately the same linear footage of additional embankment to the single cell design described above (See Figure 2-1). The split cell design would be constructed with the same type of materials, in the same manner as the single cell reservoir previously described. The intake route would remain in the same footprint, and continue to require a single intake gate and structure. The split cell design would continue having a single outfall structure into the EHL Canal.

If the split cell design option is selected, the design would require the addition of a separate fore- and after-bay, as well as a dividing embankment that would split the reservoir diagonally from the southeast corner to the northwest corner of the reservoir. The fore-bay would be constructed just after the intake gates at the southeast corner of the reservoir and would be approximately 400’ x 400’ (3.7 acres in size). There would be two additional sets of automated gates needed in the fore-bay which would be situated in the north and west embankments that would deliver water to each cell with the same capacity of the intake channel of 1500 cfs. The after-bay would be located in the northwest corner of the reservoir where discharge into the EHL Canal is proposed. The after-bay would allow either cell to discharge into the EHL Canal through it. Additional automated gates would be installed in the fore-bay and after-bay.

The split cell design option would require approximately 255,000 additional cubic yards of native material to be handled, all of which would be generated from the Proposed Action site. The size of the embankments would remain the same at 10 feet above existing grade and have an outer slope extending approximately 40 feet in width on both sides, but would require an additional 7,500 linear feet of concrete lined embankment (12,700 CY of additional concrete). The split cell design option is not a preferred design option as it would result in a substantial increase of construction costs, and thus would only be implemented to facilitate long-term maintenance of the facility. The split cell would enable continuous operations. Instead of shutting down reservoir operations of a single cell reservoir while it is being cleaned and/or repaired (when damage occurs), a split cell reservoir may continue and maintain operations in one cell while the second cell is undergoing maintenance.

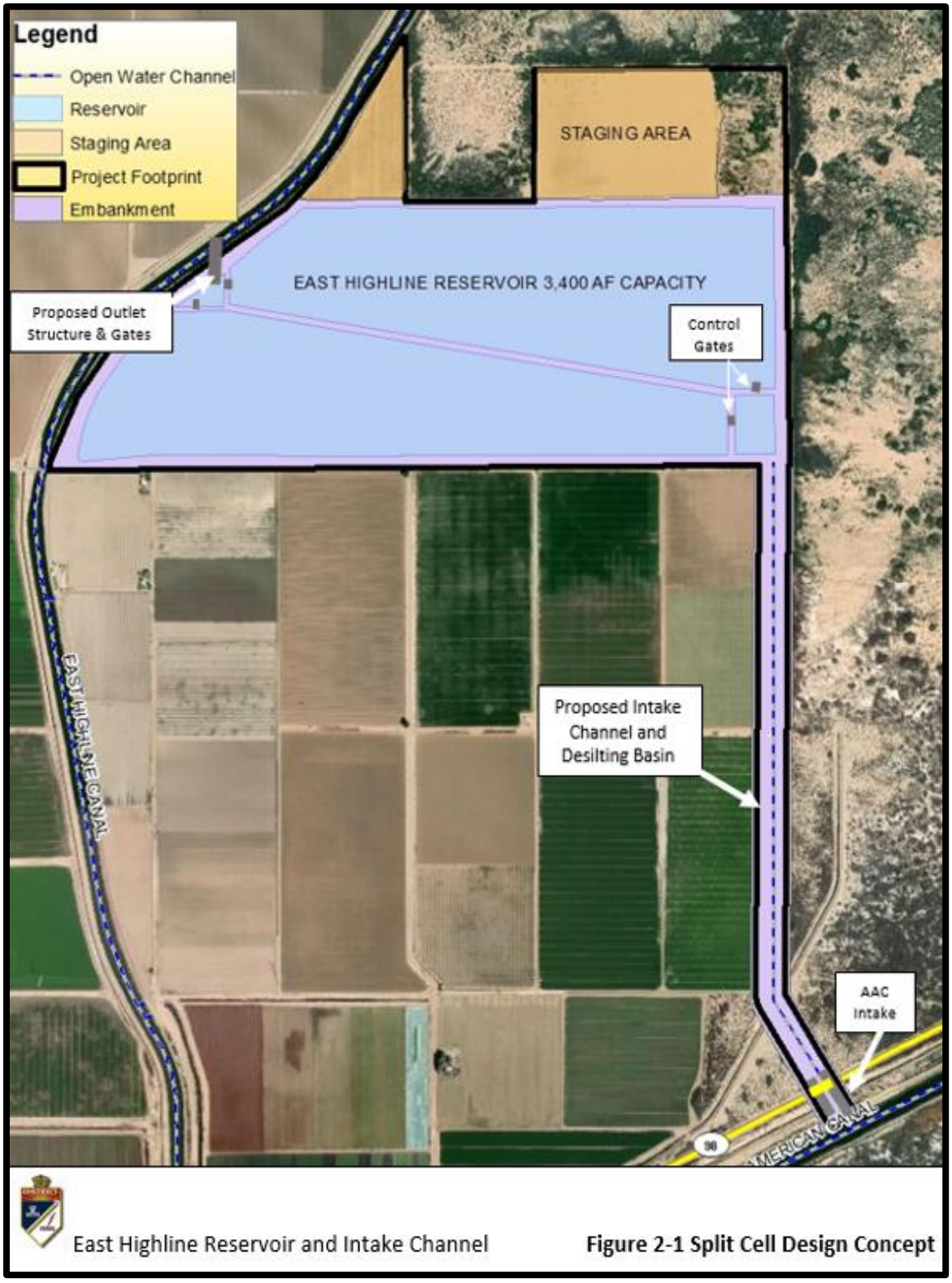

Figure 2-1 Split Cell Design Concept

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2.4 Alternatives Considered and Eliminated from Further Analysis

2.4.1 Alternative Sites Eliminated

IID considered 11 sites, including the proposed site, prior to identifying the preferred site for the Proposed Action. However, 10 of these alternative sites were quickly eliminated as prospective sites due to one or more of the following reasons: the hydraulic conditions of the site are not adequate to be redeveloped as a reservoir and supporting infrastructure, the site is located on BLM property and inside an Area of Critical Environmental Concern (ACEC), or the site was considered financially infeasible. The 10 alternative site locations are listed below (Figure 2-2 Alternative Sites Eliminated). These eliminated alternative sites are all within close proximity to the AAC proposed EHL Project location.

1) North of Anza Road, east of Bowker Road, and southwest of the AAC.
2) North of the AAC, east of Claverie Road, south of Carr Road, and west of SR 7
3) North of the AAC, east of Hawk Road and south of the 98
4) North of the International Border with Mexico, south of the AAC, approximately 1 mile southeast of Bonesteele Road
5) Southeast of Holdridge Road, approximately 0.25 mile north of SR-98
6) Northwest of Holdridge Road, approximately 0.15 mile southeast of the EHL Canal
7) Southwest of Holdridge Road, approximately 0.7 mile southeast of the EHL Canal
8) South of Desert Road, approximately 0.7 mile northeast of Verde School Road
9) North of SR-98, approximately 1.15 east of Holdridge Road
10) South of SR-98, approximately 4 miles northwest of the SR-98 and I-8 intersection

2.4.2 Multiple Smaller Reservoirs Alternative

The Multiple Smaller Reservoirs Alternative would construct up to seven reservoirs on privately owned agricultural parcels along IID's main canal system but at undetermined locations. These reservoirs would be much smaller in size and would be operated by the land owner in which the reservoir is located. The Multiple Smaller Reservoirs Alternative was developed to benefit the local farmers and provide nearby farms with a plentiful, independent water supply. Therefore, this alternative would only partially accomplish the Proposed Action's purpose and need of supporting on-farm efficiency and water conservation measures. However, this alternative would not accomplish the remaining Proposed Action objectives and only provide a few local land owners with increased water delivery flexibility, thus leaving the remaining downstream water users with no additional benefit from an improved system efficiency. Additionally, the construction of up to seven separate reservoirs would likely result in higher greenhouse gas emissions and construction

noise levels due to the increase in construction duration, compared to the construction of one reservoir. Overall, this alternative would not avoid any significant environmental effects, or accomplish the Proposed Action objectives. Therefore, this alternative was eliminated from further analysis.

2.4.3 Reduced Size Reservoir Alternative

The Reduced Size Reservoir Alternative (shown in Figure 2-3), would include an approximately 2,700 acre-foot reservoir. The Reduced Size Reservoir would include the same footprint as the Proposed Action with a shallower basin reducing the necessary embankment and the associated construction activities. Due to its smaller water capacity, this alternative would not benefit the greatest number of downstream IID water users, nor would it maximize system-wide water deliveries and water conservation, in comparison to the Proposed Action. The Reduced Size Reservoir alternative would not provide the greatest opportunity to store returned flows that are backed out of main system canals, significantly hindering water conservation efforts. Consequently, the Reduced Size Reservoir would not maximize the goals of the Quantification Settlement Agreement (QSA), which reallocates conserved Colorado River water among IID (including San Diego County Water Authority) Coachella Valley Water District (CVWD), and the Metropolitan Water District of Southern California (MWD). Instead, with implementation of this alternative, less water would be conserved under system efficiency. The shallower basin would reduce the potential to encounter traditional cultural properties, archeological, and paleontological resources, however, monitoring measures would still be required. All other environmental effects would have similar severities as the Proposed Action. In conclusion, the Reduced Size Reservoir Alternative would not accomplish all Proposed Action objectives, yet would result in similar environmental effects. As such, this alternative was eliminated from further analysis.

2.4.4 Alternative Intake Route Alternative

The Alternative Intake Route Alternative (shown in Figure 2-4) would consist of the proposed reservoir with the same footprint; however, the intake route from the AAC would be located further east of where the preferred intake route is proposed. This alternative intake route would connect to the proposed reservoir in the same location as the preferred alternative; however, it would run across BLM land from the southeast. This alternative would have the potential to reduce the amount of agricultural land affected by the proposed intake route, as well as avoid the need to construct beneath the existing AAC Drain No. 2 which bisects the proposed intake route. However, under this alternative, direct and indirect biological impacts would be greater, as the BLM land the intake route would be constructed on is currently undisturbed habitat and located within a BLM ACEC. Additionally, this alternative has similar potential to impact cultural resources (as the Proposed Action), as the two routes are relatively close and contain similar geologic and

topographic conditions. As such, this alternative would result in similar environmental effects. This alternative would also not fulfill the Proposed Action objective to minimize the length of the intake channel from the AAC and the outflow channel to the EHL Canal. Therefore, this alternative has been eliminated from further analysis.

