Chapters 1-4

Imperial Irrigation District Integrated Water Resources Management Plan

Draft IID Plan September 2009

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Abbreviations and Acronyms

AF	acre-feet
BMP	Best Management Practices
BMP	Best Management Practices
CAP	Central Arizona Project
CDPH	California Department of Public Health
CEQA	California Environmental Quality Act
CUWCC	California Urban Water Conservation Council
CVP	Central Valley Plan
CVWD	Coachella Valley Water District
DAC	disadvantaged community
DMM	Demand Management Measures
DoF	California Department of Finance
DWR	California Department of Water Resources
EDP	Equitable Distribution Plan
EPA	Environmental Protection Agency
IID	Imperial Irrigation District
IIM	Integrated Information Management
IRWMP	Integrated Regional Water Management Plan
IVAG	Imperial Valley Area of Governments
IWSP	Interim Water Supply Policy
KGRA	known geothermal resource areas
MAF	million acre-feet
MCI	municipal, commerical, and industrial
MW	megawatt
MWD	Metropolitan Water District of Southern California
NAF	Naval Air Facility
NEPA	National Environmental Policy Act
NPS	non-point sources
OEC	Ormat Energy Converter

ppm	parts per million
PVID	Palo Verde Irrigation District
QSA	Quantification Settlement Agreement
RAP	Region Acceptance Process
RWMG	Regional Water Management Group
SB	Senate Bill
SDCWA	San Diego County Water Authority
SDI	Supply Demand Imbalance
SRF	State Revolving Fund
SWP	State Water Plan
SWRCB	State Water Resources Control Board
TAF	thousand acre-feet
TDS	Total Dissolved Solids
TMDL	Total Maximum Daily Load
USBR	United States Bureau of Reclamation
UWMP	Urban Water Management Plan
WCSP	Water Shortage Contingency Plan

1 Purpose and Need, Goals, and Objectives

1.1 Introduction

The Imperial Irrigation District (IID) Strategic Plan[1] (Strategic Plan) adopted by the IID Board of Directors (Board) in September 2008 included an objective to develop an integrated water resources plan by the end of 2009, adoption of recommendations outlined in the plan in the first quarter of 2010, and implement the actions by mid-year 2010. IID is working to develop an Integrated Water Plan (IID Plan) to address changing water needs of the community and provide water for economic development while meeting its agricultural water needs and complying with existing agreements and regulations.

The target audience for this plan is the IID Board and the affected public. The IID Plan presents the consultants findings and recommendations. The Board will review the findings and recommendations, make decisions on the course of action to ultimately be implemented, and adopt the IID Plan. The IID Plan would then serve as a blueprint for future actions and decision making.

At the beginning of the process, the Board directed staff and consultants to "leave no stone unturned" and to provide a list of potential projects, demand management measures and policy alternatives that the Board could then choose from. The anticipated outcome of the planning process is a ***Water Supply Portfolio*** of capital projects, management actions and policies that would identify the water to be used to meet new municipal, commercial, and industrial (MCI) water demands without affecting current agricultural and municipal water users.

The IID Plan describes the planning process used to identify and screen a wide range of ***water management strategies***. The water management strategies provided the building blocks that were used to configure ***project solutions*** (capital facility or "brick and mortar projects") and non-structural ***policy or program solutions*** (e.g., water conservation programs, policies for allocating water during times of shortage, etc.). These project and policy alternatives can be further combined and integrated to develop immediate, near-, mid-, and long-term actions that could be implemented over a 37-year planning horizon, from 2010 to 2047.

It was anticipated that the information produced and published in the IID Plan would be further used by the Board to obtain a consensus by stakeholders on potential projects within the IID service area. Ideally, these projects would be accepted by the rate payers for funding and implementation. It is also expected that the IID Plan would reduce potential conflicts between water users, and between IID acting in its capacity as the water management agency

[1] IID 2008 Strategic Plan Adopted September 23, 2008; Strategic Objective B

and Imperial County and the cities acting as the land use authority and decision makers for projects that need water from IID.

The State's planning framework recommends local entities work to clearly define the issues and conflicts that are to be resolved through integrated planning. This section begins with a discussion of the issues and conflicts that shaped the purpose and need for the IID Plan and provided the basis for establishing goals and objectives.

1.2 Conflicts

One of the goals of the IID Plan is to resolve and/or reduce current and potential future conflicts among water users. No real or perceived conflicts can be resolved without recognition and clear understanding of the problems that drive the conflict. Conflicts within the Imperial Valley have historical, geographic, technical, and institutional components.

The QSA/Transfer Agreements and Federal operating rules for the Colorado River define a new reality and the changed circumstances under which IID must manage the water source of the Imperial Region.

With the growth of Las Vegas, the completion of the Central Arizona Project, and creation of the Arizona Water Banking Authority, IID and the other Colorado River contractors became enmeshed in interstate and interregional conflicts surrounding Colorado River water use. The Quantification Settlement Agreement and related Transfer Agreements (QSA/Transfer Agreements)[2] settled many interstate and interregional conflicts among federal interests (U.S. Bureau of Reclamation, USBR), Lower Basin States (California, Arizona, Nevada); and tribal and other California water rights holders Palo Verde Irrigation District (PVID) and Yuma Project, IID, Coachella Valley Water District (CVWD), Metropolitan Water District of Southern California (MWD) over the use of and rights to Colorado River water. This prevented litigation that could have resulted in even greater impacts to IID's water supply. Resolution of the interregional and interstate conflicts has resulted in supply constraints for IID customers that now must be resolved at the local level.

A host of technical problems and institutional issues covering the entire Southern California and Lower Colorado River geography were resolved by the QSA/Transfer Agreements, and after extensive public hearings the State Water Resources Control Board (SWRCB) issued approvals authorizing the QSA.[3] The QSA/Transfer Agreements have been approved by all appropriate parties, creating a complex legal, political, regulatory, and operational landscape.

The seniority of the IID water rights is confirmed under the QSA and the Federal agreements, and for the term of the QSA, the rights are effectively capped at 3.1 MAF per year.

[2] For an overview of the QSA and related documents, visit http://www.iid.com/Water/QSAWaterTransfer or http://www.usbr.gov/lc/reportsarchive.html

[3] SWRCB Order WRO 2002-0013, http://www.waterboards.ca.gov/waterrights/board_decisions/adopted_orders/orders/2002/wro2002-13revised.pdf

The Secretary of the Interior, acting as Water Master for the Colorado River and through the USBR, manages the large federal facilities on the Colorado River, establishes operating policies and provides final accounting for all Colorado River water uses including components of the QSA/Transfer Agreements. Since adoption of the QSA/Transfer Agreements, two major changes that both benefit and constrain IID include the Inadvertent Overrun and Payback Policy and the Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lakes Powell and Mead.

California's share of the Colorado River is fixed and finite at 4.4 million acre-feet (MAF) per year under most conditions, of which IID receives 3.1 MAF. In addition, the QSA/Transfer Agreements in total require IID by 2027 to reduce its net annual consumptive use of Colorado River water by 408,000 acre-feet (AF), with the conserved water transferred out of the Imperial Region. The result of these water transfers is to effectively reduce IID's annual supply to between 2.6 and 2.7 MAF of consumptive use measured at Imperial Dam. This supply is stable and reliable due to IID's senior water rights. With the implementation of on-farm and system efficiency measures, this amount is anticipated to meet existing agricultural demands in most years. One of the premises of the QSA/Transfer Agreements is that agricultural productivity will remain at pre-agreement levels and that extraordinary measures like fallowing of land would not be required to meet the commitments.

