

Figure 1.7-2c
Level Basin
IID Water Conservation and Transfer Project Draft HCP

method of on-farm water conservation under landowner contracts. IID's Board of Directors has also adopted Resolution No. 5-96 stating that IID will not support fallowing programs for purposes of transferring water. However, there is no prohibition of fallowing under the terms of the QSA. Fallowing may be considered a potentially viable method to achieve water conservation to meet IID's obligations under the QSA to produce conserved water for transfer, to comply with the limit on total water diversions by IID and/or to comply with the Inadvertent Overrun Policy (which generally requires IID to make up in subsequent years for inadvertent overruns of the 3.1 MAF cap on annual diversions from the Colorado River). Therefore, this HCP covers take of covered species that could result from the fallowing described above for water conservation purposes by IID or farmers and landowners. In addition, the HCP covers take of covered species associated with returning fallowed land into agricultural production.

1.7.2.2 System-based Water Conservation Activities

As part of the water conservation and transfer programs, IID will implement operational and structural improvements to conserve water and enhance water delivery and drainage system capabilities and service. The specific improvements to be undertaken are uncertain at this time; however, the types of improvements that IID could pursue include the following:

- Additional lining of canals and laterals
- Replacement of existing canal linings as normal maintenance
- Automation of flow control structures
- Installation of check gates in the laterals that are automated or manually operated
- Installation of nonleak gates
- Installation of additional lateral interceptors
- Installation of additional pipelines
- Installation of additional reservoirs, including small, mid-lateral reservoirs to provide temporary water storage
- Development of water reclamation systems
- Installation of pump or gravity-operated seepage recovery systems

Additional information on system-based conservation measures is provided in the IID Water Conservation and Transfer EIR/EIS. All water conservation practices implemented by IID and within IID's canal and drainage systems are covered under this HCP.

Canal Lining and Piping

Canal lining consists of lining canals with concrete or using pipelines to reduce seepage. About 537 miles of canals are currently unlined. Canal lining is currently contemplated for three canal sections in the IID service area totaling about 1.74 miles (Figure 1.7-3; Table 1.7-2). To line a canal, the existing canal is filled in and then trenched to form a trapezoidal channel. Concrete is then installed on the banks and bottom of the channel using a lining float. Construction activities can be conducted within the canal's right-of-way and

TABLE 1.7-2
Canals Currently Anticipated to Be Lined to Conserve Water
and Area Temporarily Disturbed to Line Canals

Canal	Length (miles)	Acreage Affected
Rose Lateral 9	0.25	2.12
Ash Lateral 43	0.49	4.16
N Lateral	1.00	8.48
Total	1.74	14.76

affects an area about 70 feet wide centered on the canal. The canal rights-of-way consist of either roads, embankments or other disturbed ground. Table 1.7-2 shows the current anticipated acreage that would be affected under proposed canal lining. About one week is required to line a mile of canal. For the canal lining anticipated thus far, this work would be completed within two weeks. In addition, although no additional canals are planned or anticipated, IID may need to construct new canals over

the term of the permit and line those as well. The exact location, size, and length of future canals are uncertain at this time; however, any new canals would be within IID's current water service area. To cover the potential for canal lining beyond that amount presently anticipated, IID is seeking coverage for lining the remaining laterals (up to 320 miles) over the term of the HCP. If IID lined these additional laterals, up to 2,700 acres could be temporarily disturbed. The temporarily disturbed area would be within IID's rights-of-way and would consist of previously disturbed areas such as roads and embankments.

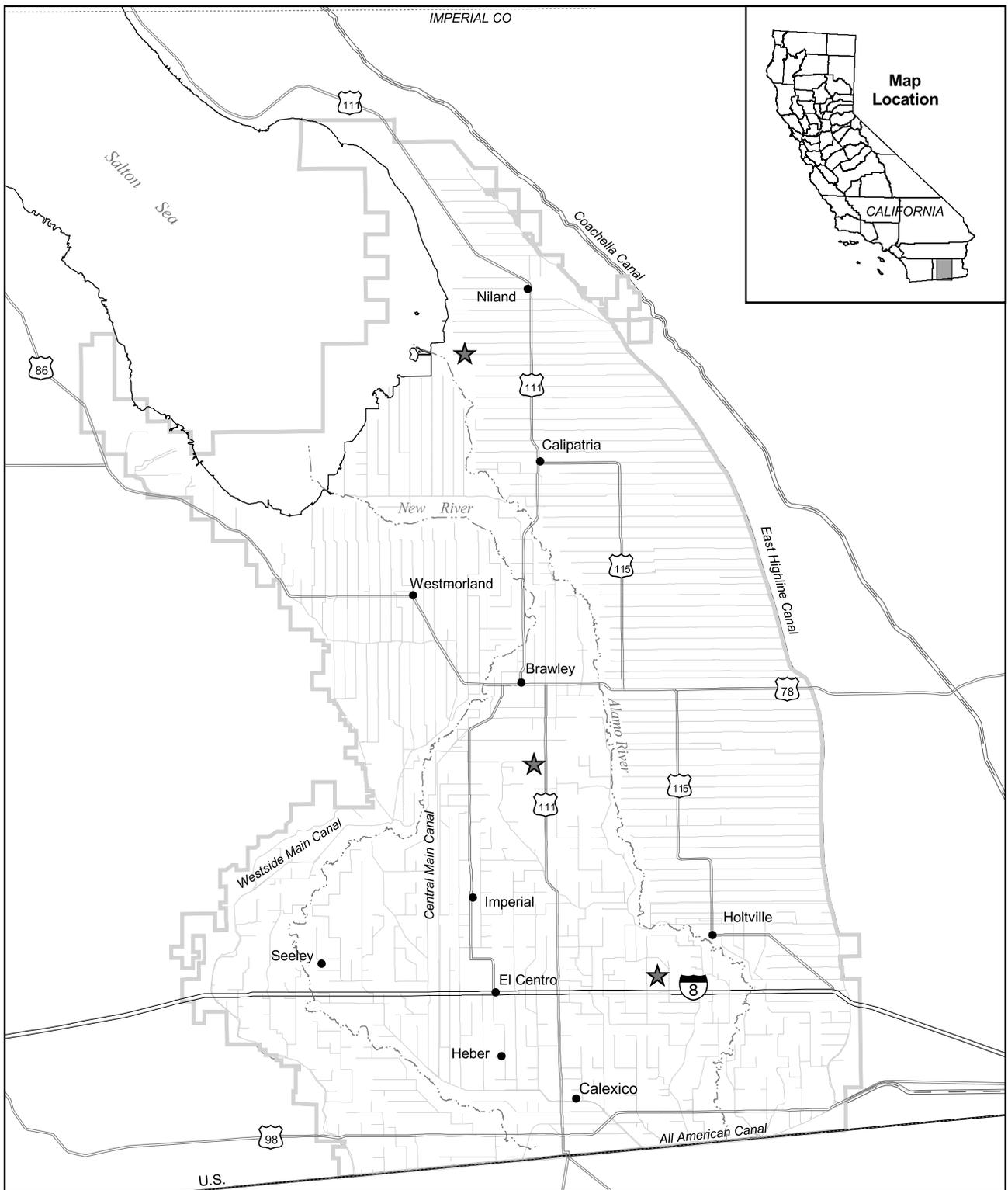
Lateral Interceptors

A lateral interceptor system consists of new canals and reservoirs that collect operational spills from lateral canals. Lateral interceptors are lined canals or pipelines that generally run perpendicular to lateral canals at their terminus. The lateral interceptors capture operational spill water, unused water resulting from canal fluctuations, and return water from farmer delivery reductions or changes. The interceptors convey this captured water to regulating reservoirs where the water can be stored and reused in another canal serving another delivery system as needed. IID currently has four systems in operation and potentially could enlarge that to 16 additional systems under the water conservation and transfer programs (Figure 1.7-4; Table 1.7-3).

Installation of a lateral interceptor requires constructing and lining a canal, installing pipelines and constructing a minimum 40-surface-acre reservoir (Figure 1.7-5). An approximately 70-foot-wide area centered on the new interceptor would be affected by the construction. The affected area of the reservoir site would be only slightly larger than the reservoir itself. Table 1.7-3 shows the acreage potentially affected by each of the interceptors. The total acreage potentially affected by construction of lateral interceptors could be about 1,480 acres (i.e., about 840 acres of canals and 640 acres of reservoir).

Reservoirs

Two types of reservoirs can facilitate water conservation: (1) operational reservoirs (includes mid-lateral reservoirs) and (2) interceptor reservoirs. Operational reservoirs are generally placed in locations to take advantage of delivery system supply and demand needs and in some cases include locations of historical canal spills. These reservoirs are used to regulate canal flows in order to match or optimize demand flows to supply flows. Conservation is



- ★ PROPOSED CONVEYANCE LINING
- AQUEDUCT/CANAL
- - - COUNTY LINE
- == INTERSTATE HIGHWAY
- == REGIONAL HIGHWAY
- - - RIVER
- IID WATER SERVICE AREA
- CITIES