2.5 Comparison of Alternatives

The suitability of the No Action Alternative and Proposed Action (the preferred alternative as described in Sections 2.2 and 2.3) were compared based on potential environmental effects (detailed in Chapter 3) and the four objectives identified for the Project. The objectives are shown in Table 2-2, the No Action Alternative only met one of the Project's objectives, while the Proposed Action meets all eight objectives.

Table 2-2
Alternatives Comparison Summary

Project Objective	Does the No Action Alternative Meet the Objective?	Does the Proposed Action Meet the Objective?
Provide a main canal system improvement project to increase operational flexibility and more closely match water deliveries with downstream water user demands	No	Yes
Conserve water by capturing what would normally be operational discharge	No	Yes
Support on-farm efficiency conservation measures	No	Yes
Increase operational storage to more effectively manage IID's daily water diversions at the Colorado River	No	Yes
Provide the optimal placement for a large operational reservoir that will benefit the greatest number of downstream IID water users, maximize system-wide water deliveries, and provide the greatest opportunity to store returned flows that are backed out of main system canals	No	Yes
Utilize a route with the most beneficial hydrologic conditions that is able to convey intake and discharge waters to and from the proposed reservoir by gravity flow (i.e. avoiding/minimizing pumping)	No	Yes
Minimize the length of the intake channel from AAC and the outflow channel to EHL Canal	No	Yes
Minimize displacement of existing IID and farming infrastructure	Yes	Yes

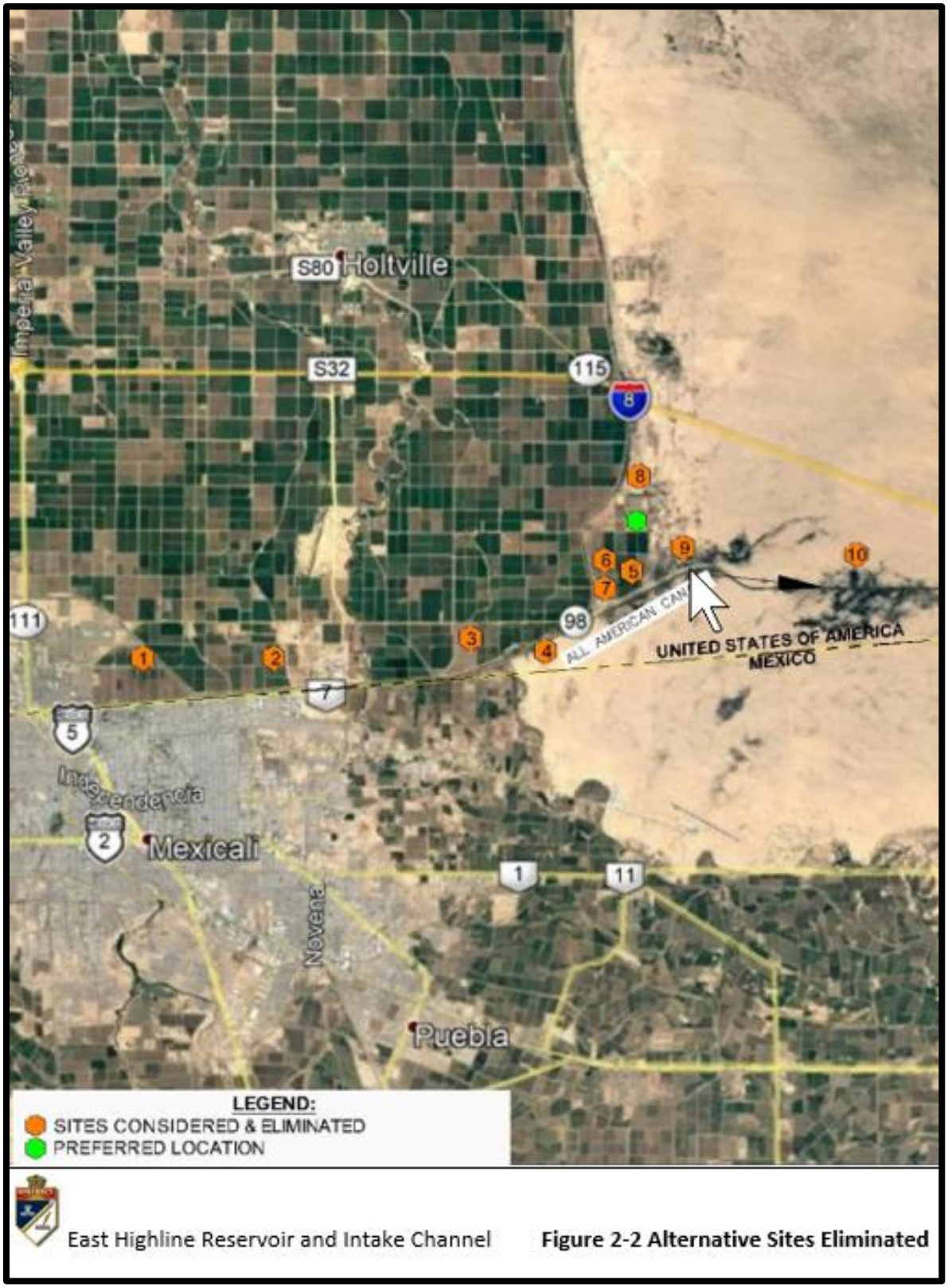
Imperial Valley Press
S80
Holtville
S32
115
8
111
98
ALL AMERICAN CAN
UNITED STATES OF AMERICA
MEXICO
5
Mexicali
2
1
11
Novena
Puebla
LEGEND:
SITES CONSIDERED & ELIMINATED
PREFERRED LOCATION
East Highline Reservoir and Intake Channel
Figure 2-2 Alternative Sites Eliminated

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Figure 2-3 Reduced Size Reservoir

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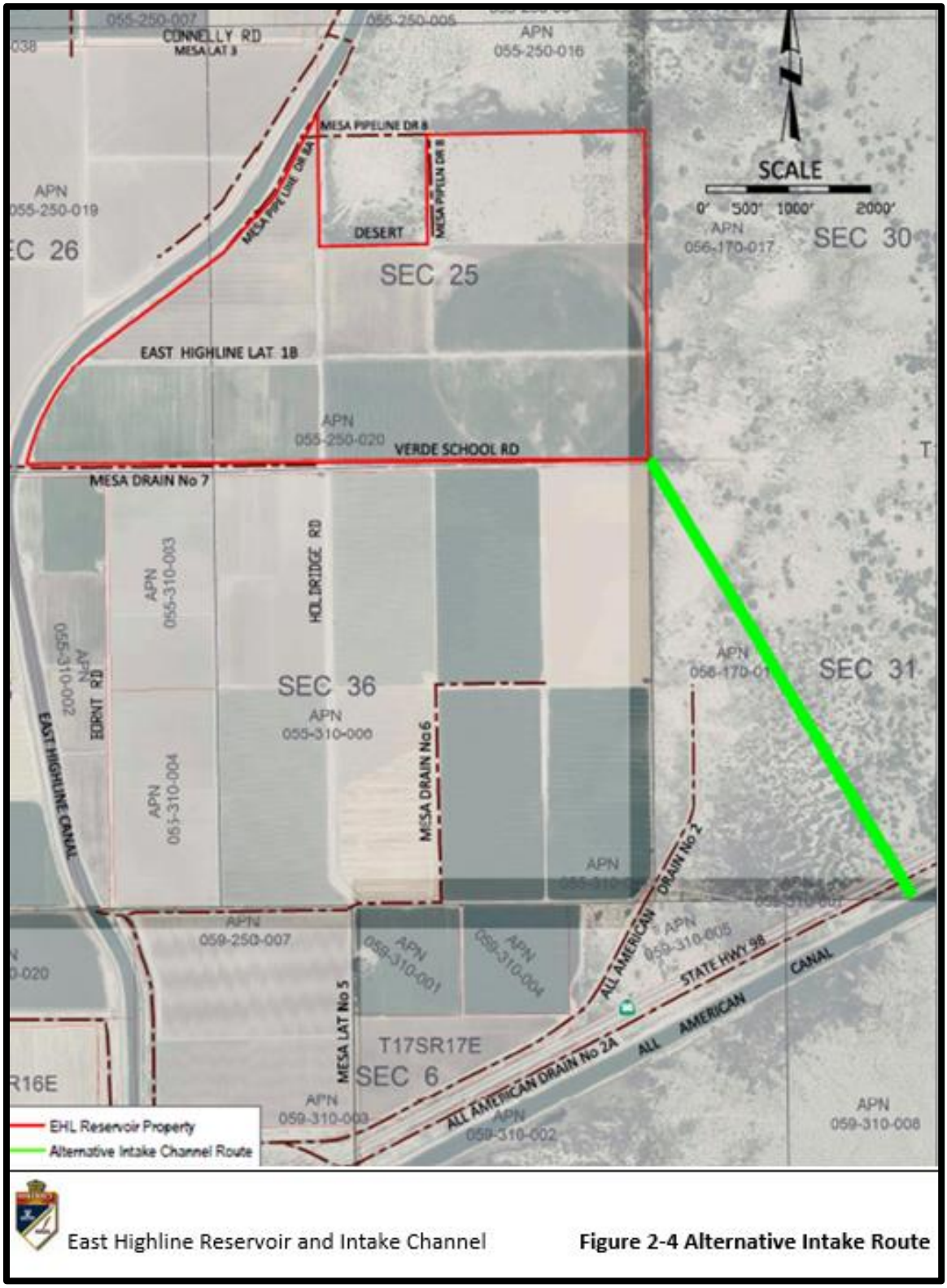
CONNELLY RD
MESA LAT 3
APN
055-250-016
MESA PIPELINE DR 8
SCALE
0' 500' 1000' 2000'
APN
055-250-019
DESERT
SEC 26
SEC 25
APN
056-170-017
SEC 30
EAST HIGHLINE LAT 1B
APN
055-250-020
VERDE SCHOOL RD
MESA DRAIN No 7
HOLBRIDGE RD
APN
055-310-003
APN
055-310-002
EAST HIGHLINE CANAL
SEC 36
APN
055-310-000
APN
055-310-004
MESA DRAIN No 6
APN
056-170-01
SEC 31
ALL AMERICAN DRAIN No 2
APN
059-250-007
APN
059-310-001
APN
059-310-004
APN
059-310-005
STATE HWY 98
ALL AMERICAN CANAL
MESA LAT No 5
T17SR17E
SEC 6
R16E
ALL AMERICAN DRAIN No 2A
APN
059-310-003
APN
059-310-002
APN
059-310-006
EHL Reservoir Property
Alternative Intake Channel Route
East Highline Reservoir and Intake Channel
Figure 2-4 Alternative Intake Route

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Chapter 3. Affected Environment and Environmental Consequences

3.1 Introduction

This section describes the existing environmental resources in the Proposed Action area that may be affected by the Proposed Action and the No Action alternative, if implemented. It also serves as the baseline for the comparisons of alternatives.