IID/MWD transfer projects produces 105,000 AF per year of conserved water per the agreement between IID and MWD. The additional reduction of 303,000 AF per year is to be achieved through the implementation of system and on-farm efficiency measures, without taking agricultural land out of production. The IID/San Diego County Water Authority (SDCWA) and IID/CVWD transfer agreements bring monies into the Imperial Region to fund the capital improvements and efficiency programs needed to achieve the required additional conservation and to address the environmental impacts of these programs. As with the IID/MWD program, measures implemented as part of the IID/SDCWA and IID/CVWD transfer programs are expected to reduce consumptive use by a like amount within the Imperial Region.

The Definite Plan outlines how IID will decrease its annual water use to meet its conservation and transfer obligations as defined by the schedules in the QSA/Transfer Agreements while ensuring the long-term viability of the IID's agricultural economic base.

The IID Definite Plan (IID, 2007) has been prepared by IID to define actions to conserve water and meet the IID QSA commitments. The Definite Plan provides a road map of the projects, costs, and investments that can be implemented as either voluntary on-farm or as system conservation measures using the revenues generated from the transferred water. Even with full implementation of the IID Definite Plan, agricultural demand is expected to vary significantly from year to year due to fluctuations in markets and weather, further complicating and limiting IID's operational flexibility. In addition, new MCI developments are anticipated for the Imperial Region, which may reduce the water supplies available for agricultural use. In some years IID's total annual consumptive use may exceed its Colorado River entitlement, resulting in inadvertent overruns (annual use that exceeds the capped amount), which IID must pay back in subsequent years according to the terms of the Inadvertent Overrun and Payback Policy.

To reduce the likelihood of an overrun in any given year, IID has approved an Equitable Distribution Plan (EDP) that defines how the District will apportion water to its customers when the demand for water is anticipated to be greater than the available supply. When this is projected to occur, a Supply Demand Imbalance (SDI) may be declared by the Board. For agricultural water users, implementation of the EDP will cap their annual water apportionments and call into effect other measures that require additional planning and water management actions, with resulting higher costs. The EDP provides a high degree of reliability to MCI users during time of supply and demand imbalance when agricultural users may be required to cut back on deliveries to prevent overruns and keep the total IID demand within the 3.1 MAF cap (less transfer obligations). The higher degree of reliability granted to non-agricultural users in the IID water service area further limits the annual supply available to existing agricultural water users in any year that SDI is in effect – especially if new developments, with their associated water demands, are approved.

The Equitable Distribution Plan provides a high degree of reliability to MCI users during time of supply and demand imbalance when agricultural users may be required to cut back on deliveries to prevent overruns and keep the total IID demand within the 3.1 MAF cap.

Two areas of conflict arise out of the potential for an annual overrun, both resulting from the hardened demands on the part of the MCI and environmental uses, which are not as affected in times of an SDI declaration. One conflict is that MCI water users pay a higher price to IID for water than do agricultural users – whether or not an SDI is declared. The higher price is associated with benefits of increased reliability. The other conflict is that MCI and, to a degree, environmental uses reduce the supply for existing agricultural users in years when demand exceeds supply, and development of new non-agricultural uses will only exacerbate this situation. Increasing MCI demands, with the higher reliability requirements, have a potential impact on historical agricultural uses of water and could result in the need for extraordinary conservation measures or fallowing in years when there is an overrun. This sets up a conflict between agricultural uses and proposed MCI uses over the impact and need for mitigation.

There are also years when IID may have an 'under-run,' when demand is less than the full entitlement available to divert. During under-run years, other California interests with junior water right priorities can divert and beneficially use the water that IID is not able to use. IID is seeking to develop opportunities to divert and store this water to increase water supply reliability in the Imperial Region. Potential storage may be available in the East Mesa, which is under the jurisdiction of Imperial County. The needed agreements regarding such a project could benefit from cooperation and development through the Integrated Water Resources Management Plan process.

The IID Cities and Imperial County have realized that their economic development is constrained by the recent cap on IID's Colorado River water supply and the lack of any new reliable water supplies that will not impact existing agricultural water availability. Agricultural users are concerned that new development projects may negatively impact their supply. To address this challenge, either "new"

Though solving problems within the Colorado River Region, the 3.1 MAP cap has created the potential for competition and conflicts at the local level among agricultural, municipal, industrial, commercial, and environmental uses within Imperial Region.

water is needed to support growth or water would have to be allocated from existing agricultural uses. Changes to State law imply changes to IID's role in the development review process and this creates the potential for conflict between IID and the lead land use agencies. Senate Bills 610 and 221 have increased the need for IID, the cities within IID, and Imperial County to adhere to more rigorous planning standards. Both the legislature and the courts have created substantive informational and procedural requirements for how IID and the land use agencies must interact to prepare water supply assessments, to verify water supply availability and during environmental reviews. Imperial County and the Cities are required to verify a supply prior to final approval of the final subdivision map for many developments, and to ensure that there are no impacts to existing users. The commitment of delivered surface water to new developments could significantly affect existing water users in the IID area or the other contractual or legal requirements to Colorado River water. IID and the land use agencies need to work together to demonstrate that water is available for proposed new development.

The new reality and changed circumstances affect the planning environment in which Imperial Region stakeholders are making land use and water management decisions, and there are existing and potential conflicts within the Imperial Region between current users and future users and/or among the types of water users (agricultural, municipal, industrial, commercial, and environmental). The conflicts are manifested in a number of lawsuits among local interests and in unresolved requests for water supply for new uses.

IID, as the water rights holder and wholesaler of the Colorado River supply, is working to develop a consensus with the other stakeholders in the Imperial Region regarding water availability, sources of new supply, and how best to set water supply policies that will affect land use decisions. Imperial County and the IID Cities need to be able to make defensible findings related to reliable water supply availability for new development water demands. In addition, a host of other issues related to water treatment, source water protection, drainage, recycling, and groundwater management may best be addressed at a regional scale.

The water supply and demand management problems, conflicts, and opportunities described herein must now be resolved within the Imperial Valley at the local level by community stakeholders. The IID Plan will establish a range of water management strategies that can be used to develop project alternatives resulting in priorities for funding and implementation. The Imperial Region seeks to use the IID Plan framework to address and resolve conflicts through a facilitated process to reduce competition and polarization in the community, to build consensus, to provide an alternative to litigation, and to find a way forward in which the water demands for agriculture, economic development, and environmental uses can be met in a more harmonious manner.

1.3 Purpose and Need for IID Plan and Proposed Imperial Region IWRMP

The purpose of the IID Plan is to define a cost-effective water supply portfolio that supports economic development and provides a reliable supply of water for new MCI demands without impacting historical agricultural uses of water or impacting existing agreements or contracts. The purpose is also to prevent or resolve conflicts between water users; to manage changes in the place of use or type of use of water within IID boundaries; and to ensure that all of the IID entitlements to Colorado River water are reasonably and beneficially used.

Changes in State law make water management and land use planning interdependent, and without a firm water supply, Imperial County and cities may have trouble documenting that there is a verifiable water supply, making defensible findings, and permitting new development that increases water use.