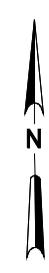
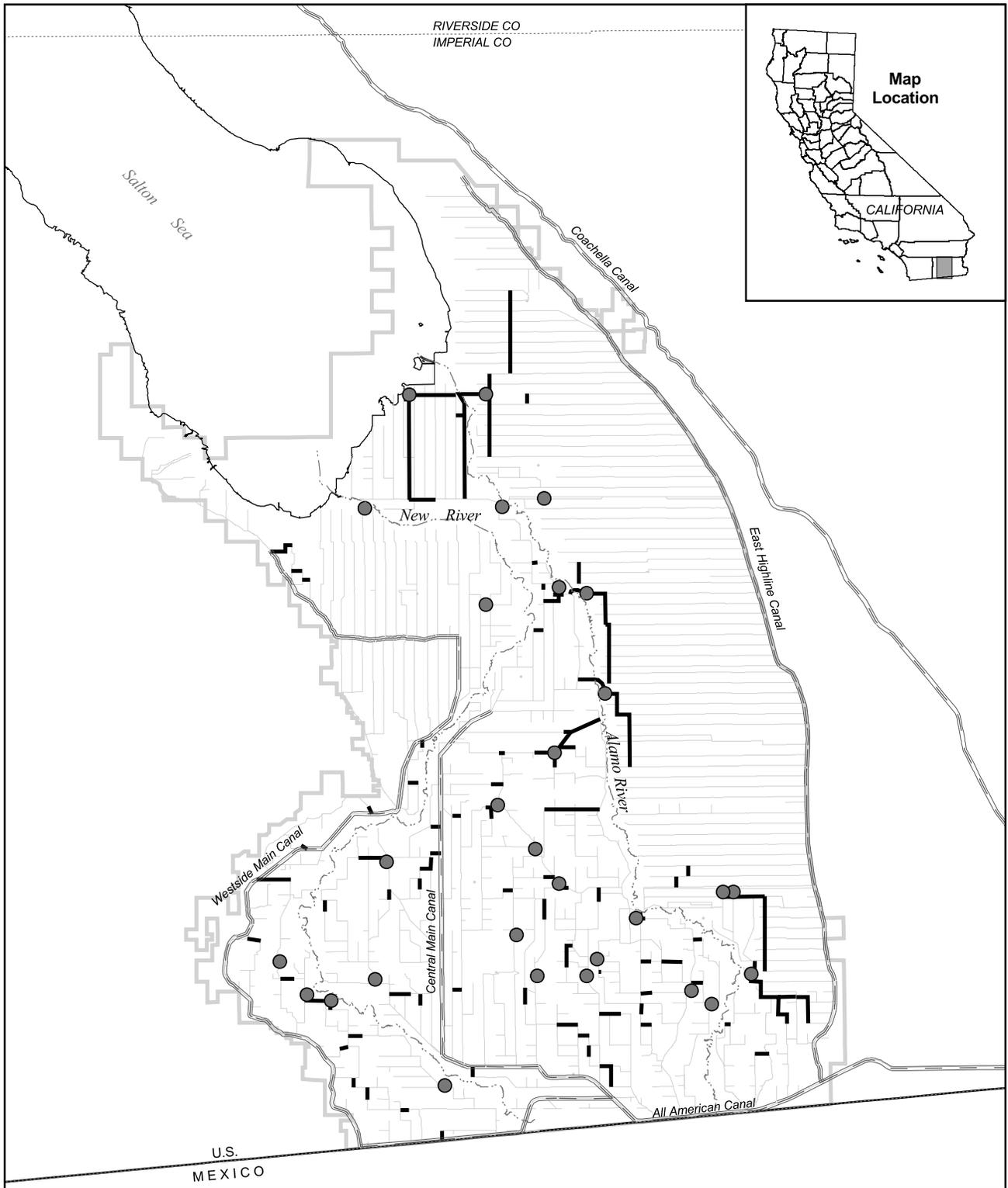
Source:
University of Redlands, 1999; DOI, 1999;
US Filter, 2000

5 0 5 Miles

SCALE IS APPROXIMATE

Figure 1.7-3
Proposed Conveyance
Lining Locations in the
IID Water Service Area

IID Water Conservation and
Transfer Project Draft HCP



Source:
University of Redlands, 1999; DOI, 1999

5 0 5 Miles

SCALE IS APPROXIMATE

Figure 1.7-4
Proposed Lateral Interceptor
Systems and Reservoirs in the
IID Water Service Area
 IID Water Conservation and
 Transfer Project Draft HCP

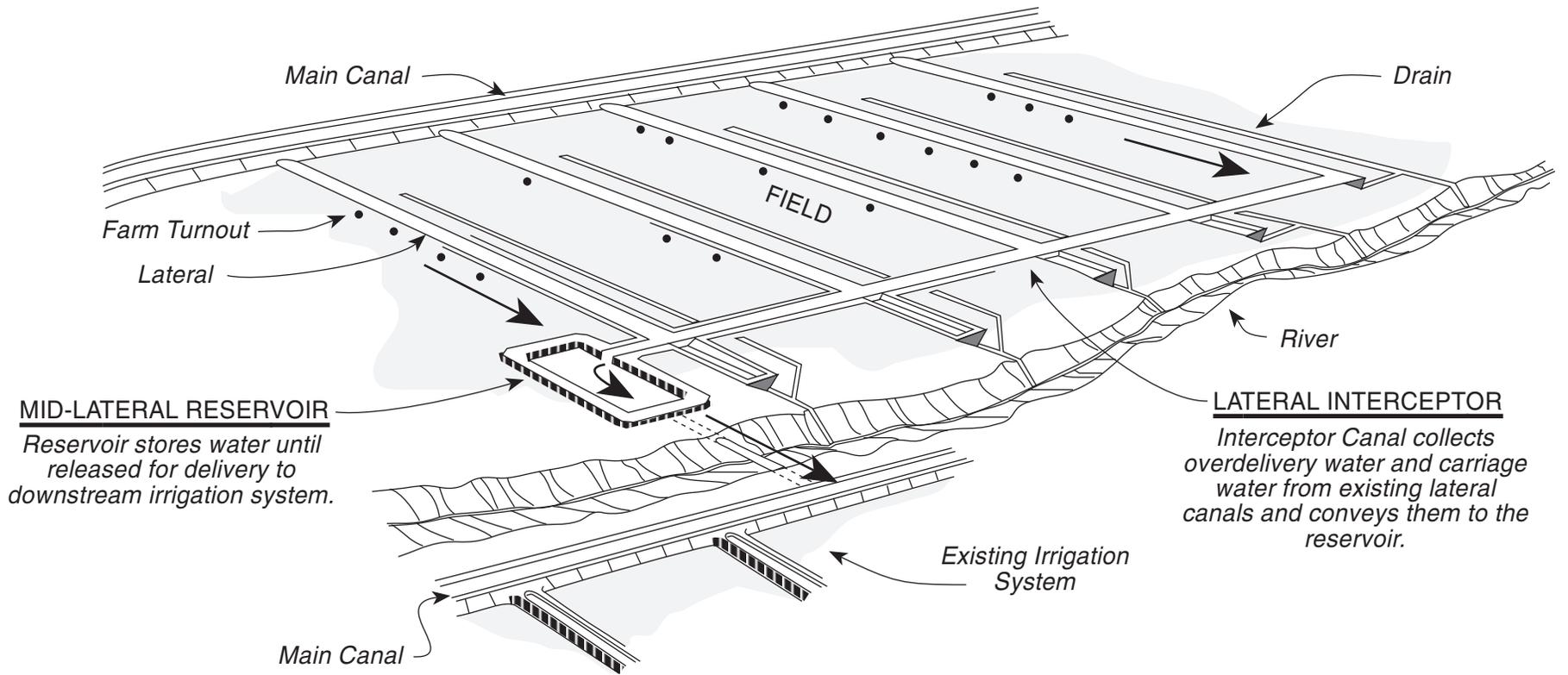


Figure 1.7-5
Conceptual Lateral Interceptor
System and Mid-Lateral Reservoir
 IID Water Conservation and Transfer Project Draft HCP

TABLE 1.7-3
Proposed Lateral Interceptors and Acreage Affected by Construction

Interceptor	Type	Length (miles)	Acreage Affected
Acacia	Canal	8.62	73.12
Ash	Canal	4.55	38.57
	Pipe	1.00	8.52
Elder	Canal	7.61	64.60
Fern	Canal	1.14	9.64
	Pipe	2.18	18.48
Holt	Canal	5.76	48.85
	Pipe	1.02	8.68
Niland	Canal	9.28	78.74
	Pipe	6.53	55.44
Orient-Oleander	Canal	4.17	35.35
	Pipe	1.52	12.86
Orita-Munyon	Canal	4.92	41.78
	Pipe	0.76	6.43
Peach	Canal	6.63	56.24
Redwood	Canal	8.52	72.31
	Pipe	2.01	17.03
Rockwood	Canal	1.00	8.52
	Pipe	0.50	4.26
Thistle	Pipe	0.80	6.75
Tri-City	Canal	5.00	42.42
	Pipe	0.50	4.26
Tri-Ex	Pipe	2.30	19.52
Vail	Canal	3.03	25.71
	Pipe	5.02	42.58
Wistaria	Canal	1.99	16.87
	Pipe	2.65	22.50
Total		99.02	840.02

achieved by reducing operational spills as a result of this mismatch of flows by storing excess supply water and then releasing this water in times of shortage demand needs.

Interceptor reservoirs enhance lateral interceptor system operations. They are typically placed at the end of the lateral interceptor canals to store intercepted flows (operational discharges) for reregulation rather than losing these flows to the drainage system. These stored flows are then later released for use in other delivery system canals as demand is required. These reservoirs would contain automated inlet and outlet structures that would enable the maintenance of the desired water flow. IID currently does not have any reservoirs in design, but anticipates constructing up to 100 reservoirs during the 75-year permit term. These reservoirs would be 1 to 10 acres in size, with a capacity ranging from about 5 to 30 AF. Construction of these reservoirs could encompass up to 1,000 acres.

In addition to reservoirs constructed and operated by IID, many farmers in the Imperial Valley likely will construct small regulating reservoirs to facilitate the conservation of water. These 1 to 2-acre reservoirs would be constructed at the upper end of agricultural fields and are used to better regulate irrigation water applied to fields and to settle suspended solids prior to introduction into drip irrigation systems. These reservoirs would contain water only during irrigation operations and would remain dry during the remainder of the year. IID anticipates that these reservoirs could be used on up to 50 percent of the agricultural land in its service area. A single reservoir services about 80 acres of land. Up to about 5,900 acres of agricultural land could be converted to regulating reservoirs. This acreage is in addition to the 640 acres of agricultural land that could be converted to reservoirs in association with installation of lateral interceptors.