3.2 Resources Considered and Eliminated from Further Analysis

Some resources were considered but eliminated from further analysis because they did not occur in the Proposed Action area or because the potential effect to the resource is so minor (negligible) that it was discounted. The resources were either not present or found to not be affected by the Proposed Action because they would be completely mitigated with the implementation of standard stipulations. Resources eliminated from further analysis include Areas of Critical Environmental Concern, Access and Transportation, Agricultural Resources, Conservation Lands, Floodplains, Forestry, Fuels and Fire Management, Livestock Grazing, Public Health and Safety, Recreation/Travel/Wild and Scenic Rivers, Transmission Corridors, Urban Quality and Design of the Built Environment, Wildlife Corridor, Wild Horse and Burros and Wilderness and Wild and Scenic Rivers (See Appendix B, Table B-1).

3.3 Air Quality/Greenhouse Gas Emissions

The following sections describe the existing environmental resources in the Proposed Action area that may be affected by each alternative, if implemented.

3.3.1 Affected Environment

The Clean Air Act (CAA), as amended in 1990, requires the Environmental Protection Agency (EPA) to set National Ambient Air Quality Standards (NAAQS) for wide-spread pollutants harmful to public health and the environment. The EPA has set time-averaged standards for six air pollutants considered to be key indicators of air quality: carbon monoxide, nitrogen dioxide, ozone, sulfur dioxide, lead, and two categories of particulate matter (particulate matter with an aerodynamic diameter of 10 microns or less [PM_{10}] and particulate matter with an aerodynamic diameter of 2.5 microns or less [$PM_{2.5}$]). If an area exceeds the standard, the area is classified as "nonattainment" for that pollutant. If there is not enough data available to determine whether the standard is exceeded in an area, the area is designated as "unclassified" or "unclassifiable." The designation of "unclassifiable/attainment" means that the area meets the standard or is expected to be

meet the standard despite a lack of monitoring data. Areas that achieve the standards after a nonattainment designation are re-designated as maintenance areas and must have approved Maintenance Plans to ensure continued attainment of the standards. The Proposed Action is located in an area that is nonattainment for ozone and PM_{10}.

3.3.2 Environmental Consequences

No Action

The No Action Alternative would have no effect to air quality because there would be no increase of criteria air pollutant emissions generated as a result of the Proposed Action.

Proposed Action

An Air Quality and Greenhouse Gas Emissions Assessment Memorandum (Appendix C) was prepared by Dudek in April 2019. A summary of the findings are presented below.

Construction

Construction would result in temporary addition of pollutants to the local airshed. As provided in Table 3-1, the Proposed Action would not exceed any of the applicable federal de minimis thresholds during construction activities (modelled years 2018 or 2019). Therefore, additional conformity analysis is not required; the Proposed Action would conform to the applicable implementation plan for the Project area.

Table 3-1
Estimated Annual Construction Criteria Air Pollutant Emissions

Modelled Year	ROG	NO_x	PM_{10}
	tons per year		
2018*	0.63	5.93	6.45
2019*	0.72	6.96	10.70
Maximum Annual Emissions	**0.72**	**6.96**	**10.70**
De Minimis Threshold	*100*	*100*	*70*
Threshold Exceeded?	No	No	No

Notes: ROG = reactive organic gasses; NO_x = oxides of nitrogen; PM_{10} = fine particulate matter; * Modelled year. Source: Appendix C.

Operation

Operations of the Proposed Action consist of a large operational reservoir, delivering water through an automated gate outlet and structure with a gravity flow capacity of approximately 1,500 cfs for delivery into the EHL Canal. The intake channel would use gravity only (i.e., no pumping

would occur). Maintenance would be undertaken by IID in accordance with existing practices for inspections and repair. No on-site operation and maintenance facilities would be provided. Inspections would be made via crew trucks using the existing road infrastructure, the proposed perimeter road around the reservoir and along the inlet channel. Thus, effects to air quality as a result of Proposed Action operation would be negligible.

Split Cell Option

The split cell design option would build two reservoirs, separated by a dividing embankment, within the same disturbance area as the single cell described above. The split cell would manage the same amount of water as the single cell. The additional constructing of embankments would result in an increase in construction activities, resulting in an increase in air quality and greenhouse gas effects. However, the increase, estimated at approximately 10% increase in construction efforts, would not raise emissions to above the de minimis thresholds. Emissions would be approximately 0.79 tons per year for ROG, 7.66 tons per year for NOx, and 11.77 tons per year for PM_{10}. As such conformity analysis would also not be required for the split cell design option.

3.3.3 Minimization and Mitigation Measures

Prior to issuance of a grading or building permit, the project proponent shall submit the dust control plan to the Imperial County Air Pollution Control District (ICAPCD) for review and approval, and shall provide the plan to Imperial County, to demonstrate compliance with ICAPCD Regulation VIII (Fugitive Dust Rules), Rules 800 through 806. The plan shall address construction-related dust as required by ICAPCD.

3.4 Biological Resources

3.4.1 Affected Environment

The Proposed Action site is located within the Sonoran Desert, which is bounded on the west by the Peninsular Ranges and on the east by the Colorado River. The Proposed Action study area consists of primarily flat, fallow agricultural land, disturbed areas (roads), irrigation canals, and small amounts of scrub habitat. Please refer to photos 1 through 4. The study area consists of six vegetation communities: arrow weed (*Pluchea sericea*) thickets, bush seepweed (*Suaeda moquinii*) scrub, cattail (*Typha domingensis*) marshes, creosote bush (*Larrea tridentate*) scrub, mesquite bosque/mesquite (*Prosopis glandulosa*) thicket, and tamarisk thickets; and two land covers (disturbed habitat and open water). Of these vegetation communities, the arrow weed thickets, bush seepweed scrub, and mesquite bosque are considered sensitive biological resources. Special-status plant surveys were not conducted because the site is nearly entirely comprised of

agricultural land and disturbed habitat, and the small areas of native habitat suitable for special-status plants will not be affected by the Proposed Action. A total of 20 species of native or naturalized vascular plants, 12 native (60%) and 8 non-native (40%), were recorded within study area (Dudek 2019).

Photo 1- East view of the proposed Reservoir site.
Area previously impacted by past agricultural activity.

Photo 2- West view of the proposed Reservoir site.

Photo 3- Southeasterly view of the intake channel alignment, area near the AAC. Note Highway 98 in background.

Photo 4- Southeasterly view of the intake channel alignment, area near the AAC. A portion of this area was previously impacted.

A total of 22 wildlife species were recorded within the Proposed Action study area. Nineteen (19) bird species were observed which included common raven (*Corvus corax*), black phoebe (*Sayornis nigricans*), mourning dove (*Zenaida macroura*), western meadowlark (*Sturnella neglecta*), and American kestrel (*Falco sparverius*). One mammal species, coyote (*Canis latrans*) and two invertebrate species were observed which included harvester ant (*Pogonomyrmex* sp.) and queen butterfly (*Danaus gilippus*). Five California special-status wildlife species were observed during the 2018 biological surveys: burrowing owl (*Athene cunicularia*), Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), northern harrier (*Circus hudsonius*), prairie falcon (*Falco mexicanus*), and loggerhead shrike (*Lanius ludovicianus*). No focused special-status wildlife surveys were conducted in 2018 or 2019 (Dudek 2019).

Federally listed species (threatened, endangered, or candidate species) which may occur in the vicinity of the project area:

The Peirson's milk-vetch (*Astragalus magdalenae var. peirsonii*) was federally listed as a threatened species on October 6, 1998, and critical habitat was designated in 2004 and revised in 2008 (Federal Register Feb. 2008). Critical habitat (approximately 218 acres) is located within the BLM Buttercup Management Area. The milk vetch is found in desert dunes at elevations between 180 and 820 feet. The only known occurrences of the plant in the U.S. are in the Imperial Sand Dunes of Imperial County. The plant is also found on the sand dunes of the Gran Desierto of Sonora Mexico. All activities will occur within disturbed agricultural areas.

Yuma Ridgway's rail *(Rallus obsoletus yumaensis* or YRR [formerly known as Yuma clapper rail (*Rallus longirostris yumanensis]*) is listed as endangered under the federal Endangered Species Act and California Endangered Species Act. The YRR, one of seven North American subspecies of clapper rails, occurs primarily along the lower Colorado River (LCR) in California, Arizona, and Mexico. It is a summer resident from Topock south to Yuma in the U.S. and at the Colorado River Delta in Mexico. There are also populations of this subspecies at the Salton Sea in California (Garrett and Dunn 1981) and along the Gila and Salt Rivers to Picacho Reservoir and Blue Point in central Arizona (Rosenberg et al. 1991). The YRR is associated primarily with freshwater marshes, with the highest densities of this subspecies occurring in mature stands of dense to moderately dense cattails and bulrushes. There is no wetland habitat within the project area. The nearest wetland habitat is located approximately four miles east of the project area, adjacent to the AAC.