IID Cities and developed areas within the IID service area include Brawley, El Centro, Imperial, Westmorland, Calipatria, Niland, Seeley, Heber, Calexico, and Holtville. The respective cities and Imperial County have authority over land use. They adopt General Plans and zoning to guide land use; prepare UWMPs to guide use of their available water supplies where required to do so; and act in such matters as lead agency pursuant to the California Environmental Quality Act (CEQA). IID, as a responsible agency with jurisdiction by law, provides comments on land use and development proposals to ensure all impacts to IID current water users and facilities are adequately recognized and mitigated. As a water wholesaler and water management agency, IID seeks to consult with Imperial County and the IID Cities when they are making determinations as to the adequacy of existing water supplies and when they need to make findings to commit water to new development.

Imperial County adopted a Groundwater Management Ordinance, revised May 11, 2004, and amended August 3, 2004. Portions referring to IID are contained in Section 92202.01. IID and the County need to work together to realize any potential to develop groundwater in storage. Developing groundwater in storage would result in storage depletion since the natural recharge is limited or non-existent.

Physical solutions consisting of local and regional projects, policies and funding are needed to ensure a safe, reliable water supply is available to meet planned and anticipated MCI demands in the incorporated cities and/or unincorporated areas of Imperial County. IID is working to provide a reliable supply to meet MCI demands, including geothermal and other possible energy projects; while ensuring that these new supplies avoid, minimize, or mitigate impacts to historical agricultural water users.

1.4 Goal

The Board initiated work in January 2009 to prepare and plans to adopt the IID Plan. The Board reviewed and accepted the goals and objectives at the April 14, 2009 Board Meeting. The IID Plan will provide the basis for the Imperial IRWMP, which will be developed in cooperation with additional stakeholder input. The proposed goal for the IID Plan and the IWRMP is:

> "To provide a strategic road map that defines a portfolio of water projects, demand management measures and policies intended to deliver a reliable water supply for municipal, commercial, and industrial water users over a 37-year planning horizon from 2010 to 2047; and garners local consensus for a course of action that anticipates and thus avoids conflicts over water within the IID service area."

1.5 Objectives

The objectives for the IID Plan should be tangible and specific, and should help the Board to define and select alternative management strategies that will support the Board in meeting the stated goal. The objectives provide a basis for screening water management strategies that include both capital projects and non-structural policies and programs. IID Plan objectives are to:

- Prevent impacts to existing agricultural users of water and protect IID water rights.
- Define cost-effective projects and equitable cost sharing agreements with those entities and water users that would receive benefits from proposed water management actions.
- Identify projects that are consistent with existing agreements on use and management of the Colorado River, including the QSA/Transfer Agreements.
- Recognize and resolve potential conflicts over use of available water resources.
- Promote economic development consistent with IID policies, standards, and guidelines for new consumptive uses of water.

2 Background and Plan Overview

IID is located in Imperial County, between the Colorado River and the Salton Sea, which is California's largest saltwater lake.[4] Figure 2-1 shows the general location of IID's major delivery facilities and other major regional water delivery infrastructure. The area is reliant on imported water supplies from the Colorado River. The major population centers are generally located on the expanse of flatlands created by the valley infilling between the surrounding mountain ranges. The Coachella Valley is to the north and the Mexicali Valley (Baja California, Mexico) to the south, both of which lie within the Salton Sea watershed.

This portion of California is a desert with high temperatures and low average rainfall of three inches per year; however, surface water for irrigation is available supplied wholly from the Colorado River via the All-American Canal. As a result, the area has become suitable for agriculture, which has supported the economic growth and establishment of population centers in and around the Imperial Valley. The need for balancing the MCI demands with the agricultural demands creates a unique situation for the area's water needs and requires consideration to effectively manage water resources.

Figure 2-2, Jurisdictional and Administrative Boundaries, presents the county boundaries, location of developed areas, water district boundaries, IID delivery system, and important land ownership features. IID is responsible for delivery of untreated, non-potable Colorado River water for all uses. IID has an entitlement to 3.1 MAF of Colorado River water.

Figure 2-3 presents the key hydrologic features showing the watershed boundaries, groundwater basin boundaries, and other important IID facilities used to manage Colorado River supplies. With more than 3,000 miles of canals and drains, IID is the largest irrigation district in the nation; delivering up to 2.8 MAF annually to nearly one-half million irrigated acres.[5] Approximately 97 percent of the delivered water is used for agricultural purposes, making possible Imperial County's ranking as one of the top ten agricultural regions nationwide. The remaining three percent of its water deliveries supply seven municipalities, one private water company, and two community water systems as well as a variety of industrial uses and rural homes or businesses.[6]

The Urban Area designation on the Imperial County's Land Use Plan includes areas surrounding the six incorporated cities; Imperial, Brawley, El Centro, Westmorland, Holtville, and Calexico (IID Cities). The respective IID Cities and Imperial County have authority over land use; adopt General Plans and zoning to guide land use; prepare Urban Water Management Plans (UWMPs) to guide use of their available water supplies where required to do so; and act as lead agency pursuant to the CEQA. The Imperial Region

[4] California DWR. 2009. *California Water Plan Update 2009 Public Review Draft.*

[5] For a complete Water Balance see *IID 2007 Water Conservation Plan,* pp 28 – 32.

[6] IID website.

includes a number of unincorporated communities, Calipatria and Niland to the north; Heber, Seeley, and the Naval Air Station in the center; and Ocotillo/Nomirage in the West Mesa area.