Seepage Recovery Systems

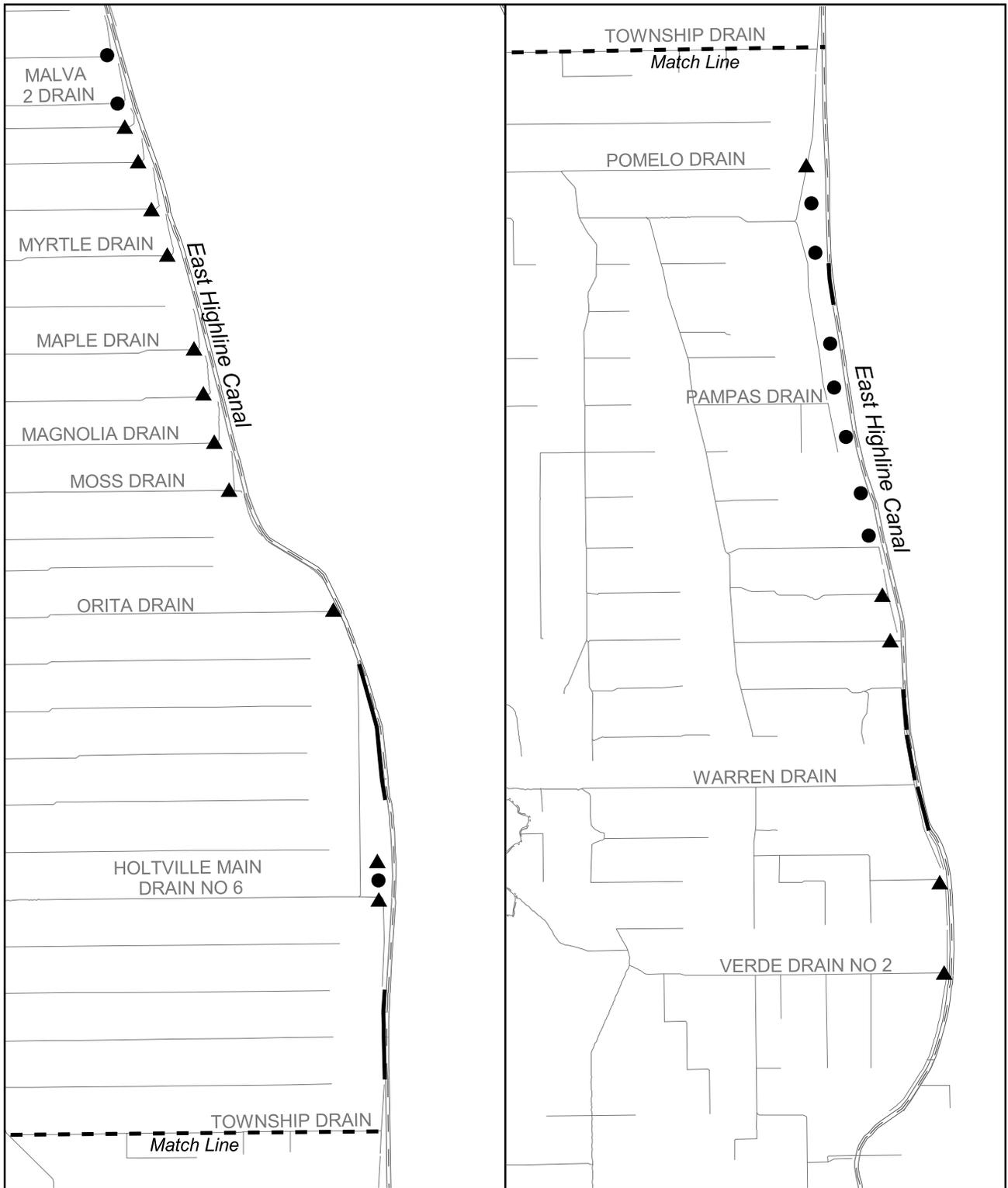
To conserve water, IID could install seepage recovery systems adjacent to the East Highline Canal. Existing and proposed locations of seepage recovery systems are shown in Figure 1.7-6. Surface and subsurface recovery systems conserve water by collecting canal leakage in sumps along a canal and pumping the water back into the same canal (Figure 1.7-7).

In a surface drain recovery system, seepage is captured and conveyed through open channels to a concrete sump. From there, it is pumped back into the canal. Construction required to install a surface recovery system is minimal. For a surface recovery system, a small check structure would be constructed in the existing parallel drain to pond water to a depth of about 3 feet. A pump station would return water to the East Highline Canal. These systems are proposed where there is an existing drain that collects seepage and directs the water to the drainage system.

In a subsurface recovery system, canal seepage flows are collected in a perforated pipe that then directs the water to a concrete sump. From there it is pumped back into a canal (Figure 1.7-7). Subsurface systems are proposed in areas lacking an existing parallel open drain. To install these systems, a trench is excavated and a pipe is laid in place. The pipeline outlets to a collection well consisting of an 8-foot-diameter vertical pipe from which the water is pumped back to the delivery canal. Construction disturbs an area about 70 feet wide along the pipeline. Table 1.7-4 shows the area that would be affected by construction of subsurface recovery systems. Following completion of the system, a right-of-way of about 70 feet along the pipeline is maintained free of deep-rooted vegetation.

1.7.3 Operation and Maintenance Activities

The primary purpose of this HCP is to provide the FESA and CESA compliance and incidental take authorization required to implement IID's water conservation obligations under the IID/SDCWA Transfer Agreement and the QSA. The water conservation programs will be an integral part of IID's ongoing operation. To implement the conservation program on a long-term basis, IID needs certainty regarding its ability to operate and maintain its irrigation and drainage system. For this reason, the covered activities include the range of IID's normal activities as well as water conservation-related activities. IID's normal activities consist of O&M activities associated with the diversion, measurement, conveyance, and delivery of Colorado River water to customers within the IID service area and the collection, removal, measurement, and transport of drainage waters to the Salton Sea. These activities are described below.



- PROPOSED SUBSURFACE SEEPAGE RECOVERY SYSTEM
- ▲ PROPOSED SURFACE DRAIN RECOVERY SYSTEM
- ⚡ EXISTING SEEPAGE RECOVERY SYSTEM
- DRAINS
- AQUEDUCT/CANAL



Source:
University of Redlands, 1999; DOI, 1999;
US Filter, 2000

1 0 1 Miles

SCALE IS APPROXIMATE

Figure 1.7-6
Existing and Proposed Seepage
Recovery Systems in the IID Water
Service Area
IID Water Conservation and
Transfer Project Draft HCP

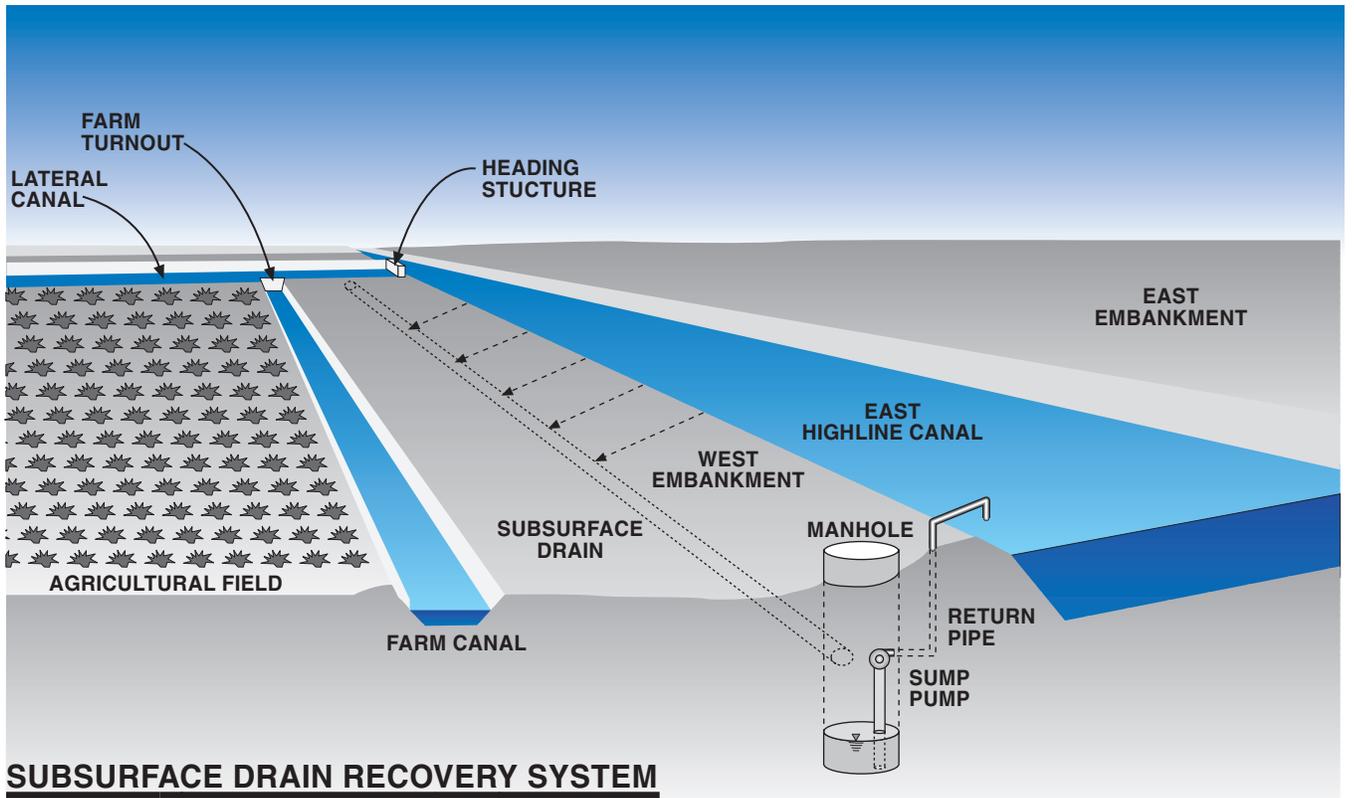
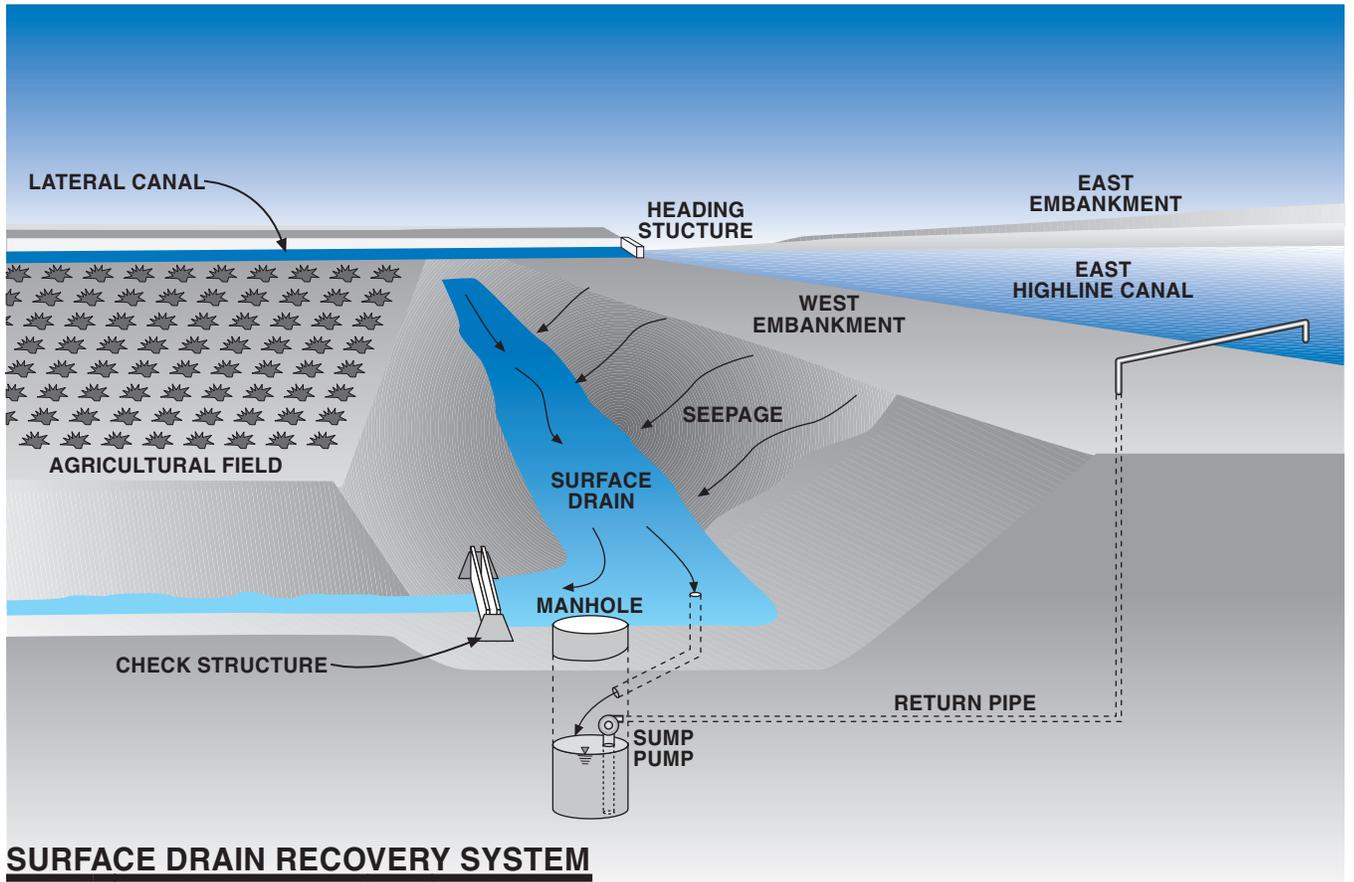