3.4.2 Environmental Consequences

No Action

Under the No Action Alternative, no reservoir or intake channel would be constructed. Biological resources would remain as is and there would be no new adverse effects to biological resources.

Proposed Action

The Proposed Project study area is not located within a regional wildlife movement corridor or linkage planning area as identified in *A Linkage Network for the California Deserts* (Penrod et al. 2012). The Proposed Project study area is largely agricultural, but is adjacent to undeveloped BLM land (Lake Cahuilla ACEC) to the east where wildlife can move freely throughout the area with little impediment. The majority of the proposed reservoir and associated infrastructure would be constructed primarily within the open agriculture area, see Figure 3-1 and photos 1 and 2. The project would not result in long-term effects to wildlife movement through the area. No riparian or wetland habitat will be disturbed.

Approximately six acres of creosote and some scattered mesquite will be impacted near the AAC where the inlet channel will connect. This small section of land has been bisected by access roads and has been impacted by construction of drains, off road vehicle use, state highway 98, and transmission lines, see photos 3 and 4 and Figure 3-1 and 3-2.

Once constructed, maintenance of the facilities may also cause short term, localized disturbances from vehicles and other equipment used to remove material behind structures or to repair or maintain structures damaged by storm events. While in operation, it is anticipated that the Proposed Action will result in beneficial impacts to migratory birds. The reservoir could serve as a stopover area during spring and fall for a multitude of waterfowl (i.e., ducks, geese).

Split Cell Option

The split cell design option would build two cells, separated by a dividing embankment, within the same disturbance area as the single cell described. Therefore, biological impacts would be the same. The operational benefits to migratory birds would also apply.

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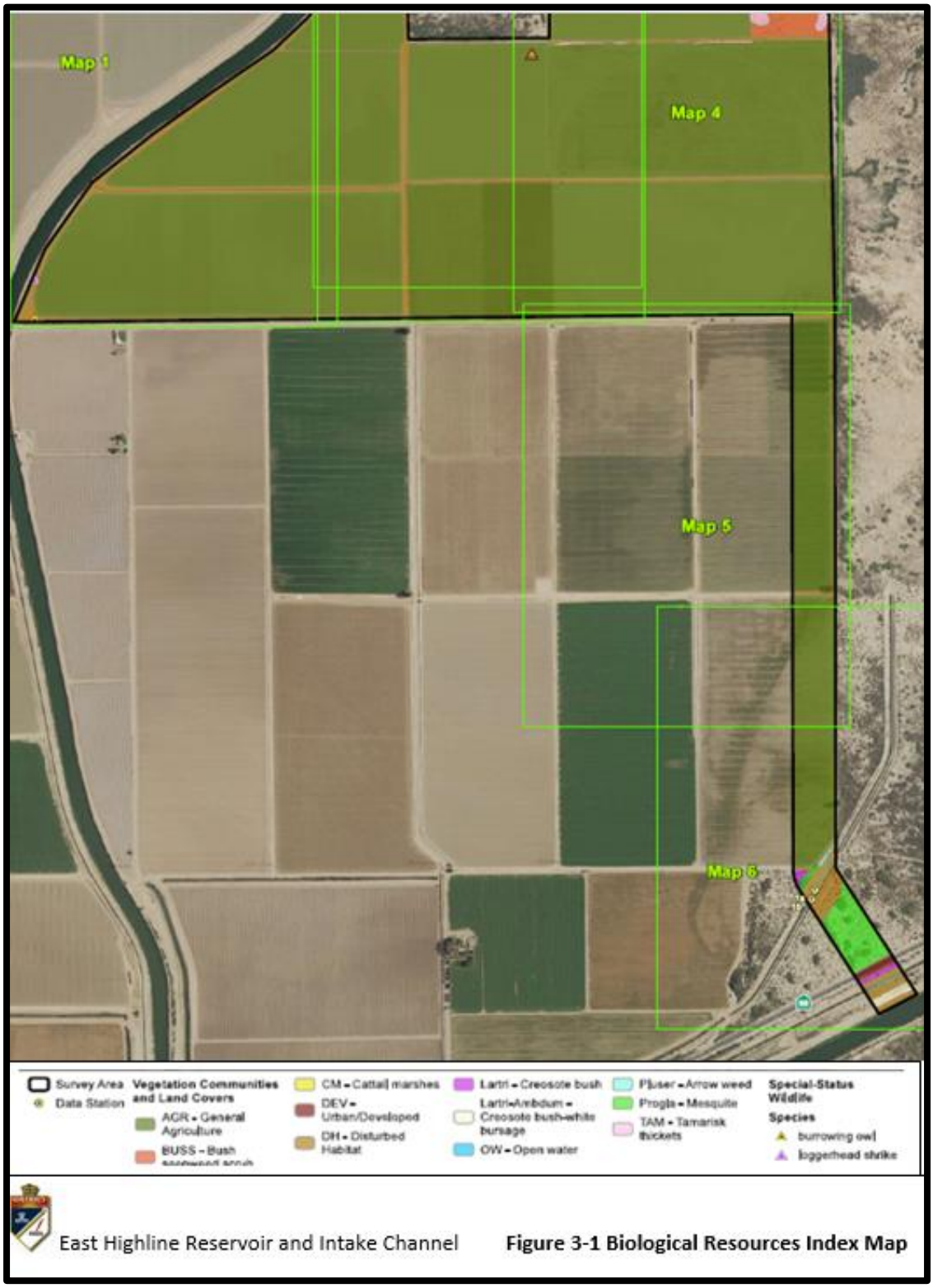

Note: Maps 1 thru 6 are found in the Dudek 2019 Biological Report.

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East Highline Reservoir and Intake Channel
Figure 3-2 Biological Resources Map 6

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3.4.3 Minimization and Mitigation Measures

The following avoidance and minimization measures shall be implemented during Proposed Action construction and operation and maintenance activities.

- Project construction limits and activities will be restricted to highly disturbed areas in order to avoid and minimize impacts to native vegetation and wildlife to the extent practical.
- Staging areas and improvements to access roads would be limited to previously disturbed areas and located away from the BLM's ACEC.
- All construction equipment will be cleaned and free of plant parts before moving into construction sites.
- There will be no impacts to waters of the U.S., the United States Army Corps of Engineers (USACE) issued a determination on November 2019 that the Proposed Action would not require a CWA permit from USACE.
- Trash and food materials will be properly contained within vehicles or closed refuse bins while on site, and will be regularly removed from the construction site for proper disposal.
- Worker Environmental Awareness Program training will be provided to construction personnel prior to commencing activities on resource protection measures.
- Additionally, while it is not expected that a federally or state-listed plant would be observed during these surveys, the biologist/botanist shall consult with the applicable agency (i.e., CDFW and/or USFWS) and obtain written concurrence for measures required for federally or state-listed plant species, if observed.
- Night-time activities should be minimized to the extent possible. If night-time activity (e.g., equipment maintenance) is necessary, then the speed limit shall be 10 mph
- Project proponent will comply with State of California permitting requirements (Section 1602 Streambed Alteration Agreement).
- Flat-tailed horned lizard surveys shall be conducted within the Proposed Project study area between April and September, (when surface temperatures are between 95º F and 122º F), prior to start of ground-disturbing activities to determine the status of the Flat-tailed Horned Lizard (FTHL) on-site (FTHL Working Group of Interagency Coordinating Committee 2003). The surveys shall be conducted in accordance to the FTHL Interim Survey Protocol in order to provide an assessment of FTHL presence or absence at a specific site. If the FTHL is found, relocation (if needed) shall be conducted in accordance with the Fencing and Removal Survey Protocols (Appendix 7 of the FTHL Interagency Coordinating Committee 2003). Persons that handle FTHL's will first obtain all necessary permits and authorization from the CDFW.
- No less than 14 days prior to ground-disturbing activities (vegetation clearance and/or grading), a qualified wildlife biologist (i.e., a wildlife biologist with previous burrowing owl survey experience) shall conduct pre-construction take avoidance surveys on and within 200 meters (656 feet) of the construction zone to identify occupied breeding or wintering burrowing owl burrows. The take avoidance burrowing owl surveys shall be conducted in accordance with the Staff Report on Burrowing Owl Mitigation (2012 Staff

Report; CDFW 2012). Copies of the burrowing owl survey results shall be submitted to the CDFW.

- If burrowing owls are detected on site, no ground-disturbing activities shall be permitted within 200 meters (656 feet) of an occupied burrow during the breeding season (February 1 to August 31), unless otherwise authorized by CDFW. During the nonbreeding season (September 1 to January 31), ground-disturbing work can proceed near active burrows as long as the work occurs no closer than 50 meters (165 feet) from the burrow. Depending on the level of disturbance, a smaller buffer may be established in consultation with CDFW.
- If avoidance of active burrows is infeasible during the nonbreeding season, then, before breeding behavior is exhibited and after the burrow is confirmed empty by site surveillance and/or scoping, a qualified biologist shall implement a passive relocation program in accordance with Biological Resources Report (i.e., Example Components for Burrowing Owl Artificial Burrow and Exclusion Plans) of the 2012 CDFW Staff Report on Burrowing Owl Mitigation (CDFW 2012). Passive relocation consists of excluding burrowing owls from occupied burrows and providing suitable artificial burrows nearby for the excluded burrowing owls. A burrowing owl monitoring and mitigation plan will be prepared that outlines how passive relocation would occur and where the replacement burrows would be constructed. It would also outline the monitoring and maintenance requirements for the artificial burrows.

By avoiding direct impacts to wetland, riparian, and riverine habitats, and limiting construction impacts to previously disturbed areas, impacts to federally listed species will be insignificant or discountable.

3.5 Cultural Resources

3.5.1 Affected Environment

The National Historic Preservation Act (NHPA) establishes national policy for protecting significant cultural resources that are defined as "historic properties" under 36 CFR 60.4. NHPA Section 106 (36 CFR 800) requires that Federal agencies consider and evaluate the effect that Federal projects may have on historic properties under their jurisdiction. The AAC is considered a historic property under 36 CFR 60.4.