Figure 2-1. Regional Location

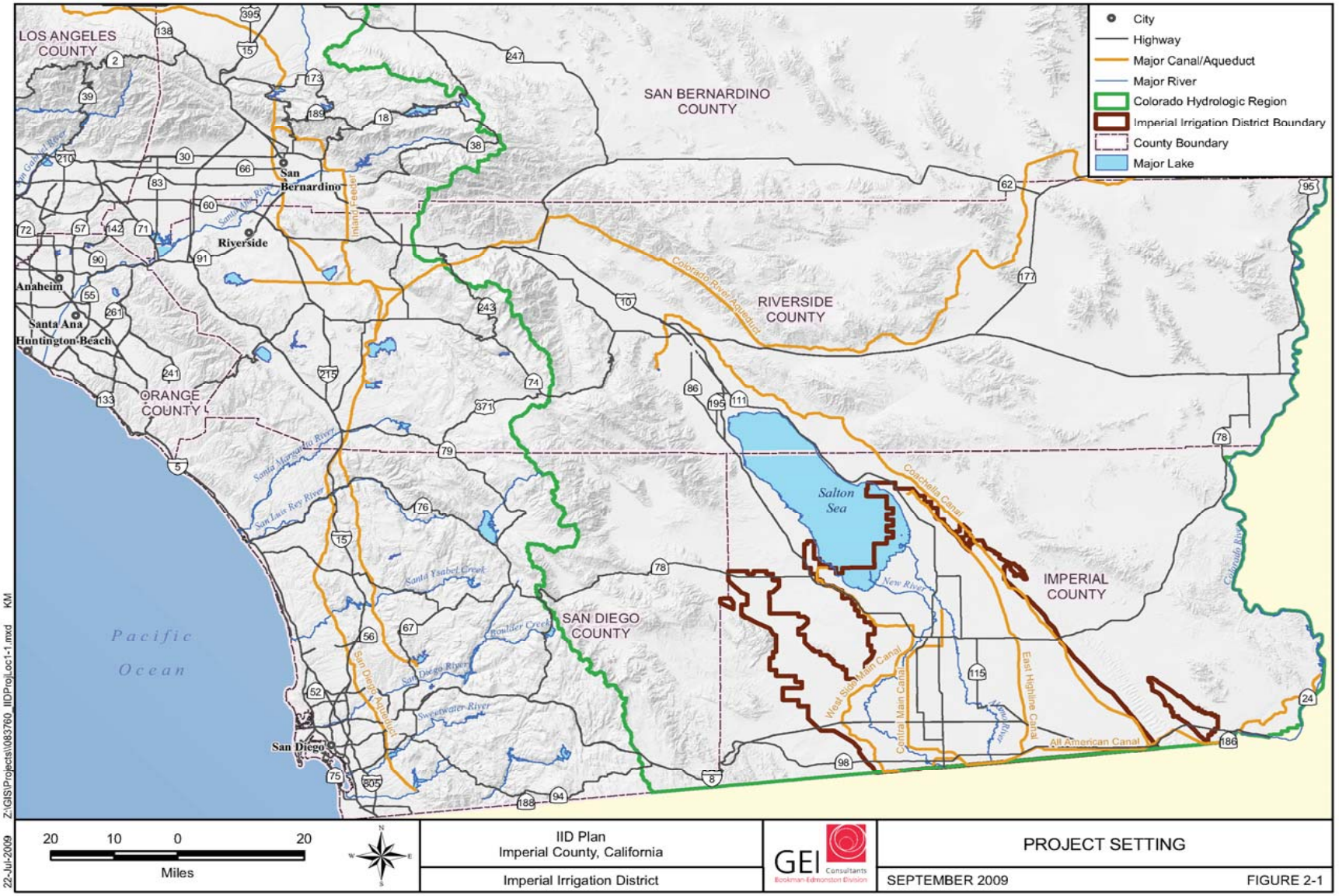


Figure 2-2. Administrative and Jurisdictional Boundaries

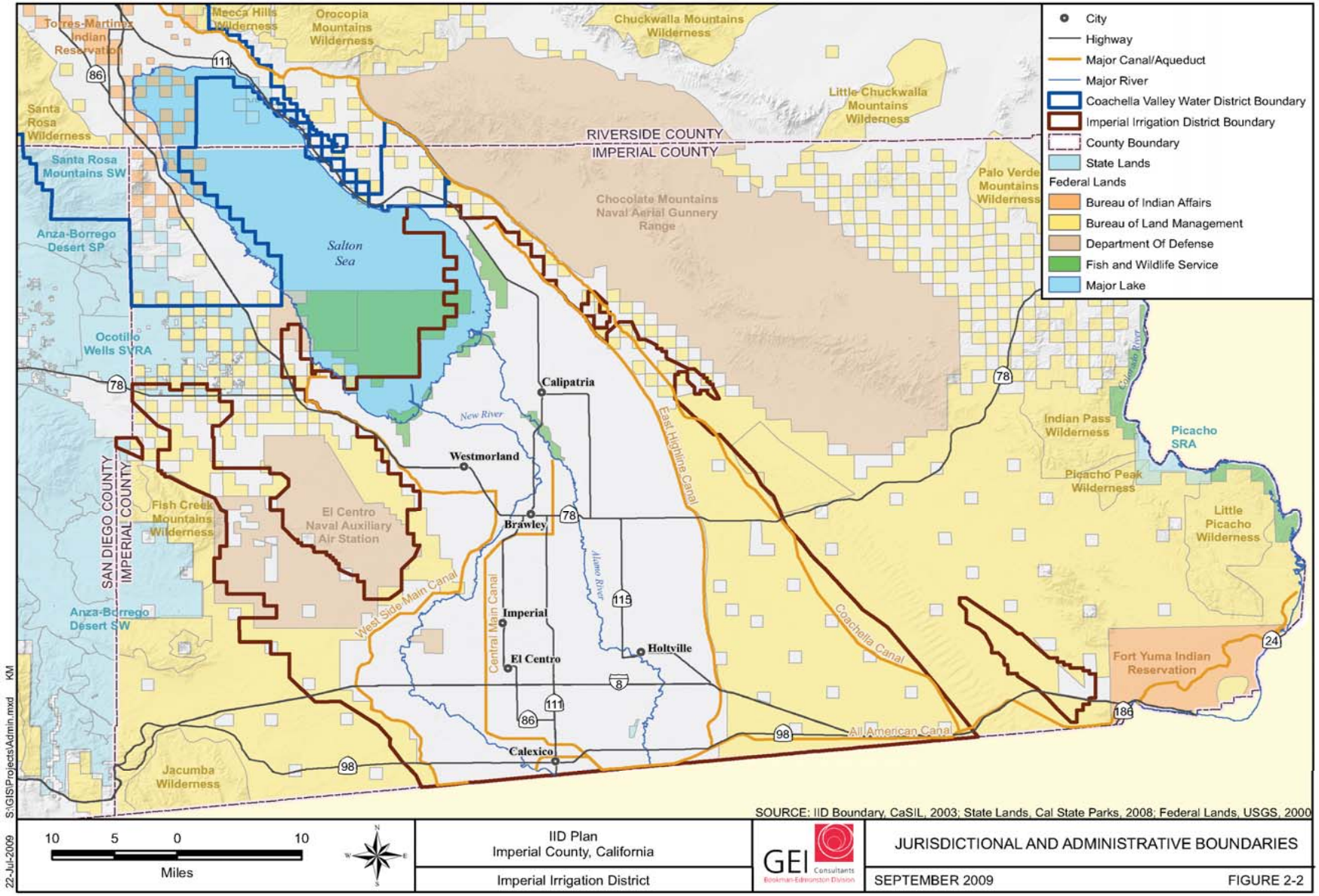
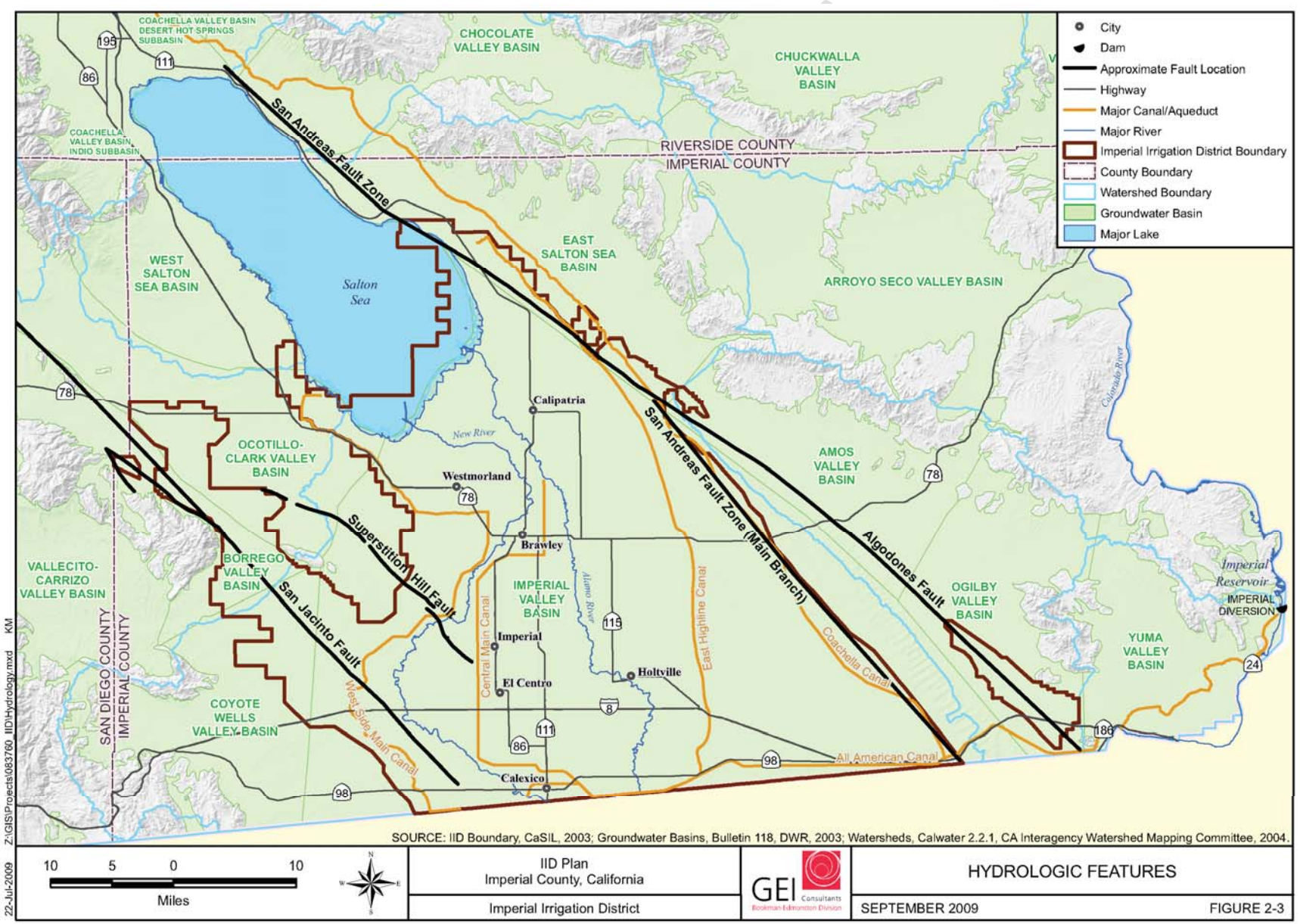