Figure 1.7-7
 Conceptual Seepage Recovery Systems
 IID Water Conservation and Transfer Project Draft HCP

TABLE 1.7-4
Proposed Seepage Collectors and Acreage Potentially Affected by Construction

Seepage Collector	Type	Length (miles)	Acreage Affected
EHL 14	Surface	0.19	<0.1
Holtville No.3	Surface	0.59	<0.1
Holtville No.6	Surface	0.51	<0.1
Holtville Main	Surface	0.55	<0.1
Magnolia	Surface	0.42	<0.1
Malva	Surface	0.19	<0.1
Maple	Surface	0.35	<0.1
Mesquite	Surface	0.42	<0.1
Moss	Surface	0.42	<0.1
Mulberry	Surface	0.26	<0.1
Munyon	Surface	0.42	<0.1
Myrtle	Surface	0.37	<0.1
Orita	Surface	0.42	<0.1
Oxalis Lateral	Surface	1.19	<0.1
Verde No.2 & 2-D	Surface	1.58	<0.1
Warren No.2	Surface	0.44	<0.1
Total Open Systems		8.3	<1.6
EHL 16 Lateral	Subsurface	0.48	4.1
Malva 2	Subsurface	0.48	4.1
Mayflower	Subsurface	0.48	4.1
Orchid	Subsurface	0.48	4.1
Palm	Subsurface	0.48	4.1
Pampas	Subsurface	0.48	4.1
Peach	Subsurface	0.48	4.1
Plum	Subsurface	0.48	4.1
Pomelo	Subsurface	0.48	4.1
Rositas Canal	Subsurface	0.48	4.1
Total Subsurface Systems		4.8	41.0
Total All Systems		13.2	42.6

1.7.3.1 Conveyance System Operation

Covered activities associated with the operation of the conveyance system encompass the following:

- Conveyance, measurement, and delivery of water through the entire AAC system beginning where water is diverted at Imperial Dam on the LCR to the Westside Main Canal turnout, located at the southwestern corner of the Imperial Valley
- Conveyance, measurement, and delivery of water to customers through the main and lateral canal system within the IID service area
- Canal operational activities involving the filling, draining, and movement of water through the canal system to accommodate maintenance and customer needs

IID delivers Colorado River water to lands within the Imperial Valley for agricultural, domestic, industrial, and other beneficial uses. Water is diverted from the Colorado River at Imperial Dam and is conveyed by gravity flow to Imperial Valley via the 82-mile-long AAC (Figure 1.7-1). The Coachella Canal branches off from the AAC about 37 miles west of Imperial Dam. The O&M activities associated with the Coachella Canal, which is operated by CVWD, are not covered by this HCP.

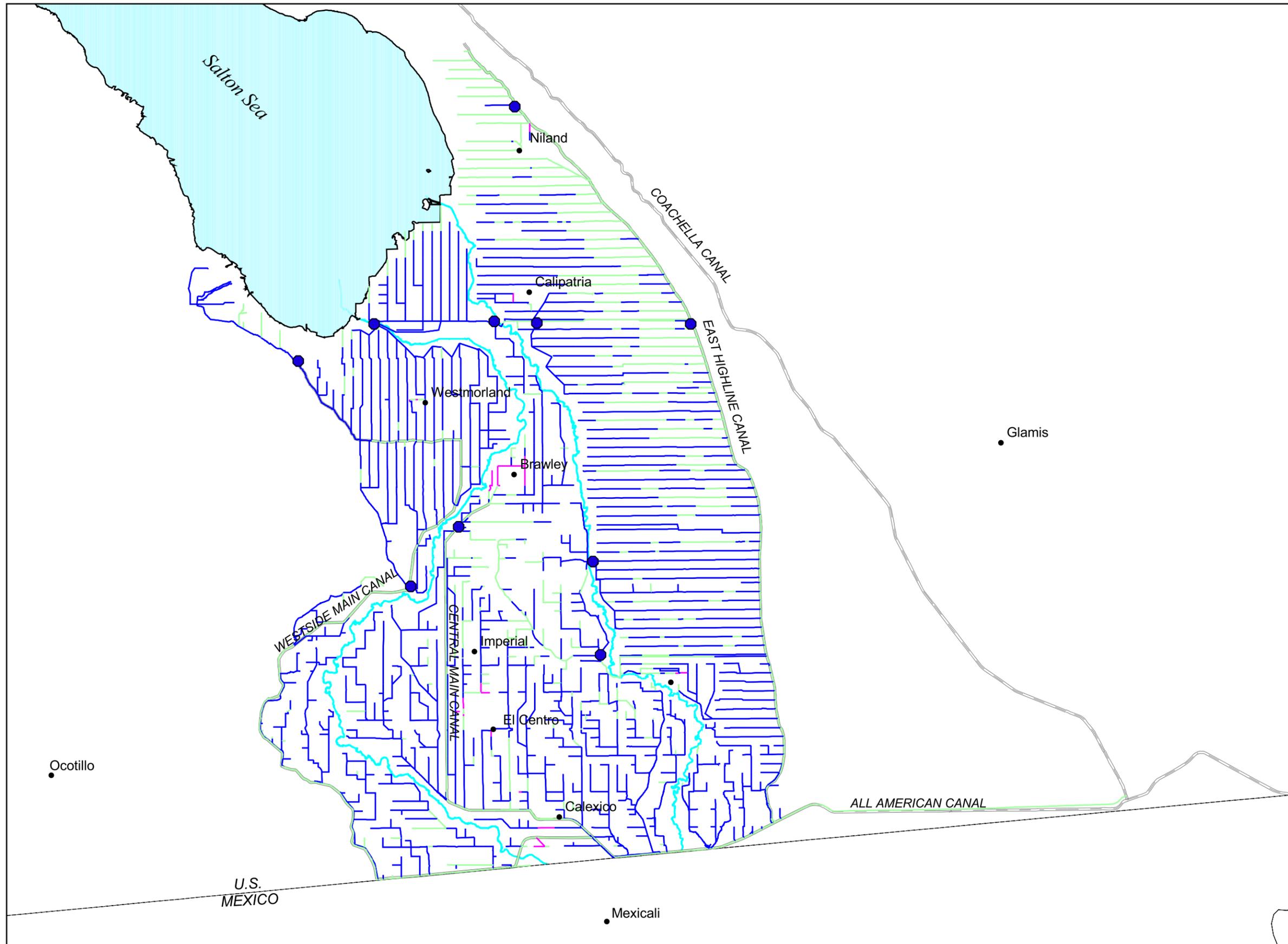
Three primary main canals (i.e., East Highline, Central Main, and Westside Main) branch off the AAC as it moves across the southern portion of the Imperial Valley. These main canals are owned and operated by IID and supply water to numerous lateral canals located throughout the irrigated service area of IID. The lateral canals carry water from the main canals to farm fields; turnouts are used on the canals and laterals to deliver water to individual farm fields. Canal segments may be dewatered between irrigation deliveries for maintenance purposes or to reduce moss and algal growth, which interferes with water deliveries.

In total, IID operates and maintains 1,667 miles of canals to deliver water to irrigated farmland in the Imperial Valley. Of the 1,667 miles of canals, 1,114 miles are concrete-lined, about 537 miles are unlined earthen canals, and the remaining 16 miles of the conveyance system are pipelined (cited from IID's Memorandum dated October 4, 2000) (Figure 1.7-8). IID currently does not anticipate constructing any new canals. However, occasionally a portion of a canal needs to be rerouted. On average, 0.25 miles of canal may be rerouted annually. Construction required to reroute a canal is the same as that required to install a lateral interceptor canal. Thus, about 2 acres could be disturbed each year to reroute canals for a total of 150 acres over the term of the permit.

1.7.3.2 Drainage System Operation

Covered activities associated with the operation of the drainage system include collection, conveyance, measurement, and discharge of drainage water through IID's main and lateral drain system to the rivers and the Salton Sea; and drain operational activities associated with the filling, draining, and movement of drain water through the main and lateral drain system to accommodate maintenance and customer needs.

IID is obliged, as stated in its rules and regulations covering drainage, to provide a drain outlet for every 160 acres of farmland within its service area. To do so, IID operates a



- IID DELIVERY CANAL LINING TYPE**
- CONCRETE
 - EARTH
 - PIPED
- MAIN SUPPLY CANALS**
- MAIN SUPPLY CANALS
 - RIVER
 - RESERVOIRS
 - CITIES

Source:
University of Redlands, 1999; DOI, 1999;
and USBR LCR GIS

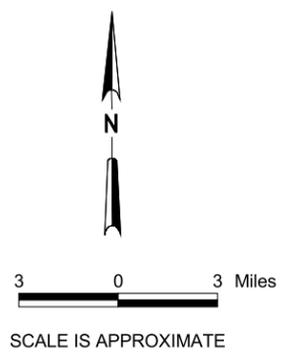


Figure 1.7-8
IID Conveyance System
IID Water Conservation and
Transfer Project Draft HCP

complex drainage system within its service area consisting of 1,456 miles (cited from IID's Memorandum dated October 4, 2000) of open and closed (pipeline) drains and associated features, surface and subsurface drainage pumps, subsurface drains and associated collection pipelines, and water recovery systems. The IID drainage system is shown in Figure 1.7-8. Like the canal system, the drain system is composed of main and lateral drains.