An examination of existing maps, records, and reports was conducted to determine if the project area contains previously recorded cultural resources. Dudek conducted a records search in January and February 2017 at the South Coastal Information Center (SCIC) at San Diego State University. The search encompassed the Area of Potential Effect (APE) for the undertaking and a one -mile buffer around the APE. The purpose of the records search is to identify any previously recorded resources that may be located in or adjacent to the APE and to identify

previous studies in the vicinity of the proposed action. In addition to a review of previously prepared site records and reports, the records search also reviewed the National Register of Historic Places (NRHP), the California Register of Historical Resources (CRHR), the California Historic Property Data File, and the lists of California State Historical Landmarks, California Points of Historical Interest, and Archaeological Determinations of Eligibility. A search of the Native American Heritage Commission (NAHC) Sacred Lands File was also conducted.

A field survey of the APE was conducted in July 2017. Utilizing intensive pedestrian survey, the entire APE was inventoried. Six previously identified cultural resources are within the APE while pedestrian survey identified 12 new cultural resources. Three of the 18 cultural resources within the APE are prehistoric, while 15 are historic. The historic-period resources include the AAC, EHL Canal, and the All-American Drain 2A. The terrain and vegetation varied little throughout the APE. The majority of the reservoir portion of the Project APE consisted of plowed agricultural fields with no vegetation. The intake channel crosses earthworks including the All-American Drains 2 and 2A and SR-98. There is a small segment of undeveloped desert land located between the All-American Drain 2 and SR-98.

3.5.2 Environmental Consequences

No Action

Under the No Action Alternative, no reservoir would be constructed. No ground-breaking or excavation activities would occur. As such, no effect would occur related to cultural resources.

Proposed Action

Archival review identified six previously recorded cultural resources within the proposed Project APE while pedestrian survey identified 12 new cultural resources. These 18 cultural resources include 3 archaeological sites and 15 built environment resources. Native American and California State Historic Preservation Officer (SHPO) consultations are ongoing.

The cultural resources survey identified one unevaluated archaeological site within the APE that would be impacted by the Proposed Action activities: P-13-017218, identified during the survey of the proposed Project APE on January 4, 2018. This site underwent archaeological testing and all collected materials were transported to Dudek's archaeological laboratory. Cataloging and laboratory analysis of the excavated materials was conducted to aid in the evaluation of the site's eligibility for listing on the NRHP. Native American and SHPO consultations are ongoing.

Split Cell Option

The split cell design option would build two cells, separated by a dividing embankment, within the same disturbance area as the single cell design option. Therefore, impacts to archaeological, historical, and tribal cultural resources would be the same.

3.5.3 Minimization and Mitigation Measures

In accordance with 36 CFR Part 800.5 Reclamation has applied the criteria of adverse effect to historic properties to determine if the Proposed Action would directly or indirectly affect any of the characteristics of historic properties that make them eligible for inclusion in the NRHP. Impacts on cultural resources are considered significant if a resource is physically damaged, altered, or isolated from the context considered significant. To avoid potential impacts to cultural resources:

- Construction activities will be designed to avoid and minimize impacts to cultural resources by limiting project activities to previously disturbed areas.
- Consultation with the California SHPO and Native American Tribes under Section 106 of the NHPA will be conducted prior to implementing the Proposed Action.
- Monitoring by Native American Tribes will be conducted during all ground disturbing activities.
- Prior to start of construction, project proponent will have an on-call archaeologist that meets the Secretary of the Interior's Professional Qualifications Standards to assist with monitoring.

If during the course of any activities associated with the implementation of the Proposed Action any sites, buildings, structures, or objects not addressed in this assessment are discovered, activities will cease in the vicinity of the resource. Reclamation's Environmental Group Manager and project archaeologist will be notified immediately and appropriate coordination with Tribes will be conducted. Reclamation shall ensure that the stipulations of 36 CFR Part 800.11 are satisfied before activities in the vicinity of the previously unidentified property resume.

3.6 Hazards and Hazardous Materials or Solid Waste

3.6.1 Affected Environment

The Proposed Action site is not included on a list of hazardous materials sites based on the California's Department of Toxic Substances Control's (DTSC) data management system, EnviroStor (DTSC 2016). The site has historically and is currently being used for agricultural cultivation, since at least 1996. Besides the historical use of pesticides on the site, no other

hazardous materials were observed within the Project site. DTSC's Envirostor website identified no hazardous sites and facilities within a seven-mile radius of the site. The closest school to the Proposed Action site is Emmett S. Finley Middle School, located approximately 7.5 miles to the northwest, and the nearest residence located 150 feet south of the Proposed Action location.

3.6.2 Environmental Consequences

No Action

The No Action Alternative would have no effects related to hazards and hazardous materials or solid waste. The site would continue to be used as agricultural and undeveloped federal land and the potential of hazardous materials would remain the same as the existing conditions.

Proposed Action

During construction, there is the potential for short-term use of hazardous materials and fuels including gasoline, oil, solvents, and various other liquids and materials required for the operation of construction equipment. All contractors are required to comply with applicable laws and regulations regarding hazardous materials and hazardous waste management and disposal. Direct effects from accidental spills of small amounts of hazardous materials from construction equipment could potentially occur. However, the Proposed Action would comply with federal, state, and local health and safety requirements that are intended to minimize hazardous materials risk to the public, such as California's Occupational Safety and Health Administration (Cal/OSHA) requirements, the Hazardous Waste Control Act, California's Accidental Release Prevention Program (CalARP), and the California Health and Safety Code. Additionally, standard best management practices regarding hazardous materials handling protocols would be prepared and implemented to ensure the safe storage, handling, transport, use, and disposal of all hazardous materials during the construction phase of the Proposed Action. Due to past uses for agriculture, there is also the potential to expose previously used pesticides and herbicides. Therefore, with implementation of minimization and mitigation of hazards, proper use and disposal of these materials would not pose a significant risk to the public and the environment, and impacts resulting from discovery of previously unknown hazards would remain less than significant.

Construction of the Proposed Action would occur in an area favorable to the growth of Valley Fever, a fungus (*Coccidioides immitis*) that grows in soils in areas of low rainfall, high summer temperatures, and moderate winter temperatures. Project construction would disturb the soil and cause the fungal spores to become airborne, potentially putting construction personnel and wildlife at risk of contracting Valley Fever. However, Imperial County is not considered to have a high incidence of Valley Fever (BLM 2011). While the potential exposure of workers to Valley Fever spores could occur during construction, implementation of a Dust Control Plan and the provisions

of ICAPCD Regulation VIII identified to reduce PM_{10} in Section 3.3, would be effective in reducing airborne dust. No impacts associated with exposure to Valley Fever are anticipated during operation and maintenance activities.

Operations would not include the treatment of the water contained in the proposed reservoir. Day to day operations would be unmanned. These activities would not include the routine transport, use, or disposal of hazardous materials. Occasional maintenance activities like for inspections and repair would be made via crew trucks using existing roads infrastructure. Maintenance activities would be in compliance with all current local, state, and federal regulations listed above in the construction discussion. Impacts related to operations of the Proposed Action would be less than significant.

Split Cell Option

The split cell design option would build two cells, separated by a dividing embankment, within the same disturbance area as the single cell. The additional excavating and constructing of embankments would result in an increase in construction activities, however the split cell design option would be required to comply with the same restrictions and regulations as the single cell. Therefore, impacts related to hazards and hazardous materials or solid waste would be the same.

3.6.3 Minimization and Mitigation Measures

Mitigation actions designed to limit the potential impact of hazardous materials or solid waste would be implemented according to State and Federal regulations.

Soil Sampling and Disposal

Due to past uses for agriculture, prior to grading activities, soil shall be sampled and analyzed for metals and residual pesticides. Sampling shall be conducted in accordance with California DTSC guidance documents. The soil testing will confirm the presence or absence of on-site contamination associated with past uses on the Proposed Action site. Any soils qualifying as hazardous waste shall delineated, removed, and properly disposed of off-site. Any soil that exceeds the California Human Health Screening Levels shall be either remediated on site to levels protective of human health or removed and properly disposed of off-site. Should contaminants be identified, IID will retain a qualified Hazardous Materials Specialist for the Project to ensure appropriate remediation is conducted and completed on all affected areas.

Hazardous Materials Contingency Plan

A hazardous materials contingency plan shall be followed during demolition, excavation, and construction activities for the Proposed Action. The hazardous materials contingency plan shall include, at a minimum, the following:

- Identification of known areas with hazardous waste and hazardous materials of concern
- Procedures for temporary cessation of construction activity and evaluation of the level of environmental concern
- Procedures for restricting access to the contaminated area except for properly trained personnel
- Procedures for notification and reporting, including internal management and local agencies (e.g., Imperial County Fire Department, Imperial County Public Health Department), as needed
- Health and safety measures for removal and excavation of contaminated soil
- Procedures for characterizing and managing excavated soils
- Procedures for certification of completion of remediation

Site workers shall be familiar with the hazardous materials contingency plan and should be fully trained on how to identify suspected contaminated soil.

Spill Prevention Control and Countermeasures Plan

During construction, if aggregate aboveground oil/fuel storage capacity is greater than 1,320 gallons (or completely buried 42,000 gallons) and there is a reasonable expectation of an oil discharge into or upon navigable waters of the U.S. or adjoining shorelines, a spill prevention, control, and countermeasures (SPCC) plan pursuant to 40 CFR 112 (or, for small quantities, a spill prevention and response plan) shall be prepared and implemented during construction and, if applicable, during site operations. The SPCC plan (or spill prevention and response plan) shall identify best management practices for spill and release prevention and provide procedures for cleaning up and disposing of any spills or releases.

3.7 Noise

3.7.1 Affected Environment

Noise that currently exists in the area generally comes from vehicle travel along SR-98, and current ongoing AAC operations. The Proposed Action site is located on agricultural land with the nearest residence located 150 feet south of the Proposed Action boundary. The Proposed Action is also adjacent to open desert areas managed by the federal government, which is not populated.

3.7.2 Environmental Consequences

No Action

In the No Action Alternative, current noise levels from the existing agricultural land would continue at the present levels. External noise from EHL Canal and AAC operations would remain at current levels.