Figure 2-3. Key Hydrologic Features



2.1 IID Background and Authorities for Developing the IID Plan

IID is an irrigation district organized under the California Irrigation District Law, codified at §§ 20500 et seq. of the California Water Code and the IID Plan is developed under the authorities granted IID. IID delivers Colorado River water in its service area for potable and irrigation purposes. By a decisive favorable vote at an election held on July 14, 1911, the people of the valley organized the IID and the vote was made effective by Resolution of the Board of Supervisors of Imperial County on July 24, 1911. IID is governed by a five-member Board of Directors. While elected by vote of all qualified voters, each member represents a separate geographical division of IID. Directors serve a four-year term. Critical functions of IID are:

- Diversion and delivery of Colorado River water
- Operation and maintenance of the drainage canals and facilities
- Generation and distribution of electricity

IID provides a majority of the water distribution and drainage services that are available in the service area.[7] Surface water, purveyed under IID's senior water rights to the Colorado River water[8] and contract with the federal government,[9] is delivered through an extensive canal system. IID delivers only untreated, non-potable surface water to agricultural, domestic, MCI users in its 500,000 acre water service area. IID purveys wholesale water to MCI users but does not provide treated water at the retail level. Cities and other developed communities that receive water from IID, treat and purvey it to their retail customers. It is anticipated that the MCI sector use will increase in the future, placing increased demands on a water supply that has become stressed as a result of IID actions and plans to meet QSA/Transfer Agreement obligations. IID also provides access to an extensive drainage network. Drainage water is collected in an equally extensive surface drain system and conveyed via the New River or Alamo River or directly to the Salton Sea.

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[7] IID Energy provides electric power to more than 145,000 customers in the Imperial Valley and parts of Riverside and San Diego counties. As the sixth largest utility in California, IID Energy controls more than 1,100 megawatts of energy derived from a diverse resource portfolio that includes its own generation, and long- and short-term power purchases. As a consumer-owned utility, IID Energy works to efficiently and effectively meet its customers' demands at the best possible rates, tying the area's low-cost of living directly with low-cost utilities. This is accomplished by producing 30 percent of our power supply locally; and using efficient, low-cost hydroelectric facilities, steam generation facilities, as well as several natural gas turbines. Environmentally friendly operations are emphasized by employing as many "green" resources as available. IID Energy's diverse resource portfolio provides its customers with some of the lowest cost rates in the State.

[8] The California State Water Resources Control Board issued Water Rights Permit No. 7643 in January 1950 to divert up to 10,000 cfs year-round, limiting the IID diversions under its federal contract to 3,850,000 acre-feet per annum. IID also holds pre-1914 water rights.

[9] In 1932 IID entered into a contract with the Secretary of the Interior to receive entitlement to 3.85 MAF of water minus priorities one (PVID) and two (Yuma Project) – as in the 1931 California Seven-Party Agreement. IID's federal entitlement has two components: 1) the Prior Perfected Right to 2.6 MAF, and 2) the remaining contract portion, between the PPR and the maximum amount under the 1932 Contract and the Seven Party Agreement – both grounded in state law prior appropriations, as limited by the QSA and related Transfer Agreements.

2.2 Policy Baseline and Existing Conditions

There are a range of existing conditions that provide the baseline from which to develop capital project or policy solutions. The baseline policy environment for developing the IID Plan includes:

- The Law of the River and historical Colorado River decisions, agreements and contracts
- The QSA/Transfer Agreements
- IID Water Conservation and Transfer Project Habitat Conservation Plan/National Community Conservation Planning Act (HCP/NCCP (Draft, May 2009)
- The Definite Plan, now referred to as the Systems Conservation Plan, which defines the rigorous agricultural water conservation practices being implemented by growers and IID to meet the QSA commitments
- The EDP, which defines how IID will prevent overruns and stay within the cap on the Colorado River water rights
- Existing IID standards and guidelines for evaluation of new development and define IID's role as a responsible agency and wholesaler of water
- The Imperial County General Plan and the General Plans for each of the IID Cities