Periodically, IID reroutes and constructs new drains. On average, about 2 miles of drains are rerouted or constructed within a 10-year period. Construction of a new drain entails trenching to a depth of about 7 feet and creating the roadways adjacent to the drain. The new drain and associated roadways fill the right-of-way for the drain. The right-of-way on lateral drains is 80 feet and on main drains is 120 feet. Drains to be rerouted or constructed primarily would be lateral drains. Construction of 2 miles of lateral drains would result in ground disturbance encompassing about 10 acres over a 10-year period. If the newly constructed drains were main drains, about 15 acres would be disturbed over a 10-year period. From 75 to 112 acres could be disturbed over the 75 year permit term.

On-farm irrigation water that percolates through the soil is collected by subsurface tile drains and, to a lesser extent, by surface drains. The open drains (mostly the lateral drains) collect tailwater and tilewater from area farms as well as operational discharge water emanating from IID's delivery system. Tailwater is irrigation water that runs off the lower end of the fields and is discharged into the drains. Tilewater is subsurface drainage water generated primarily through leaching operations performed by farmers. Currently, more than 35,000 miles of subsurface drainage tile have been installed by Imperial Valley farmers. Outlets for drainage tile into drains can occur at intervals as close as 660 feet, but are generally at quarter- to half-mile intervals, or tilewater is collected in sumps from which it is pumped to the nearest outlet, which is a drain, a river, or the Salton Sea. IID estimates that there are in excess of 14,000 outlets of tile drains into the IID drainage system from its customers. Most drain water discharges are into IID's surface drain system, although some discharge directly to the New or Alamo Rivers or the Salton Sea.

1.7.3.3 Maintenance Activities

Maintenance activities required for the conveyance and drainage systems include keeping existing irrigation, drainage, and related facilities in good repair and working condition, so that all parts of these facilities can fulfill the intended purpose for which they were originally designed. Minor improvements undertaken during the normal process of performing these activities also are included. Covered maintenance activities include the following activities relating to the irrigation and drainage system and associated facilities:

- Inspection activities
- Canal maintenance
- Right-of-way maintenance
- Seepage maintenance
- Structure maintenance
- Pipeline maintenance
- Reservoir maintenance
- Sediment removal from canals and drains
- Operation and maintenance of the desilting basins
- Mechanical, chemical, and biological weed control maintenance

- New and Alamo River maintenance
- Salton Sea dike maintenance
- Gravel and rock quarrying

Each of these activities is described below.

Inspection Activities

IID continuously inspects its canal and drainage system from access roads adjacent to the facilities to determine where and when maintenance is required.

Canal Maintenance

About 1,114 miles of the IID's conveyance system consist of concrete-lined channels. Concrete-lined canals, including the AAC when lined in the future, require periodic inspection and repair. The concrete-lined canals are segmented with contraction joints to resemble a series of concrete panels. The joints between the panels often are sealed with tar or another waterproof mastic. Repair consists of periodic concrete panel replacement or resealing joints. To replace concrete panels, the existing panels are removed and new concrete poured to create the panels. All activities are restricted to IID's right-of-way on the canal.

Portions of the concrete lining are replaced on an as needed basis. Thus, the frequency, magnitude, and location of this activity are highly variable. To replace or repair canal lining, the canal must be dewatered. IID attempts to dewater each canal every 2 months for about 3 days. However, on average, canals are typically dewatered every 3 to 4 months. Canal lining and repair are conducted during these periods. The amount of canal lining can vary from one or two panels covering several feet to one-half mile. IID anticipates that the concrete lining on currently lined canals will require replacement up to two times over the next 75 years.

Along the AAC, IID maintains and operates three existing seepage recovery systems. Two of these systems are located at Drop 4 and one is at Drop 3. The seepage recovery systems at Drop 4 are pumped, while the system at Drop 3 is a gravity system. About every 10 years, IID needs to clean vegetation out of these systems.

The preferred alternative for the AAC Lining Project is to construct a new canal parallel to the existing AAC from one mile west of Pilot Knob to Drop 3 (Reclamation and IID 1994). When completed, IID will operate and maintain the new canal section in the same manner as the existing canal. In the EIS/EIR for the AAC Lining Project, it was assumed that the old canal section would be retained and maintained for emergency use. The specific operation and maintenance activities required to maintain the canal for emergency use will be developed during project design. The Biological Opinion for the AAC Lining Project describes expected management of the abandoned section as follows.

“The abandoned sections of the existing canal would be managed by IID as an emergency channel in the event of damage to the parallel canal or other catastrophic event. To accomplish this, a management plan for the old canal would be prepared during the project design phase in coordination with the BLM and other agencies. The plan would include the specific action needed to maintain the abandoned sections for the specified purpose of an emergency use channel. The plan would include actions needed to keep the abandoned canal prism and

maintenance roads free of vegetation. Vegetation control may involve regular disking and the use of legally approved chemical herbicides.”

The HCP covers management of the abandoned section in a manner consistent with the management assumed in the EIS/EIR and Biological Opinion for the AAC Lining Project.

Right-of-Way Maintenance

Canals are generally constructed on a 50- to 70-foot-wide rights-of-way, while the right-of-way for drains is generally 80 to 120 feet wide, depending on whether it is a main or lateral facility. The rights-of-way for canals and drains consist of the drain or canal, roadways on both sides of the channel and the associated embankments. The right-of-way on piped sections of the conveyance and drainage systems are typically narrower, about 40 feet. Conveyance pipelines are used through developed areas and are typically covered by roads, parks, and other uses consisting of open space facilities. The rights-of-way of drainage pipelines are typically farmed.

Right-of-way maintenance involves maintaining the canal, drain, and siphons associated with the right-of-way clear of deep-rooted vegetation, debris, and trash, and maintaining the accessibility to facilities and the use of the roadways associated with the channels. This maintenance refers to that portion of the right-of-way outside the canal or drain prism; canal and drain maintenance within the prism is addressed separately. Right-of-way maintenance encompasses maintaining the roads and associated embankments in good repair and controlling vegetation. Vegetation control is described in more detail below. Debris and trash in the canals and drains are removed as needed.

The embankments of drains and canals require periodic maintenance. During sediment removal activities, silt is removed and deposited on the adjacent embankment and roadway. The embankments and associated roadways are later graded and groomed to blend the material into the embankment for the purpose of maintaining a surface that can accommodate vehicle traffic and equipment access. Grading also smoothes the embankment surface and removes rills that develop during rain storms, thus reducing the potential for erosion. IID maintains and operates five graders for maintaining embankments. The graders operate every day except when it rains and each grader can cover 3 miles per day. Thus, about 15 miles can be graded per day. Drain embankments are graded and groomed in association with drain maintenance activities that occur once every 5 years on average. The embankments of the main canals (e.g., East Highline, Westside Main, Central Main, and the AAC) are typically graded and groomed several times a year. The remaining canal embankments are graded and groomed once a year on average.

Other embankment maintenance activities include regular watering of the banks and roadways along the AAC, main and lateral canals, and drains with a water truck to minimize dust generation. Several segments of the main canals, including the AAC, are surrounded by chain link fencing. This fencing requires periodic repair and replacement and is considered part of right-of-way maintenance.

To maintain the canal and drain embankments, both within and outside the canal and drain prism, erosion problems need to be corrected. Erosion maintenance on the outside of the canal or drain occurs infrequently. Damage to the embankments from erosion is generally corrected during the embankment maintenance activities described above. Occasional intense storms can cause localized areas of erosion requiring immediate corrective actions;

these are addressed as part of the emergency response activities. Erosion maintenance activities are limited to the rights-of-way of the canals or drains.

Along the portion of the AAC that traverses the Algodones Dunes, IID annually knocks down portions of the sand dunes, creating a flatter slope that allows sand to blow across the canal. In conducting this flattening, a dozer drags an I-beam back and forth across the peaks of the dunes to level them. The area where this activity is conducted begins at the Coachella Turnout (Sta. 1907+20) and extends to about Sidewinder Road at Pilot Knob (Sta. 1243+65), a distance of 12.56 miles. The area actually disturbed is about 50 to 75 feet wide yielding a total acreage disturbed of 76 to 114 acres. This operation begins in July every year and lasts about 6 weeks. In conjunction with flattening the dunes, the roadways along the AAC are cleared of accumulated sand. After the roads are opened up, they are immediately treated with herbicides for vegetation control. IID has been conducting these activities since the construction of the AAC in about 1945.

Erosion also can occur within drains or unlined canals. The erosion results from meandering channels of water from irrigation flow or drain water or stormwater runoff. Vegetation or sandbars can cause a change in water direction within a canal or drain and an associated erosion problem if not corrected by removal. Regular drain and canal maintenance activities (i.e., sediment removal and vegetation control) minimize the occurrence of erosion problems, and most erosion problems are corrected during regular maintenance. However, storm waters can result in embankment damage or loss that may necessitate the hauling and placement of fill material. This condition is addressed as part of the emergency response activities.

Right-of-way maintenance also consists of activities required for the maintenance and operation of power transmission facilities within the HCP area. These activities include regular inspection of facilities, clearing the power line rights-of-way, and repairing and replacing equipment as necessary. The power system within the HCP area is composed of nearly 3,000 miles of distribution and transmission lines and about 50 substations. The transmission and distribution lines exist in canal and drain rights-of-way and right-of-way maintenance for the drains and canals covers right-of-way maintenance for the transmission lines.

Additional transmission lines could be developed as a result of efforts to implement water conservation measures. For example, tailwater pumpback facilities constructed by individual farmers could encourage the extension of power transmission lines to operate the pumps. Currently, tailwater pumps typically are operated by diesel engines. IID anticipates that the relatively high cost associated with extending transmission lines will continue to discourage this practice in the Imperial Valley and that the installation of transmission lines to serve pumpback facilities will be infrequent. Further, any extension of transmission lines likely will occur in farmland along existing canal or drain rights-of-way.

Seepage Maintenance

Gophers or vegetation can cause leaks in the canal banks, although this occurs infrequently. Leaks also can be caused by earthquakes or seal breakage on a canal from cleaning. Activities to correct seepage problems are similar in each case. The embankment is cored, clay is mixed with the existing material, and the mixture is re-compacted. Seepage maintenance activities are focused on unlined canals and limited to the canal's right-of-way.

On average, seepage maintenance activities are conducted on 5 to 10 miles of canal a year. Over the term of the permit, seepage maintenance activities could be conducted on all of the unlined canals (537 miles) at least once.

Structure Maintenance

In addition to the canals, about 20,000 structures within the canals and drains are required to convey water throughout the IID service area. These structures include, but are not limited to, delivery gates, checks, headings, turnouts, moss pipes, weep pipes, drainage sumps, irrigation pumps, numerous types of bridges, lifting devices, and flow measurement devices. O&M activities required for these structures include inspection, adjustments, and periodic or emergency repairs and replacement. IID estimates that about 200 structures need to be replaced each year, but historically fewer structures have been replaced. In the future, 300 structures could require replacement each year as the infrastructure ages. Activities associated with the repair and replacement of structures are conducted within the rights-of-way. Ground disturbance to replace structures on laterals is generally limited to a 75-by-75-foot area. On main canals, any ground disturbance generally occurs within a 150-by-150-foot area. If all of the structures are replaced during the term of the permit up to 2,970 acres could be temporarily disturbed.