Proposed Action

During construction, the Proposed Action would have the potential to increase noise in the area due to construction equipment and workers in the area. The magnitude of the increases would depend on the type of construction activity, the noise level generated by various pieces of construction equipment, site geometry (i.e., shielding from intervening terrain or other structures), and the distance between the noise source and the nearest receiver. The maximum noise levels at 150 feet for typical equipment would be up to 74 dBA for the type of equipment normally used for this type of project (Appendix D, Field Noise Measurement Data). However, because equipment will be used throughout the site and at different intervals during the construction day, and due to the typical operating cycles for construction equipment, the hourly average noise levels would vary and would likely be lower than the maximum noise levels allowed. Noise from construction could result in annoyance at times to nearby noise-sensitive land uses—specifically, residences. However, the duration at any one location would be relatively brief, and Proposed Action construction would comply with County construction noise ordinance standards (i.e., construction activities would take place only between the hours of 8 a.m. and 6 p.m.). Restricting construction activities to the daytime period will avoid disruption of evening relaxation and overnight sleep periods. Construction of the Proposed Action would not result in adverse noise effects.

Maintenance would be undertaken by IID in accordance with existing practices for inspections and repair. No on-site operations and maintenance facilities would be provided. Inspections would be made via crew trucks and using the existing road infrastructure and the constructed perimeter road around the reservoir. Thus, once operational, the Proposed Action would not generate noise levels in excess of established standards. Furthermore, the Proposed Action would not have any operational staff which would be traveling to and from the Proposed Action site. As such, the Proposed Action would not result in substantial adverse operational noise effects.

Split Cell Option

The split cell design option would build two cells, separated by a dividing embankment, within the same disturbance area as the Proposed Action. The two cells would manage the same amount of water as the single cell, achieved by making the two cells slightly deeper. The additional excavating and constructing of embankments would result in an increase in construction activities,

resulting in an increase in construction noise effects. However, construction noise would not be noticeably different (louder) than the single cell nor result in an increase of 3 dBA or more. Operation of the split cell design option would generate the same noise as the single cell.

3.7.3 Minimization and Mitigation Measures

No mitigation measures are required for noise.

3.8 Indian Trust Assets

3.8.1 Affected Environment

Indian Trust Assets (ITAs) are legal interests in property held in trust by the US for Indian tribes or individuals, or property in which the US is charged by law to protect for Indian tribes or individuals. In accordance with the Indian Trusts Fund Management Reform Act of 1994, as amended, all the Department of the Interior agencies, including Reclamation, are responsible for protecting ITAs from adverse impacts resulting from their programs and activities. In cooperation with tribes, Federal agencies must inventory and evaluate assets, and mitigate or compensate for adverse impacts to the asset. While most ITAs are located on reservation lands, they may also be located off-reservation. Examples of ITAs include, but are not limited to, land, minerals, rights to hunt, fish, and gather, and water rights.

Water from the LCR has been a major source of supply for the Coachella Valley since 1949 with the completion of the Coachella Canal. This water is used for agricultural and non-urban purposes, as well as groundwater recharge. The Colorado River is managed and operated in accordance with the Law of the River, the collection of interstate compacts, federal and state legislation, various agreements and contracts, an international treaty, a U.S. Supreme Court decree, and federal administrative actions that govern the rights to use of Colorado River water within the seven Colorado River Basin states.

The water authority for the project area is IID. The AAC is a canal that brings water from the LCR into the Imperial and Coachella Valleys. Historically, CVWD received approximately 330,000 acre-feet per year (AFY) of Priority 3A LCR water delivered via the Coachella Canal. The service area for LCR water delivery under CVWD's contract with Reclamation is defined as Improvement District No. 1 (ID-1) which encompasses most of the East Valley and a portion of the West Valley north of Interstate 10. Under the 1931 California Seven Party Agreement, CVWD has water rights to Colorado River water as part of the first 3.85 million AFY allocated to California. CVWD is in the third priority position along with Imperial Irrigation District (IID).

3.8.2 Environmental Consequences

Reclamation departmental policy requires the agency to address potential impacts to ITAs even if impacts are found to be non-significant. The Proposed Action site is located approximately 45 miles to the east of the Fort Yuma Indian Reservation.

Trust Lands

The Proposed Action is not located on ITA lands. The nearest tribal land, Fort Yuma Indian Reservation, is located approximately 45 miles away from the Proposed Action site. There are no tribal residences and/or facilities within the Proposed Action area.

Water Rights

The nearest tribal land, Fort Yuma Indian Reservation, is served by Bard Water District as part of Bard's water rights contract with Reclamation.

Hunting, Fishing, and Gathering Rights

LCR water is currently delivered to the project vicinity via the AAC, and is primarily used for non-potable uses such as agricultural. As such, hunting, fishing and gathering generally does not occur in this section of the AAC.

No Action

Under the No Action Alternative, construction of the reservoir would not take place. Therefore, no change to Federal actions will occur that could result in an adverse effect to ITAs.

Proposed Action

Trust Lands

The Proposed Action would not interfere with any Trust Lands. The Proposed Action is not located on Trust Lands and would not prevent the use or management of any tribal or Trust Lands.

Water Rights

The Proposed Action would not result in a change to any tribal water right, or to the diversion or delivery of tribal water entitlements.

Hunting, Fishing, and Gathering Rights

The Proposed Action would not interfere with any hunting, fishing or gathering rights which could be exercised by any tribe.

Split Cell Option

The split cell design option would build two cells, separated by a dividing embankment, within the same disturbance area as the single cell. Therefore, impacts to ITAs would be the same.

3.8.3 Minimization and Mitigation Measures

No mitigation measures are proposed.

3.9 Hydrology and Water Quality

3.9.1 Affected Environment

The Proposed Action is located in a desert climate with no present or seasonal streams or rivers on or near the Proposed Action site. Imperial County only receives approximately 3 inches of rainfall annually (U.S. Climate Data 2018). As such, any surface runoff on the Proposed Action site would drain to shallow depths and evaporate.

According to the Imperial County's Water Element, Groundwater within the Imperial Valley is stored in the Pleistocene sediments of the Valley floor, the mesas on the west, and the East Mesa and sand hills on the east. However, the fine-grained lake sediments in the principal portion of the Imperial Valley inhibit groundwater movement, and tile-drain systems are required to dewater the sediments to a depth below the root zone of crops and to prevent the accumulation of saline water on the surface. Few wells have been drilled in these lake sediments because the yield is poor and the water is generally highly saline. The few wells in the Imperial County (East and West Mesa) are for domestic use only (County of Imperial 1993a). Groundwater in the Imperial Valley is of poor quality and is generally unsuitable for domestic or irrigation purposes (IID 2019).

The Proposed Action site is not located within a 100-year flood hazard area, nor is the site located in the Imperial Dam inundation area, Laguna Dam inundation area, or Senator Wash Dam inundation area, because all of these areas are more than 45 miles away from the Proposed Action site (County of Imperial 1993b; DWR 2016). The Proposed Action site is approximately 108 miles inland from the Pacific Ocean, 35 miles from the Salton Sea and would not be subject to inundation by tsunami.

3.9.2 Environmental Consequences

The Proposed Action would redirect a portion of Colorado River water supplies through the proposed intake channel and temporarily store it in the proposed reservoir. However, the existing AAC infrastructure is man-made and would not be considered a natural drainage of the area. The

proposed reservoir and intake route would be lined, therefore water flowing through the intake channel and reservoir would not seep into the underlying soils. Any precipitation to occur on the site would be managed onsite. As such, the Proposed Action would not create or contribute runoff water which may result in flooding, erosion, or inundation on or off site.

Operations of the proposed reservoir and intake channel would be unmanned, and would not require direct drawing of groundwater from the underlying aquifer. Therefore, the Proposed Action would not interfere with groundwater resources or local groundwater recharge.

Impervious surfaces over which runoff may occur would be minimal, consisting of access roads and accessory facilities. The Proposed Action is required to comply with the National Pollutant Discharge Elimination System (NPDES) SWRCB Construction General Permit Order No. 2009-0009-DWQ for storm water discharges and general construction activities, including preparation of a Storm Water Pollution Prevention Plan (SWPPP) that specifies BMPs that would be implemented during construction to minimize impacts to water quality. Any amount of water used for construction would be surface water delivered through IID's conveyance system. The Proposed Action would convey and manage surface water only. A SPCC Plan shall be prepared during construction, if applicable, for the unlikely event of spills from construction activities.

Although existing water flows would be altered, they would be altered using a proposed channel that would not result in substantial erosion or siltation on or off site. No wells or direct connections to the underlying aquifers are proposed for Proposed Action construction or operations, and any dust control actions would utilize water imported via water trucks. The connection to the AAC would be achieved the same as the existing EHL Canal connection to the AAC. The Proposed Action will allow IID to access the same amount of water as it is entitled to and would not affect the availability of water long-term in the AAC or the quality of water in the AAC during construction. The proposed reservoir will maximize the management of fluctuating downstream water demands from agricultural water users. Therefore, hydrology and water quality would not be adversely affected or altered as a result of the Proposed Action.

Split Cell Option

The split cell design option would build two cells, separated by a dividing embankment, within the same disturbance area and consistent with the same regulations as the single cell. Therefore, impacts to hydrology and water quality would be the same.

3.9.3 Minimization and Mitigation Measures

No mitigation measures are required for the Proposed Action. However, appropriate Best Management Practices (BMPs) shall be implemented during construction in order to protect water resources in the Proposed Action Area. No refueling equipment should be permitted within the Canal area, and staging areas will be located outside the Canal areas. Should an accident or spills occur, project proponent will implement a Spill Prevention, Control, and Countermeasures Plan (SPCCP) to contain and/or remove contamination to groundwater.

3.10 Land Use

3.10.1 Affected Environment

The Proposed Action site is largely located on land under the jurisdiction of Imperial County (as the land use authority) as well as within IID's and Reclamation's ROW and/or jurisdiction. The County of Imperial's General Plan, adopted in 1993 and revised and adopted in 2015, designate the land use for the Proposed Action location as Agriculture. Imperial County's Zoning Map has designated the Proposed Action location as A-2 (General Agricultural Zone) and A-3 (Heavy Agricultural). The A-2 zone permitted uses include agricultural accessory structure(s), buildings, and uses. A-3 zone permitted uses include agricultural accessory structures, miscellaneous uses including water storage or groundwater recharge facilities, and water systems (County of Imperial 1998). The proposed reservoir would be an agricultural accessory structure to IID's current irrigation and distribution system which spans over 1,667 miles of canals, contains similar accessory reservoir structures throughout which are designed to enable increased operational flexibility. IID delivers 97 percent of its water to agricultural operations.