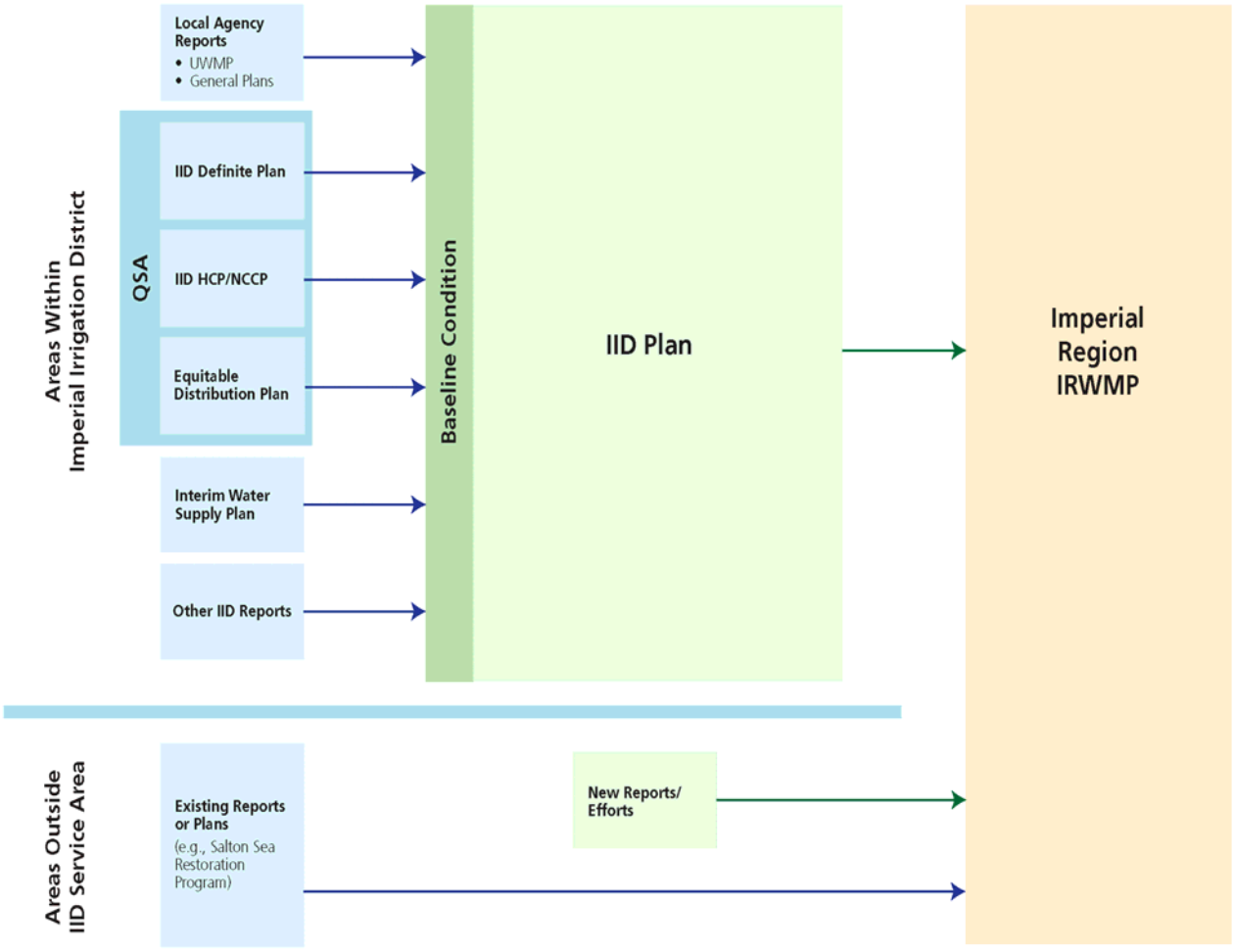
2.3 Relation to Other IID Planning Efforts

As originally conceived, the IID Plan was intended as a document primarily for IID's use in identifying a water supply portfolio for MCI and environmental uses, and to define actions that IID could take independently to develop projects or policies to meet increasing demands and support economic development.

The IID Plan was developed in context of a rapidly evolving set of circumstances and a pressing need to find water for proposed projects. The IID Board was under increasing pressure to find firm and sustainable water supplies for projects that were already being considered by Imperial County and the IID Cities and were in the queue for decisions by the lead land use agency. The relationship between the IID Plan and other planning efforts within the Imperial Valley is represented conceptually on Figure 2-4. The existing plans and agreements adopted by the IID Board provide the baseline conditions. Existing city and Imperial County general plans and UWMPs also establish the existing conditions for development of the IID Plan.

The IID Board directed staff to identify an Interim Water Supply Policy (IWSP) that would allow IID to apportion water to the currently proposed projects; support the lead land use agency to make appropriate and legally defensible findings and determinations related to water supplies and environmental impacts; and allow the proposed land use or development proposals to proceed.

Figure 2-4 Relation to Other IID Planning Efforts

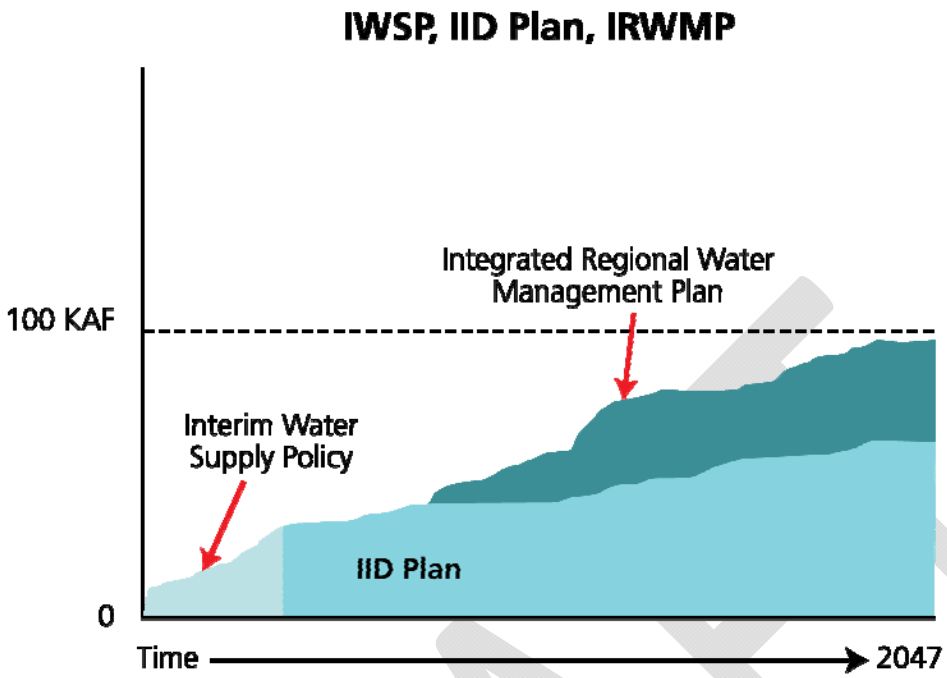


The IID Staff, consulting team for the IID Plan, and IID Definite Plan consultants have been working together to identify immediate and near-term projects that IID can implement relatively quickly as part of the IWSP and can be integrated into the IID Plan.

The State of California is encouraging water districts and land use agencies to work together to develop IRWMPs. The California Department of Water Resources (DWR) provides IRWMP guidelines and is managing the distribution of Proposition 50 and 84 grant funds. Monies are available for planning and project implementation. Obtaining bond funding is contingent on having an IRWMP that meets the state standards. Originally, the IID Plan was not intended to be an IRWMP prepared pursuant to the State of California requirements. Development of the Imperial Region IRWMP will require a far more extensive stakeholder involvement process that was anticipated for the IID Plan, and Imperial IRWMP projects could involve multiple participants and sponsors.

Figure 2-5 shows the timing of the water supplies produced under the different plans.

Figure 2-5. Timing of Water Supplies from IWSP, IID Plan, and IRWMP



In order to preserve the option of developing an IRWMP, IID decided to evaluate DWR's recommended water management strategies as a first step to be consistent with the State's requirements and legislative intent for an IRWMP. It is the intent of the Legislature to encourage local agencies to work cooperatively to manage their available local and imported water supplies to improve the quality, quantity, and reliability of those supplies. State funding has been made contingent on such cooperation.