There are 25 sites in and around cities and towns in the Imperial Valley that currently have trash screens on irrigation and drainage channel facilities. The screens typically exist at road siphons and pipeline entrances. The purpose of the screens is primarily for safety, but they also result in an accumulation of trash. These trash screens require frequent cleaning of debris to prevent water backup and inundation of tile lines in drains and possible minor flooding on adjacent properties where canals are involved.

Pipeline Maintenance

Portions of the conveyance (Figure 1.7-8) and drainage systems are contained in pipelines. Maintenance activities consist of maintaining the pipeline right-of-way and around the manholes that provide access to the pipelines clear of deep-rooted vegetation. Vegetation also is maintained at a height that allows visual access. Drain pipelines primarily occur in farm fields while conveyance system pipelines occur through developed areas. Thus, little vegetation control is necessary. In addition, the pipelines are periodically inspected, repaired, and replaced as necessary. Any activities are generally limited to the 40-foot-wide right-of-way of the pipeline. It is anticipated that all pipelines will be replaced once during the 75-year permit term.

Reservoir Maintenance

The IID conveyance system contains 10 regulating reservoirs (Figure 1.7-8). Regulating reservoirs capture spills from a water delivery/conveyance facility and are used to match delivery flows with demand flows. The same types of maintenance activities required for canals are conducted at reservoirs. Vegetation is controlled around the reservoir using chemical methods. Infrequently riprap needs to be replaced or amended to maintain the structural integrity of the embankments. Also, the concrete lining of the reservoirs occasionally but infrequently requires repair or replacement. The reservoir embankments are graded, groomed, and stabilized, as necessary in the same manner as described under Right-of-Way Maintenance. Embankment maintenance along reservoirs occurs about once every 5 years. On very rare occasions (e.g., once every 25 years), a reservoir may be drained and the sediment removed. Sediment from the reservoir is deposited and graded along

canals. Chain link fencing surrounds the reservoirs and requires periodic repair and replacement. Automated reservoirs with control houses require frequent visitation by maintenance personnel to ensure proper operation.

Sediment Removal from Canals and Drains

The greatest single maintenance expense for IID is the removal of sediment from its canal and drainage systems, with the drainage system receiving the most attention. This is a mechanical process that requires the use of hydraulic excavators or small backhoes to remove the material. Dredged spoil is deposited along the side of the canal or drain, where it is allowed to dry before being groomed into the embankment by a dozer or grader. Drains are cleaned on an as-needed basis, depending on the extent of vegetative growth or sediment accumulation. Drains with the flattest bottom slope accumulate sediment most rapidly, and may require cleaning annually. Other drain segments may not require cleaning for periods of 10 years or more. On average, IID cleans approximately 300 miles of drains annually, but the amount varies from year to year. The drain embankments and road surface along the drain are re-contoured, graded, and groomed in association with drain cleaning or in emergency situations (e.g., bank sloughing during a storm) as described under Right-of-Way Maintenance.

Operation and Maintenance of the Desilting Basins

Colorado River water diverted at Imperial Dam immediately passes into one of three desilting basins used to remove silt and to clarify the water. Each of the desilting basins is 540 feet wide by 770 feet long and is equipped with 72 scrapers designed to remove 70,000 tons of silt per day. Silt removed at the facility is returned to the Colorado River downstream of Imperial Dam. Periodic maintenance of desilting basins requires dewatering of individual basins to performed repairs and routine maintenance.

Weed Control Maintenance

As noted above, maintenance of the canals, drains and various structures typically involves vegetation control. IID uses mechanical, chemical, and biological methods to control vegetation. To a lesser extent, IID occasionally uses controlled burning as a means to improve visibility of the drain channel during drain maintenance, improve the performance of herbicides, and to remove accumulations of dried plant material that impede the flow of water through the drain. These methods and their application to IID's facilities are described below.

Mechanical methods of vegetation control are used in canals. Canals accumulate moss and algae that must be removed periodically because it impedes water flow within the channel and at structures. In concrete-lined canal sections, moss carts and chains are pulled along the canal to remove algae and moss that develop on the bottom and sides of the canal. A backhoe follows and removes the vegetation collected by the moss cart. Moss carts are used for concrete-lined laterals while chaining is used to clear moss and algae from main canals and unlined lateral canals. If very thick moss and algae has developed in unlined canals, disking may be necessary to remove the vegetation. Use of a moss cart requires dewatering the canal. Thus, vegetation removal with a moss cart occurs in conjunction with the regular dewatering for most canals. Chaining does not require dewatering. Vegetation is removed from all canals at least once a year. However, about 10 to 15 percent of the canals accumulate large amounts of moss and algae and require cleaning as frequently as every two weeks.

Mechanical and chemical methods are used to control vegetation in the drain and canal rights-of-way and around IID's other facilities such as hydroelectric facilities, drop structures on the New and Alamo rivers. Chaining, discoing, and side scraping (moss cart) are used to control vegetation on embankments and around other facilities. An excavator is used to remove vegetation from the drains. Vegetation removal in the drains occurs in association with sediment removal activities described above. In removing vegetation from the drains, an excavator is operated from the top of the bank where it is used to scrape vegetation from the side and bottom of the channel. Along drains, extensive vegetation can develop on top of the drain banks and access roads, requiring a bulldozer to grade and gain access to the drain prior to maintenance.

Biological control methods are used for aquatic weeds, such as hydrilla, sago pondweed, and Eurasian watermilfoil. Grass carp feed on these plants and triploid sterile grass carp are raised at IID hatchery facilities and stocked in the canals for the purpose of controlling aquatic vegetation. The use of grass carp reduces the frequency of the other control methods. Fish hatchery O&M activities are described in Section 1.7.4.1, Fish Hatchery Operations and Maintenance.

Chemical methods also are used to control vegetation in the drains, canals, and on the drain and canal banks. Take of covered species from changes in the amount or composition of vegetation resulting from herbicide use is covered by this HCP, but any take of covered species resulting from toxicological effects of herbicide use is not covered by this HCP. Chemical control methods are carried out by third parties under contract with the District and by its own staff. On a monthly basis, the District's Pest Control Advisor instructs the contractor on where to conduct control activities and advises on the chemicals to use. Within the general area identified by the District's Pest Control Advisor, the applicator has the discretion to decide where to work, which is generally influenced by the extent of weed growth and local wind conditions.

The chemicals currently used to control vegetation are Roundup®, Direx®, and Rodeo®. Rodeo® is applied where contact with water may occur; Direx® is used for woody plants, particularly salt cedar. Direx® is not used in applications where contact with water could occur. Chemical control of vegetation on the banks of the canal is supplemented with mechanical removal, as necessary. Vegetation is sprayed during March through August, and occasionally into September. All herbicide applications are carried out under a permit from the Imperial County Agricultural Commissioner and are subject to its conditions. The chemicals are applied in accordance with label instructions. About 565 miles of outer drain embankments are sprayed with a mixture of Roundup® and Direx® a year. About 1,430 miles of the outside banks of canals and drains are treated with Roundup® a year and about 980 miles of canals and drains are treated with Rodeo®. Rodeo® is the only chemical control used on drains and canals on the state and federal refuges.

In addition to the weed control measures described, IID occasionally uses controlled burning as a method for controlling unwanted vegetation in the drains. Drain burning, which has been used on a limited basis by IID since the turn of the century, is performed to improve visibility of the drain channel, improve the effectiveness of herbicides, and to remove accumulations of plant material from the drains. IID obtains an annual burn permit from the Agricultural Commissioner and only burns on designated burn days.

During the mechanical removal of sediment, it is necessary for excavator operators to have visual contact with the bottom of the drain. Visual contact allows the operator to avoid excavations that remove too little or too much material from the drain. Under excavations (removal of too little sediment) are corrected by conducting an additional sweep of the excavator arm and removing more material from the site. This results in a duplication of effort and contributes to inefficient use of labor and equipment time. Over excavations (removal of too much sediment) result in a series of deep and shallow areas within the flow path of the drain. These undulations in the channel create disruptions in the flow that create or accelerate erosion processes within the channel. The uneven channel bed and disrupted flow encourages the channel to meander, which contributes to drain bank erosion. In addition, poor visibility increases the potential for the operator to inadvertently pull material directly from the banks. This results in a long-term instability of the channel and can cause erosion and bank failure problems that can take years to correct in some drains.

Controlled burning in the drains also is used to improve the effectiveness of herbicide applications. Tall, old, and established vegetation requires a heavier single application of herbicide or a greater number of lighter applications than young vegetation to achieve the desired level of control. Controlled burning in the drain removes decadent vegetation and encourages sprouting and regrowth. Herbicides applied on the young growth are assimilated into the plant more effectively and provide better control at lower application rates.

In addition to improving visibility and increasing the performance of herbicides, IID uses controlled burning in certain circumstances to remove accumulations of dried plant material that impede the flow of drain water. This practice occurs primarily in dense stands of *Phragmites* where plants on the drain bank collapse and accumulate in the channel.

IID uses controlled burning as a drain vegetation control practice on a limited basis and only under conditions where alternative techniques are not as effective. Currently, IID uses controlled burning on approximately 0.5 to 1.0 miles of drains per year (up to 75 miles over the term of the permit).

New and Alamo River Maintenance

In addition to the constructed drain system, the New and Alamo Rivers carry drain water to the Salton Sea. The District has no legal authority to regulate activities in these rivers. To control erosion of the river, the District constructed and maintains 20 drop structures on the rivers most of which are on the Alamo River. Maintenance activities for the drop structures consist of weed control on the banks around the structures. Mechanical and chemical control methods are used to treat about 0.5 acres every year (0.25 acre on each bank), affecting 10 acres a year. IID also conducts bank protection measures as necessary along the rivers. Bank protection activities focus on specific bank failures or areas of erosion. Typically an area about 100 feet wide and 500 feet long (i.e., about 1 acre) is disturbed in conducting bank protection activities.