3.10.2 Environmental Consequences

The Proposed Action would not conflict with the A-2 and A-3 zoning, established in the Imperial County Zoning Ordinance, considering the Proposed Action would include similar uses to those allowed, such as aquaculture fish farms, flood control facilities, water storage, water systems, and sewage treatment facilities. Specifically the Proposed Action includes water storage and water systems to manage the water for agricultural use. The Proposed Action is in support of the Reclamation Reform Act of 1982 to " . . . encourage . . . consideration and incorporation of prudent and responsible water conservation measures . . .by . . . recipients of irrigation, municipal and industrial water . . ." Furthermore, the Proposed Action would not conflict with the goals and policies of BLM's Desert Renewable Energy Conservation Plan. No substantial adverse effects would occur related to land use.

Split Cell Option

The split cell design option would build two cells, separated by a dividing embankment, within the same disturbance area as the single cell. Therefore, impacts to land use would be the same.

3.10.3 Minimization and Mitigation Measures

No mitigation measures are required for land use.

3.11 Geology and Soils

3.11.1 Affected Environment

The Alquist-Priolo Earthquake Fault Zoning Act identifies no active faults within the Bonds Corner Quadrangle within Imperial County. Consequently, the risk of surface rupture is low. The site has previously been developed and disturbed, and there are no known cases of landslide, lateral spreading, subsidence, liquefaction, or collapse occurring on site. According to United States Department of Agriculture's (USDA) Web Soil Survey, the Proposed Action site is located on predominantly Rositas fine sand; other soils include Rositas sand, Meloland and Holtville loams, Meloland very fine sandy loam, and Holtville silty clay. These soils are predominantly considered moderately well drained.

3.11.2 Environmental Consequences

Because the Proposed Action is anticipated to result in a disturbance of more than one acre of land, compliance with the NPDES General Construction Permit would be necessary, as well as preparation of a water management plan that would minimize or eliminate the potential soil erosion that could result from construction. Construction activities for the Proposed Action, would not be at risk of causing landslides or seismic hazards.

Prior to construction, a geotechnical report would be prepared to assess the Proposed Action's susceptibility to landslides, lateral spreading, subsidence, liquefaction, or collapse. Geotechnical recommendations would be implemented as a part of the Proposed Action design and construction plans to protect the Proposed Action from landslides, lateral spreading, subsidence, liquefaction, and collapse. Therefore, by preparing a geotechnical report and complying with the Uniform Building Code and other applicable geologic regulations, no substantial adverse effects would occur related to geology and soils.

No groundbreaking activities would result during operations of the Proposed Action. Operations of the Proposed Action would include an un-manned operational reservoir and intake channel. The

project site is not in an area with mapped active earthquake faults. Therefore, no impact would occur to geology and soils during operation.

Split Cell Option

The split cell design option would build two cells, separated by a dividing embankment, within the same disturbance area as the single cell. While excavation depths would be slightly deeper, the geologic location and geotechnical recommendations would be the same. Therefore, impacts related to geology and soils would be the same.

3.11.3 Minimization and Mitigation Measures

No mitigation measures are required for geology and soils.

3.12 Visual Resources

3.12.1 Affected Environment

The surrounding areas of the Proposed Action consist of generally flat agricultural land, in a rural, sparsely populated area of Imperial County. The Proposed Action site is bound to the west by the EHL Canal, further west are agricultural fields. East of the site is open, desert landscape owned by BLM, characterized by desert shrubbery and patches of ground cover. To the north and south, the Proposed Action site is bound by scattered agricultural fields and open desert landscape, and a few scattered single-family dwellings to the south. The Proposed Action site has no visual resources such as trees, rock outcroppings, or historic buildings. The Proposed Action site is not within a designated scenic vista, and there are no officially designated state scenic highways that exist within the Proposed Action vicinity. The nearest residential structure is located approximately 150 feet south of the proposed reservoir.

The County of Imperial General Plan Conservation and Open Space Element identifies the visual quality of the BLM land adjacent to the Proposed Action to be "Moderate" or "High Value" (County of Imperial 2016). As discussed in the Imperial County General Plan, many of the natural scenic resources are located on land under BLM jurisdiction. The Proposed Action will not impede or hinder access to the BLM lands located to the east.

3.12.2 Environmental Consequences

The proposed reservoir and intake channel Project is not anticipated to damage or compromise any outstanding aesthetic features. With the EHL Canal directly to the west, and the AAC directly south of the Proposed Action site, the proposed reservoir and intake channel would not be unordinary in the Proposed Action vicinity. Because of the flat and rural character of the area, which includes

existing water infrastructure features, the Proposed Action would not obstruct scenic vistas or degrade the existing visual quality or visual character of the site and surroundings. In addition, the Proposed Action site would not damage or degrade any scenic resources designated by the local jurisdiction.

With the nearest residential structure located 150 feet south of the proposed reservoir, the views from this residence would experience minor changes in views north of Verde School Road. Beyond the current intake berm visible for the existing irrigation ditch would be the proposed 10 foot berm at least 150 feet from the residence. The proposed embankments of the reservoir and intake channel would shield any glare from the Proposed Action. Operational and construction lighting would be used for safety and security purposes. All lighting would be directed downward or at a narrow beam angle, in order to focus all light only on the desired area. Although the Proposed Action may create a new source of glare from the large body of water, it would not affect day or nighttime views, because of the absence of elevated vantage points. As such, impacts would be less than significant.

Split Cell Option

The split cell design option would build two cells, separated by a dividing embankment, within the same disturbance area as the single cell. While the berm heights would be slightly taller than those of the single cell, the increase would not be noticeable even at the closest residence (approximately 150 feet away). Therefore, impacts to visual resources would be the same.

3.12.3 Minimization and Mitigation Measures

No mitigation measures are required for visual resources.

3.13 Environmental Justice and Socioeconomic Considerations

3.13.1 Affected Environment

The Office of Environmental Health Hazard Assessment's CalEnviroScreen[1] tool identified the census tract in which the Proposed Action is located to have a CalEnviroScreen 3.0 Percentile of 70-75%, meaning the Proposed Action's census tract is ranked within the 68th percentile throughout the state in pollution burden. The Proposed Action area ranks above 75% for hazardous cleanup sites, hazardous waste, impaired water bodies, solid waste sites, asthma cases, and poverty (OHHA 2018). According to Southern California Association of Government's (SCAG) Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) Environmental Justice

[1] CalEnviroScreen is a screening tool that evaluates the burden of pollution from multiple sources in communities while accounting for potential vulnerability to the adverse effects of pollution. CalEnviroScreen ranks census tracts in California based on potential exposures to pollutants, adverse environmental conditions, socioeconomic factors and prevalence of certain health conditions. Data used in the CalEnviroScreen model come from national and state sources.

Appendix (SCAG 2016), the Proposed Action area is designated as a Disadvantaged Community, based on the requirements set forth in Senate Bill 535 Disadvantaged Communities with Environmental Justice Areas.

The 2018 California Water Plan incorporates socio economic objectives within the State's water conservation efficiency and reliability goals: Goal 2-Strengthen Resiliency and Operational Flexibility of Existing and Future Infrastructure; Goal 4-Empower California's Under-Represented and Vulnerable Communities; and, Goal 6-Support Real-time Decision-making, Adaptive Management, and Long-term Planning. The Proposed Action is consistent with these established goals and in furthering the Plan's objectives.

3.13.2 Environmental Consequences

Implementation of the Proposed Action would not disproportionately affect the minority and impoverished population in the area. Based on the analysis for air quality, noise, water resources, hazardous materials, and visual resources in this EA, changes resulting from implementing the Proposed Action would not result in proportionately high and adverse effects to the environment or to the health of low-income and minority populations. As stated in Section 1.3, Project Purpose and Need, the Proposed Action would assist the state in achieving water efficiency, reliability and conservation goals. The Proposed Action would not disproportionately affect a group of people or socio-economic class.

Split Cell Option

The split cell design option would build two cells, separated by a dividing embankment, within the same disturbance area as the single cell. While the split cell design option would require increased earth movement and associated construction activities it would not increase the maximum daily construction intensity or significantly increase the total emissions such that the environment or health of low-income or minority populations would be impacted. Therefore, impacts to environmental justice and socioeconomics would be the same.

3.13.3 Minimization and Mitigation Measures

No mitigation measures are required under environmental justice and socioeconomic considerations.

3.14 Cumulative Effects of the Proposed Action

NEPA requires federal agencies to consider the cumulative effects of proposals under their review. Cumulative effects are defined in the CEQ regulations 40 CFR §1508.7 as "…the impact on the environment that results from the incremental impacts of the action when added to other past,

present, and reasonably foreseeable actions regardless of what agency…or person undertakes such other actions." The CEQ states that the "cumulative effects analysis should be conducted on the scale of human communities, landscapes, watersheds, or airsheds" using the concept of "project impact zone" or more simply put, the area that might be affected by the Proposed Action. Several current and planned projects, either located within or in the vicinity of the planning area, that may have the potential to generate a cumulative effect when analyzed in conjunction with the Proposed Action are noted as follows:

- AAC Seepage Recovery Project (an IID project)
- Imperial Solar Energy West
- Iris Cluster Solar Farm Project
- California Energy Commission Alternative Energy Update Project
- Campo Verde Solar Project

The following analysis of the effects from these Projects concluded that effects to resources would not be substantial. Resource types perceived to have only temporary effects (effects that end following construction of the respective project or within a few seasons following construction). The Campo Verde Solar Project, located 7 miles southwest of El Centro, and the AAC Surface Waters Seepage Recovery Project are two projects that have been identified that have the potential to overlap in construction periods. Considering the Campo Verde Solar Project is approximately 21 miles away from the Proposed Action, the Proposed Action, in combination with this project is not anticipated to result in any significant cumulative effects.