The State's planning framework is also intended to identify regional priorities and provide the basis for allocating public resources (bond funds). The State's intent is also for local entities like IID to coordinate with others in their planning area to identify, avoid, and resolve water-related conflicts at a local level. As such, the IID Plan identifies the conflicts within IID, which need to be directly addressed if the IID Plan is to be a success.

There is $36 million available from Proposition 84 in the Lower Colorado Region for projects identified in an IRWMP. As mentioned, the preparation of an Imperial Region IRWMP (with boundaries that extend beyond those of the IID Plan) is being considered. With the exception of the City of Brawley, the communities within IID are classified as disadvantaged and could benefit from access to the state bond funds being distributed under the State's IRWMP program.

Meetings and conference calls were held in February and March with Imperial County and the IID Cities to explain the Board's intent for developing a plan and to begin the outreach process. Considerations expressed by participants to embark on an integrated planning process include:

- Involvement in achieving better planning efforts that address regional water needs unique to the Imperial Region and ensuring those needs are adequately identified and prioritized.
- Developing solutions that help the cities with preparation of water supply assessments and UWMPs.
- Coordinating water management between regional agencies and working together to find economically and environmentally responsible solutions to regional needs.
- Ensuring equitable resource protection.
- Ensuring appropriate consideration for federal and state funding.
- Ability to integrate specific funding through a sub-regional approach.

The Board made a mid-course correction in March 2009 and directed staff to continue to develop the IID Plan and initiate the process to also develop an Imperial Region IRWMP. The first step was to produce a Region Acceptance Process (RAP) document to submit to DWR for review and approval of the proposed Imperial Region. The RAP defines the proposed decision making structure for governance and oversight roles for developing the plan, and a preliminary plan for stakeholder involvement and public involvement. It explains how IID water and the land use agencies in the Imperial Region will employ coordinated approaches to the planning of multi-beneficiary projects that will achieve the parties' common objectives.

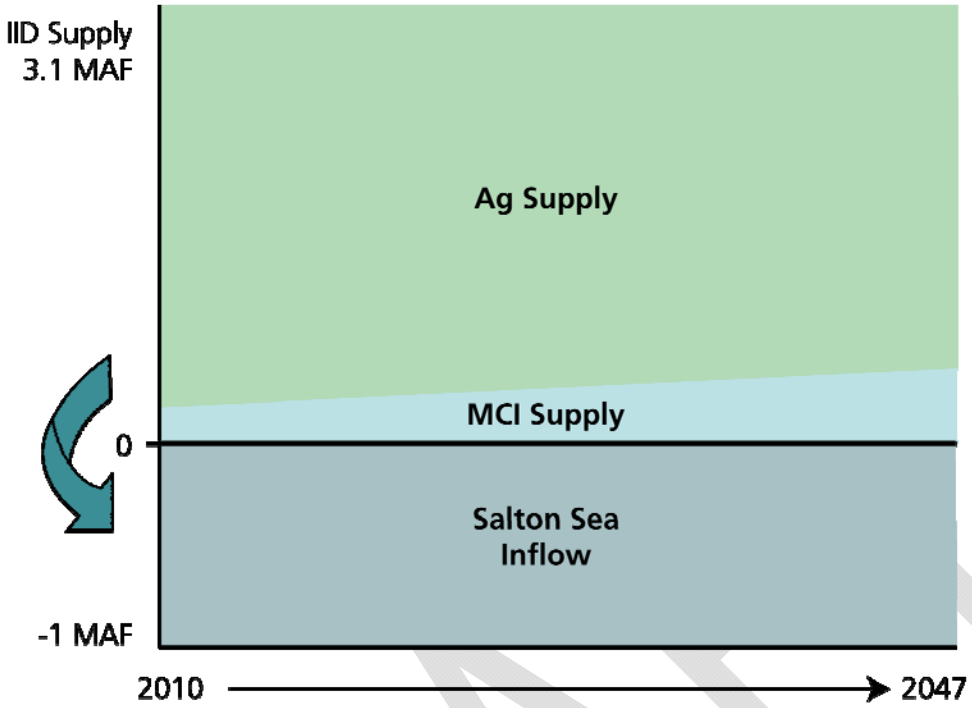
The State is encouraging water agencies like IID to work with the land use agencies, other water districts and local stakeholders to realize efficiencies, coordinate on regional projects and integrate their assets, and seek mutual solutions to regional water management issues.

2.4 The IID Water Supply Portfolio

The IID Water Supply Portfolio includes the water assets that can be managed to meet current and future demands. As explained in greater detail in Chapter 5, IID's current Water Supply Portfolio includes 3.1 MAF of water rights to the Colorado River. The most senior rights are the 'prior perfected rights' to approximately 2.6 MAF.

Figure 2-6 conceptually shows how the 3.1 MAF is apportioned between agricultural and MCI uses and further illustrates how MCI use increases over time. Historically, one third of the water, or about 1 MAF, was outflow to the Salton Sea via farm runoff and drainage that was salty and not able to be put to additional use.

Figure 2-6. Conceptual Water Supply Portfolio

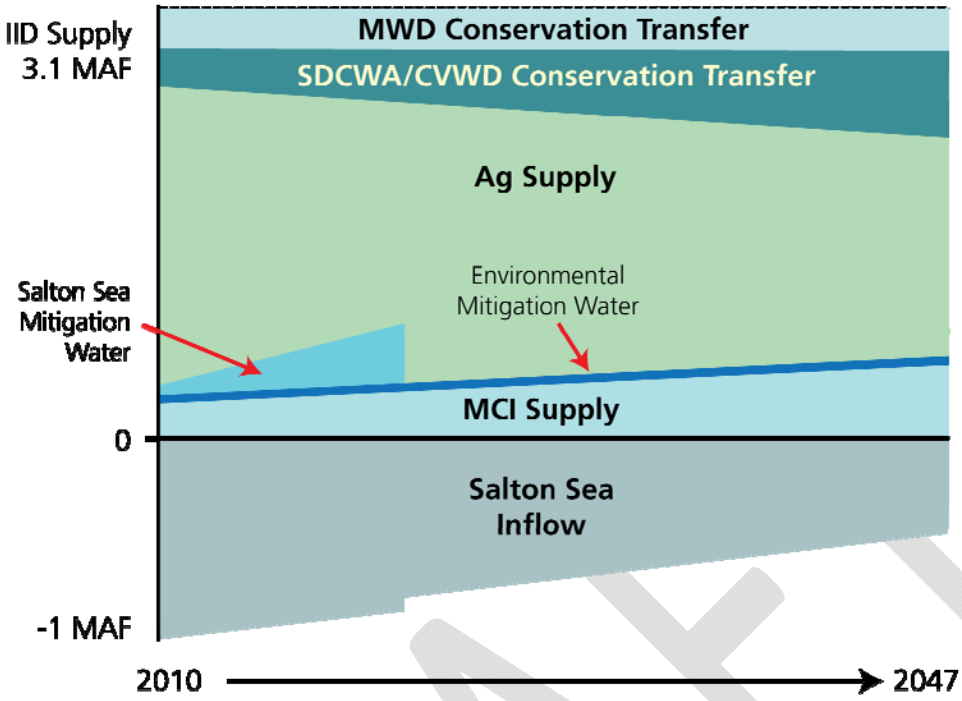


The IID Colorado River water rights are a collective right and are IID's principal assets to be managed for the benefit of the lands and people within the service area. The amount that IID can divert can vary with drought conditions, but IID's water rights are very senior and less subject to cut back in dry times than almost all of the other rights to the Colorado River. This is one reason the problem has been identified as more of a demand problem than a supply problem. The supply is relatively fixed, and it is the demand that can vary based on rainfall, agricultural market conditions, crop mix, and other variables.