IID periodically dredges the New and Alamo River channels from the United States Geological Survey gaging stations on each river to the rivers' outlets at the Salton Sea. Six to eight feet of dredge material typically are removed from the river channel during this operation. The dredge spoils are pushed into deeper water in the Salton Sea creating a submerged river channel. Through this process, the channels of the New and Alamo Rivers have been extended about 1.75 and 2.5 miles into the Salton Sea, respectively. By moving the

spoils into increasingly deeper water in the Salton Sea, the rate at which the channel fills with sediment and requires dredging is reduced. IID retains the vegetation on the riverbanks to minimize erosion; however, it is necessary to lay the vegetation (mostly *Phragmites*) over on the banks with the dredging equipment in order to gain access. Dredging of the rivers' mouths occurs about once every four years. More frequently, areas around the gaging stations on the rivers are dredged. The area dredged extends from about 200 feet upstream of the gage to about 500 feet downstream of the gage. This dredging occurs about every two years on the New River and annually on the Alamo River. This dredging is currently conducted in the late summer or fall to avoid impacts to Yuma clapper rails.

Salton Sea Dike Maintenance

IID maintains about 20 miles of dikes along portions of the southern end of the Salton Sea to prevent inundation of lands as the Salton Sea rises. Most of the maintenance required for the dikes consists of pulling riprap that has shifted down back into place on the dike bank. This activity is conducted along the dikes at least once a year and sometimes three or four times a year in certain locations. Other maintenance activities include repairing sections damaged in storms, filling in and replacing riprap, and grading and grooming the embankments and road surfaces on the embankments. These activities are either conducted from the road surface along the dike or from the water immediately adjacent to the dike.

Gravel and Rock Quarrying

IID owns and operates two small rock and gravel mining operations to support its maintenance activities. The two quarries, Red Hill and Pumice Island, are located on the south shore of the Salton Sea. The quarries are barren and do not support vegetation. Each quarry occupies approximately 160 acres and was acquired by IID in the late 1930s from the Southern Pacific Railroad Company. They have been operated as quarries since that time. IID quarries rock and gravel from these areas on an as-needed basis for riprap and road construction and surfacing throughout IID's service area as part of maintenance and for emergency repairs.

1.7.4 Miscellaneous IID Activities

IID also conducts activities that do not fall within the categories previously described. These activities include the following:

- Fish hatchery O&M
- Recreational facilities
- Use of IID land
- Hydroelectric power generation facilities
- Emergency response activities
- HCP and project EIR/EIS mitigation measures

1.7.4.1 Fish Hatchery Operations and Maintenance

As described earlier, grass carp are stocked in the canal and drain systems to control aquatic weeds. The District operates a hatchery in El Centro and grow-out facilities in Niland to produce grass carp. On average the hatchery produces 20,000 stockable grass carp per year. As of January 1998, more than 200,000 fish had been stocked into the canal system. The District's goal is to stock 20,000 to 25,000 fish a year.

The hatchery operates under a Memorandum of Understanding (MOU) with the California Department of Fish and Game (CDFG). Under this MOU, the hatchery must meet specific requirements, including maintaining a security chain linked fence around the facilities, maintaining high/low water level alarms, and maintaining bird netting over the ponds and filtering of discharge water to minimize the potential for fish to escape. The MOU also prohibits stocking of grass carp in drains that support desert pupfish because of the potential for introducing parasites or diseases, direct competition, and interference behavior.

O&M activities include cleaning and disinfecting the ponds and pipelines, controlling weed growth around the ponds, flushing the ponds and pipelines, spawning the fish, transporting fry to grow-out ponds, and rearing and stocking the fish. Sterile triploid grass carp are produced for release to prevent establishment of a breeding population in the canals. Before release, every fish produced is given a blood test to confirm that it is triploid, and therefore sterile. Diploid grass carp, which are fertile, are destroyed after spawning.

1.7.4.2 Recreational Facilities

Five of the 10 regulating reservoirs and the canal system within IID's service area are open to recreational use. Fishing and bird watching are the primary recreational uses supported by the reservoirs. IID does not conduct any activities specifically to support recreation at the reservoirs and canals.

The District owns and maintains recreational facilities at Fig Lagoon, an approximately 80-acre pond created by IID. Maintenance activities at Fig Lagoon include dredging at the mouth of the drain inlet to the lagoon from Fig Drain. About every 60 days an area 30 feet wide, 4 feet deep and 600 feet long is dredged to maintain water flow from Fig Drain into the lagoon. Developed facilities at Fig Lagoon currently consist of several picnic tables, an information kiosk, and a latrine. The area is used for fishing, bird watching, and picnicking.

In addition to Fig Lagoon, IID owns and operates three recreational vehicle (RV) parks at Salton Sea Beach, Corvina Beach, and Bombay Beach. IID dredges at these RV parks about every 60 days to maintain boat access to the Salton Sea. IID also conducts dredging at the Red Hill Marina on request although the District does not own the marina. IID dredges at Red Hill Marina about every other year.

No additional recreational facilities are planned at this time, but could be pursued by IID during the permit term. Any additional recreational facilities developed by IID and covered by this HCP would be restricted to features developed to support fishing, wildlife viewing, picnicking, walking/jogging, bicycling and related activities at IID facilities. New recreational facilities covered by this HCP would consist of small scale features such as:

- Picnic tables
- Bike paths
- Walking/jogging paths
- Restrooms
- Information kiosks

Recreational facilities would be associated with IID's water conveyance and drainage facilities and would be located within the rights-of-way of these facilities. Construction of

recreational facilities is a covered activity under this HCP, but take that could result from use of the facilities by third parties is not covered.

1.7.4.3 Use of IID Land by Lessees

The IID currently owns approximately 118,000 acres of land within the HCP/Salton Sea area. Approximately 6,600 acres are located in the irrigated portion of the service area and are not contiguous to the Salton Sea. The Salton Sea currently inundates about 105,000 acres and another 6,100 acres are contiguous to and surround the Salton Sea. IID leases its farmable lands to farmers engaged in the production of agricultural products and to federal and state wildlife agencies for wildlife management. IID seeks coverage under this HCP for whatever incidental take may be attributed to it as the lessor of the land. IID is not seeking coverage for activities conducted by lessees on IID land, except those activities directly related to the water conservation program described elsewhere in this HCP.

The acreages of land leased for these uses are shown in Table 1.7-5.

1.7.4.4 Use of IID Land by IID

For the term of the permit, IID may convert land that it owns to a new use. Except for land currently leased to the USFWS for management as wildlife habitat, any incidental take of covered species resulting from changed land uses or land management activities will be covered as long as the new use is a covered activity. Land uses that constitute covered activities are:

- Installation and implementation of water conservation measures, including fallowing
- Installation and operation of conveyance and drainage facilities
- Creation and management of fish or wildlife habitat
- Construction and operation of a fish hatchery
- Implementation of any other environmental mitigation associated with the IID Water Conservation and Transfer project, this HCP, or the QSA

Incidental take of covered species that could result if IID land that is currently leased to the USFWS for management as wildlife habitat is converted to another land use is not covered by this HCP.

1.7.4.5 Hydroelectric Power Generation Facilities

IID operates eight hydroelectric generation facilities on the canal system. Six of these facilities are located on the AAC, one on the Westside Main Canal, and one on the East Highline Canal (Figure 1.7-1). These hydroelectric generation facilities are situated on the

TABLE 1.7-5

Types of Leases and Approximate Acreages of Lands Leased by IID to Third Parties in the HCP Area

Type of Lease	Approximate Acreage
Agricultural	1,167
Recreational areas/facilities	7,278
Duck club	371
Wildlife management	4,857
Geothermal ^a	29,325
Archeological excavation	100
Telecommunication facilities	8 facilities
Other (e.g., storage sites, plants, dumps)	1,347

^a Subsurface lease

canals and occupy a relatively small area. Maintenance activities include vegetation control on the facility grounds, removing debris from the trash racks upstream of the facilities, and occasional stabilization of the canal banks immediately downstream of the facilities.

1.7.4.6 Emergency Response

Emergency activities are actions that IID must take immediately and unpredictably to repair or prevent damage to its facilities in order to prevent property damage or protect human health and safety. Emergencies are situations under which IID cannot follow the normal procedures detailed under each of the conservation strategies (Chapter 3) to correct or prevent damage to property or risk to human health or safety. Emergency activities are most frequently required to respond to storm events or natural disaster (e.g., earthquakes) that result in damage to IID facilities (e.g., canal wash out, plugged siphon) and interrupt the distribution or collection of water. Actions required by IID in emergency situations will vary depending on the specific circumstances but typically include removing debris, hauling fill material, removing sediment, moving large amounts of earth, dewatering a canal section, repairing embankments, replacing/repairing damaged structures, and replacing rip rap.

1.7.4.7 HCP and Environmental Mitigation Measures

Any incidental take of covered species that results from activities associated with the implementation of the mitigation measures and monitoring program associated with the HCP, the EIR/EIS for the IID Water Conservation and Transfer project, the Program EIR for the QSA, and any other environmental assessment related to the covered activities are covered under this HCP. These covered activities include management of habitat that is restored, created or acquired in implementing the HCP as well as monitoring activities as described in Chapter 3: Habitat Conservation Plan Components and Effects on Covered Species and Chapter 4: Monitoring and Adaptive Management. Mitigation, management and monitoring activities implemented by qualified third parties on behalf of IID for these purposes also are covered.

1.8 Regulatory Context

1.8.1 Federal Endangered Species Act

The FESA, as amended, is administered by the Secretaries of the Interior and Commerce through the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service¹ (NMFS), respectively. Species listed as endangered or threatened under the FESA are provided protection from federal actions that would jeopardize the species' continued existence or destroy or adversely modify critical habitat for the species.

Under Section 4 of the FESA, the USFWS must designate critical habitat for federally listed species, concurrent with listing that species, to the maximum extent prudent and determinable. The FESA requires designation of critical habitat for listed species to be based on those physical or biological features that are essential for the conservation of the species and according to the best scientific and commercial data available. As defined in the FESA, conservation means the use of all methods and procedures that are necessary to bring any listed species to the point at which the measures provided pursuant to the FESA are no

¹ No species under the jurisdiction of NMFS are covered by this HCP.

longer needed. Critical habitat is protected under Section 7 of the FESA with regard to actions carried out, authorized, or funded by a federal agency. Federal agencies must ensure that their actions are not likely to result in the destruction or adverse modification of critical habitat.

Section 9 of the FESA and accompanying federal regulations prohibit the taking of fish and wildlife species listed as threatened or endangered by nonfederal agencies and private companies and individuals. As defined in the FESA, taking means “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or to attempt to engage in such conduct.” By regulation, the USFWS has defined harm as an act, “which actually kills or injures,” listed wildlife; harm may include “significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering.”

Section 9 of the FESA also offers limited protection for federally listed plants. Under Section 9, it is unlawful for any person, “subject to the jurisdiction of the United States,” to “remove and reduce to possession, . . . maliciously damage . . . or destroy,” any such plant species from areas under federal jurisdiction (such as national forests and park lands). It also is unlawful under Section 9 for any such person to “remove, cut, dig up, or damage or destroy any such species” on any other area “in knowing violation of any law or regulation of any State or in the course of any violation of a State criminal trespass law.” Under Section 9 of the FESA, therefore, plants are protected from these types of takings on private lands to the extent these species are protected under state law.