3.14.1 Effect by Resource

Air Quality

Should the Proposed Action and the AAC Seepage Waters Recovery Project be constructed at the same time, the greenhouse gas emissions emitted from the two projects would both be temporary and insignificant. Additionally, the peak of emissions would not likely overlap. As such the Proposed Action in combination with the AAC Surface Waters Seepage Recovery Project, would not produce significant cumulative effects to air quality and climate conditions.

Biological Resources

The Proposed Action has the potential for adverse biological effects due to habitat loss for sensitive and common wildlife species. However, with incorporation of avoidance, minimization, and mitigation measures, the Proposed Action Alternative, in conjunction with the other actions, is not anticipated to have substantial adverse cumulative effects to biological resources.

In general terms, in instances where a potential impact could occur, CDFW and USFWS have promulgated a regulatory scheme that limits impacts on these species. The effects of the projects would be rendered less than significant through mitigation requiring compliance with all applicable regulations that protect plant, fish, and animal species, as well as waters of the U.S. and state. Other cumulative projects would also be required to avoid impacts on special-status species and/or mitigate to the satisfaction of the CDFW and USFWS for the potential loss of habitat. Therefore, the Proposed Action, in conjunction with other projects listed above, would not result in substantial adverse cumulative effects on fish and wildlife.

As discussed in section 3.4, the Proposed Action would permanently impact approximately 0.08 acre of wetlands. Long-term direct impacts to loss of vegetation communities would be mitigated with restoration and enhancement within nearby disturbed areas. Permanent impacts to jurisdictional waters/wetlands would be minimized as they require a site-specific wetlands mitigation plan. The cumulative projects listed above, such as the AAC Seepage Recovery Project may have temporary and permanent impacts to wetlands and riparian area, however that project would also require mitigation at the required ratios and would be subject to federal, state, and local regulations.

No cumulative effects are anticipated to wetlands and riparian areas from the Proposed Action because the potential effects identified would be mitigated at regulated ratios subject to agency permitting and all other cumulative projects effects would be subject to similar mitigation requirements. The Proposed Action, in conjunction with other proposed or ongoing projects described above, would not result in cumulatively substantial adverse effects to wetlands and riparian areas.

Archaeological/Cultural/Tribal Cultural Resources

During the implementation phase of the Proposed Action, there is potential for unforeseen cultural resources to be discovered or damaged. Reclamation has established “stop work” procedures that shall be implemented should an unanticipated discovery situation arise. Federal and/or State laws developed to preserve and manage cultural resources would apply to activities undertaken at the Proposed Action area. Therefore, the Proposed Action, in conjunction with other projects listed above, would not result in substantial adverse cumulative effects on cultural resources.

Hazardous Materials or Solid Waste

No cumulative effects are anticipated to hazards/hazardous materials/human health and solid waste because the Proposed Action would not cause direct or indirect effects to this environmental category. During construction, there is the potential for short-term use of hazardous materials and fuels including diesel fuel, gasoline, and other oils and lubricants. These hazardous materials would be transported and disposed of in compliance with all current local, state, and federal regulations. Other projects described in this section may have hazards/hazardous materials related

effects due to construction activities. However, with compliance to existing regulations through minimization measures, these risks would be cumulatively less than significant as these effects are localized and temporary.

Noise

The Proposed Action Alternative would have the potential to increase noise in the area due to construction equipment and workers in the area. Construction noise from the Proposed Action and concurrent projects are expected to remain well below noise levels established in the County General Plan. Noise levels dissipate over distance, therefore, considering the nearest concurrent project is located over 3.5 miles away, adverse cumulative noise effects are not anticipated.

Indian Trust Assets

There are no ITAs or other resources of tribal concern in the project area, and adverse impacts on ITAs or other tribal resources from implementation of the Proposed Action would not occur. Therefore, the Proposed Action, in combination with other proposed or on-going projects, would not cause adverse cumulative effects on ITAs.

Hydrology and Water Quality

The Proposed Action would have beneficial effects related to ensuring water supply to the Imperial County population. The Proposed Action would manage water for delivery to agricultural uses and more efficiently use the same water volume as currently used from the AAC. As such the subsequent end drainage of water to the Salton Sea would not be adversely affected by the Proposed Action. The AAC Surface Waters Seepage Recovery Project would potentially increase the water volume available from the AAC be reducing loss. No other cumulative projects would result in cumulative changes to the water volume in the system and thus final drainage amounts into the Salton Sea. The Proposed Action, in conjunction with other proposed or ongoing projects described above, would not result in cumulatively adverse effects to water resources.

The AAC Surface Waters Seepage Recovery Project, along with other projects over 1 acre in size (which includes most of the projects in the cumulative scenario), would be required to obtain coverage under the NPDES Construction General Permit, which requires project proponents to identify and implement stormwater BMPs that effectively control erosion and sedimentation and other construction-related pollutants. IID's stormwater standards manual also requires smaller projects (less than 1 acre) to implement a minimum set of water quality BMPs.

The various NPDES permits required are aimed at maintaining the beneficial uses of the water bodies in the RWQCB Basin Plan and meeting water quality objectives associated with specific pollutants of concern. Because adverse water quality and major hydrologic alterations are linked to the large-scale,

cumulative effects of development projects, as well as industrial and/or agricultural land uses, the provisions within the various NPDES permits, by their nature, seek to address cumulative conditions.

In terms of water supply, the Proposed Action would increase water efficiency and reliability of agricultural water for the Imperial Valley. Additionally, any cumulative project within the County's jurisdiction that meets the definition of a "project" under Senate Bill 610 and/or Senate Bill 221 would be required to prepare a Water Supply Assessment, which requires detailed information regarding water availability to be provided to local decision makers prior to approval of specified large development projects as well as updates to community plans, new specific plans, or certain plan amendments. Therefore, the Proposed Action when combined with cumulative projects, would not result in a cumulative impact regarding water supply.

Land Use

Applicable regional land use plans identified cumulatively significant and unavoidable land use impacts related to incremental adverse physical changes to the environment. While such effects have been attributed to renewable energy projects including the listed cumulative solar projects, the Proposed Action would not involve a use or physical change inconsistent with the rural and farming uses of the area. The Proposed Action would not conflict with the A-2 and A-3 zoning, established in the Imperial County Zoning Ordinance, considering the Proposed Action would include similar uses to those allowed. As such the Proposed Action would not contribute to in a cumulatively considerable contribution to cumulative impacts related to the compatibility of the Proposed Action with applicable land use plans.

Geology and Soils

Potential cumulative impacts on geology and soils would result from projects that combine to create geologic hazards, including unstable geologic conditions, or substantially contribute to erosion. The majority of impacts from geologic hazards, such as rupture of a fault line, liquefaction, landslides, expansive soils, and unstable soils, are site-specific and must be mitigated on a project-by-project basis. The Proposed Action and all future projects in the region would be required to adhere to proper building engineering design per most recent Uniform Building Code or in order to ensure the safety of building occupants and avoid a cumulative geologic hazard. Additionally, projects would incorporate individual mitigation for site-specific geologic hazards present on each individual cumulative project site. Therefore, cumulative impacts related to site-specific geologic hazards would not occur.

Visual Resources

As discussed in Section 3.14, Visual Resources, the Proposed Action would not result in a substantial change to natural topography, the blockage of public views, or degrade the existing

visual character or quality of the site and its surroundings. The Proposed Action would not damage or degrade any scenic resources designated by the local jurisdiction. Other cumulative projects are subject to design review prior to discretionary approvals or permit issuance, which reduces the opportunity for significant cumulative visual effects and visual character impacts. However, impacts may result from renewable energy projects. The Proposed Action would not contribute considerably to cumulative visual effects.

Environmental Justice and Socioeconomics

As discussed in Section 3.15, Environmental Justice and Socioeconomics, the location of Proposed Action is designated as a Disadvantaged Community. However, the Proposed Action would not result in proportionately high and adverse effects to the environment or to the health of low-income and minority populations. As such, no disproportionate environmental effects would result from the Proposed Action and contribution to environmental justice or socioeconomic effects would not be cumulatively considerable.

Chapter 4. Consultation, Coordination, and List of Preparers

4.1 Agencies Consulted

4.1.1 Scoping

Reclamation sent a letter to the entities listed below to solicit scoping comments, interest, and issues of concern on December 3rd, 2019. The Fort Yuma Quechan Indian Tribe's Cultural Committee (Committee) responded with an email requesting a meeting regarding the scoping request December 13th. Reclamation met with the Committee by conference call and discussed the project on January 10th, 2020. The Committee requested a field trip at the proposed project location to further discuss the proposed project, which took place on February 28th, 2020. Reclamation continues to consult with the Committee regarding the proposed project. The California Department of Transportation, District 11 responded with a letter including list of suggested items to address in the draft EA. No other scoping comments or letters were received. A copy of the scoping letter sent by Reclamation soliciting comments is available upon request.

- USFWS, Palm Springs office
- BLM, El Centro Field Office
- CDFW
- California Department of Transportation, District 11
- IID
- California Regional Water Quality Control Board
- Fort Yuma Quechan Indian Tribe
- Imperial County Planning and Development Services Department
- USACE, Carlsbad office

4.1.2 Draft Environmental Assessment

An electronic copy of this EA has been posted for public viewing on Reclamation's Yuma Area Office web site at http://www.usbr.gov/lc/yuma/. Paper copies of the Notice of Availability memorandum and EA were distributed to the following entities:

- USFWS, Palm Springs office
- BLM, El Centro Field Office
- CDFW
- California Department of Transportation, District 11

- IID
- California Regional Water Quality Control Board
- Fort Yuma Quechan Indian Tribe
- Imperial County Planning and Development Services Department
- USACE, Carlsbad office

Consultations with the California State Historic Preservation Officer and tribal representatives are ongoing under Section 106 of the NHPA (36 Part 800) for undertakings involving Federal facilities.

4.1.3 Final Environmental Assessment

Reclamation will consider and incorporate relevant comments from the Draft EA and publish a Final EA and FONSI if a determination is made that an EIS is not required and a FONSI is appropriate. Reclamation will make the final documents available on the Yuma Area Office's Environmental Documents web site.

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