In recognition that take cannot always be avoided, Section 10(a) of the FESA includes provisions that allow for takings by nonfederal entities that are incidental to, but not the purpose of, otherwise lawful activities. Similar provisions are found in Section 7 for actions by federal agencies. Under Section 10(a), the USFWS is authorized to issue ITPs. Applicants for such permits must submit habitat conservation plans that specify the following:

- Impact(s) that will likely result from the taking
- Measures the applicant will take to minimize and mitigate the impacts
- Source of funding available to implement the measures
- Alternatives to the taking and the reason the alternatives were not chosen
- Any other measures considered by the Secretary of the Interior (i.e., USFWS) as necessary or appropriate for minimizing or mitigating the impacts of the taking

Upon review of a completed application and HCP, the USFWS must find all of the following before an ITP can be issued:

- Taking will be incidental to an otherwise lawful activity.
- Applicant will, to the maximum extent practicable, minimize and mitigate the impacts of the taking.
- Applicant will ensure that adequate funding for the conservation plan and procedures to deal with unforeseen circumstances will be provided.
- Taking will not appreciably reduce the likelihood of the survival and recovery of the species in the wild.

- Applicant will ensure that other measures (if any) required by the approving agency will be met.
- Approving agency is assured that the conservation plan will be implemented.

Because issuance of an ITP is a federal action, the USFWS must comply with the consultation requirements of Section 7 of the FESA, the public review provisions of the FESA, and the environmental analysis and public review requirements of the NEPA, as amended.

Although phrased in terms of criteria for issuance of an ITP, Section 10(a)(1)(B) also was intended by Congress to authorize the USFWS to approve HCPs for unlisted as well as listed species. Moreover, if an HCP treats an unlisted species as if it were already listed, additional mitigation will not be required within the area covered by the HCP upon the listing of that species. As stated by the Conference Committee when Section 10 was added to the FESA in 1982:

“The committee intends that the Secretary [of the Interior] may utilize this provision to approve conservation plans which provide long-term commitments regarding the conservation of listed as well as unlisted species and long-term assurances to the proponent of the conservation plan that the terms of the plan will be adhered to and that further mitigation requirements will only be imposed in accordance with the terms of the plan. In the event that an unlisted species addressed in an approved conservation plan is subsequently listed pursuant to the Act, no further mitigation requirements should be imposed if the conservation plan addressed the conservation of the species and its habitat as if the species were listed pursuant to the Act (House of Representatives Conference Report No. 97-835, 97th Congress, 2d Session, p. 30).”

The No Surprises policy adopted by the U.S. Department of the Interior provides that landowners who have habitat for listed species on their property and agree to an HCP under the FESA will not be subject to later demands for more land, water or financial commitment if the HCP is adhered to, even if the needs of the species change over time (63 Fed. Reg. 8859).

1.8.2 Bald Eagle and Golden Eagle Protection Act

The Bald Eagle and Golden Eagle Protection Act (BEPA) explicitly protects the bald eagle and golden eagle and imposes its own prohibition on any taking of these species. As defined in the BEPA, take means to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, or molest or disturb. Current USFWS policy is not to refer the incidental take of bald eagles for prosecution under the Bald Eagle and Golden Eagle Protection Act (USFWS 1996). For golden eagles, the ITP would serve as a Special Purpose Permit should golden eagles become listed in the future (USFWS 1996).

1.8.3 Migratory Bird Treaty Act

The Migratory Bird Treaty Act makes it unlawful to pursue, hunt, capture, kill, or possess or attempt to do the same to any migratory bird or part, nest, or egg of such bird listed in wildlife protection treaties between the U.S. and Great Britain, United Mexican States, Japan, and the Union of Soviet States. As with the FESA, the act also authorizes the

Secretary of the Interior to issue permits for take. The procedures for securing such permits are found in Title 50 of the *Code of Federal Regulations (CFR)*, together with a list of the migratory birds covered by the act. The USFWS has determined that an ITP issued under Section 10 of the FESA also constitutes a Special Purpose Permit under *50 CFR 21.27* for migratory birds that are listed under the FESA. For unlisted migratory bird species, the ITP would serve as a Special Purpose Permit should a covered species become listed in the future. The USFWS has determined that take of listed migratory bird species allowed under an ITP will not be in violation of the Migratory Bird Treaty Act of 1918 (USFWS 1996).

1.8.4 National Environmental Policy Act

NEPA, as amended, requires the analysis and full public disclosure of the potential environmental impacts of a proposed federal action. The issuance of an ITP under Section 10(a) by the USFWS constitutes a federal action that requires NEPA compliance. The EIR/EIS for the IID Water Conservation and Transfer Project addresses the effects of issuance of an ITP to IID and fulfills the NEPA requirements associated with this federal action.

1.8.5 Salton Sea Restoration Project

Congress passed Public Law (PL) 102-575 in 1992. The law directs the Secretary of the Interior to “conduct a research project for the development of a method or combination of methods to reduce and control salinity, provide endangered species habitat, enhance fisheries, and protect human recreational values in the area of the Salton Sea.” The Salton Sea Reclamation Act of 1998 ([PL 105-372]), developed in response to these conditions, directs the Secretary to do the following:

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

The purpose and need for the Salton Sea Restoration Project is to maintain and restore ecological and socioeconomic values of the Salton Sea to the local and regional human community and to the biological resources dependent upon the Sea. These requirements are reflected in the directives of PL 105-372. The project is intended to have ecological, recreational, and economic benefits.

Prior to implementing the NEPA/California Environmental Quality Act (CEQA) process, the Salton Sea Authority and the Bureau of Reclamation, working jointly with stakeholders and members of the public, developed five goal statements. The goal statements are consistent with the direction contained in PL 105-372, address the underlying purpose and need for the project, and provide guidance for developing project alternatives. The five goals of the Salton Sea Restoration Project are:

1. Maintain the Sea as a repository of agricultural drainage

2. Provide a safe, productive environment at the Sea for resident and migratory birds and endangered species
3. Restore recreational uses at the Sea
4. Maintain a viable sport fishery at the Sea
5. Enhance the Sea to provide economic development opportunities

To implement the directive provided in PL 105-372, the Salton Sea Authority, as the lead California agency under CEQA, and Reclamation, as the lead Federal agency under NEPA, released a Draft EIS/EIR in January 2000, that evaluated alternative methods of restoring the Salton Sea. A revised Draft EIS/EIR that includes different alternatives and revised modeling and impact analysis is now being prepared.

1.8.6 California Endangered Species Act

The CESA is part of the California Fish and Game Code (Code). As a guide to state agencies, Section 2053 of the Code states that,

“ . . . it is the policy of the state that state agencies should not approve projects as proposed which would jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat essential to the continued existence of those species, if there are reasonable and prudent alternatives consistent with conserving the species or its habitat which would prevent jeopardy.”

The CESA also states, however, that such reasonable and prudent measures must at the same time maintain the project purpose to the greatest extent possible.

Section 2080 of the CESA prohibits import, export, take, possession, purchase, or sale of listed plant and animal species except as otherwise provided in other provisions of the CESA or the Code. The state restrictions under CESA on take differ from those under the FESA in how take is defined. For CESA, take is defined to mean, “hunt, pursue, catch, capture, or kill or attempt the same.” Noticeably absent from this definition are certain types of takings prohibited under Section 9 of the FESA (i.e., to harm or harass a listed species). Accordingly, Section 2080 of CESA prohibits the take of listed species except as otherwise provided under CESA or the Code, including the Native Plant Protection Act. Take of state-listed species may be authorized under CESA Section 2081. As specifically regards plants, Section 2080 of CESA prohibits the take of listed species except as otherwise provided under CESA or the Code, including the Native Plant Protection Act (commencing with Section 1900 of the Code).

Under Section 2081(b), CDFG may authorize, by permit, the take of state-listed endangered species, threatened species, and candidate species if all of the following conditions are met:

- (a) The take is incidental to an otherwise lawful activity.
- (b) The impacts of the authorized take are minimized and fully mitigated. The measures required to meet this obligation must be roughly proportional in extent to the impact of the authorized taking on the species. Where various measures are available to meet this obligation, the measures required shall maintain the applicant's objectives to the

greatest extent possible. All required measures shall be capable of successful implementation.

- (c) The permit is consistent with any regulations adopted pursuant to Sections 2112 and 2114 of the Code.
- (d) The applicant must ensure adequate funding to implement the minimization and mitigation measures, and for monitoring compliance with, and effectiveness of, those measures.
- (e) The permit will not jeopardize the continued existence of the species.

CDFG will make this determination based on the best scientific and other information that is reasonably available, and shall include consideration of the species' capability to survive and reproduce, and any adverse impacts of the taking on those abilities in light of known population trends; known threats to the species; and reasonably foreseeable impacts on the species from other related projects and activities.

IID is seeking incidental take authorization under Section 2081 for take of state listed and unlisted species (Table 1.5-1) that could occur as a result of O&M activities and activities associated with the water conservation and transfers in the Imperial Valley, Salton Sea and along the AAC. In addition, IID is seeking authorization under Section 2081 for incidental take of state-listed species that inhabit the LCR and could be affected by the change in the point of diversion of water conserved by IID and transferred to SDCWA or MWD. Appendix F contains the information and analyses necessary for CDFG to issue the ITP.

1.8.7 California Environmental Quality Act

Similar to NEPA, the CEQA requires state agencies empowered to make discretionary permitting decisions to evaluate the environmental effects of a proposed project. Issuance of a 2081(b) permit constitutes a state action requiring compliance with CEQA. The EIR/EIS for the IID Water Conservation and Transfer project addresses the effects of issuance of a 2081(b) permit to IID and fulfills the CEQA requirements associated with this state action.

1.8.8 California Native Plant Protection Act

The California Native Plant Protection Act (NPPA) includes measures to preserve, protect, and enhance rare and endangered native plants in addition to those provided under CESA. The definitions of rare and endangered in the NPPA differ from those in the CESA, but the list of protected native plants encompasses federal and state ESA candidate, threatened, and endangered species. The act also includes its own restrictions on take, stating that, “[n]o person shall import into this state, or take, possess, or sell within this state,” any rare or endangered native plant, except as provided in the NPPA. The exception is where landowners have been notified of the presence of protected plants by CDFG; they are required to notify CDFG at least 10 days in advance of changing land uses to allow CDFG an opportunity to salvage the plants.

1.8.9 California Fully Protected Species Statutes

Several proposed covered species are subject to the provisions of the fully protected species statutes in the Code. The fully protected species statute prohibits the “take” (as defined in

the Code) of fully protected species and does not currently include a mechanism for authorizing take of fully protected species. The fully protected species in the HCP area are listed in Table 1.5-1.