The QSA/Transfer Agreements with MWD and SDCWA/CVWD provided funding to support agricultural conservation efforts. This conserved water was then made available for the transfer, but IID still retains the water rights. This benefits IID and the transferring party.

The QSA/Transfer Agreements affects the Water Supply Portfolio in a number of ways as shown in Figure 2-7. Agriculture conservation reduces the proportional share of the water used by agriculture while maintaining the existing levels of production. The reduction in agricultural use resulting from conservation reduces the flow to the Salton Sea as shown in Figure 2-7 by the diminishing amount of water that flows to the Salton Sea over time. As part of the QSA/Transfer Agreements, IID was required to provide water to the Salton Sea through fallowing of agricultural land to prevent impacts. IID also provided environmental water and has created wetlands mitigation for impacts associated with the reduction in drainage water. These are also shown on Figure 2-7.

Figure 2-7. Future Water Supply Portfolio with the QSA/Transfer Agreements



The linchpin of the IID Plan is to identify 100 TAF of water that can be more actively managed to meet MCI and environmental water demands within the IID service area, with 50 TAF to be identified by no later than 2010, and the balance to be defined by 2040.

Managing the current 3.1 MAF Water Supply Portfolio to meet this goal can be accomplished by different methods, including:

- Expanding the size of the Portfolio
- Preventing or recapturing water leaving the Portfolio
- Apportionment of water within the Portfolio

As shown in Figure 2-8, expanding the Water Supply Portfolio could include actions such as importing additional water from the Colorado River or by developing local groundwater. Preventing or recapturing water leaving the Water Supply Portfolio would also result in more water for local use and could include desalination of drain water or recycling municipal wastewater. Both drain water and municipal wastewater currently flow to the Salton Sea and are lost for purposes of beneficial use within the IID service area. This is shown conceptually in Figure 2-9.

Managing or apportioning water within the current Water Supply Portfolio is shown conceptually in Figure 2-10. The volume of water needed for future MCI uses would come from a reapportioning of water from existing uses to new uses, either through conservation, or by stopping using water in one place and moving it to another place for a different use. This later situation would likely result in fallowing of land, less intensive cropping, or some other means to ensure a firm yield of water.

Figure 2-8. Expanding the Size of the Water Supply Portfolio

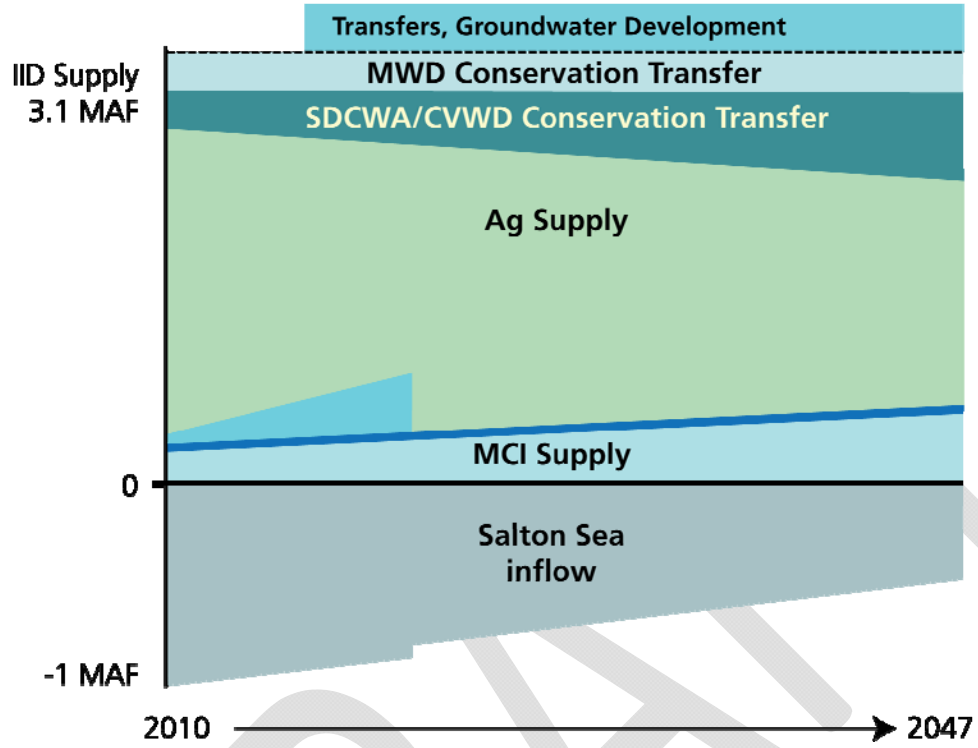


Figure 2-9. Recapturing Water Lost to the Salton Sea for Reuse as Part of the Water Supply Portfolio

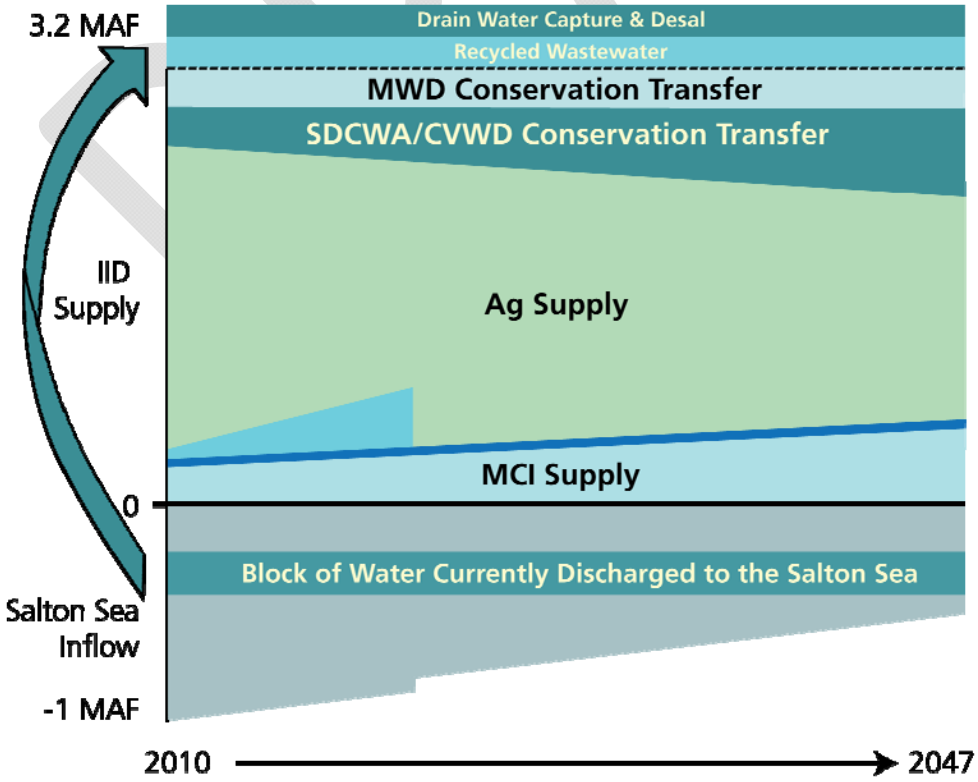
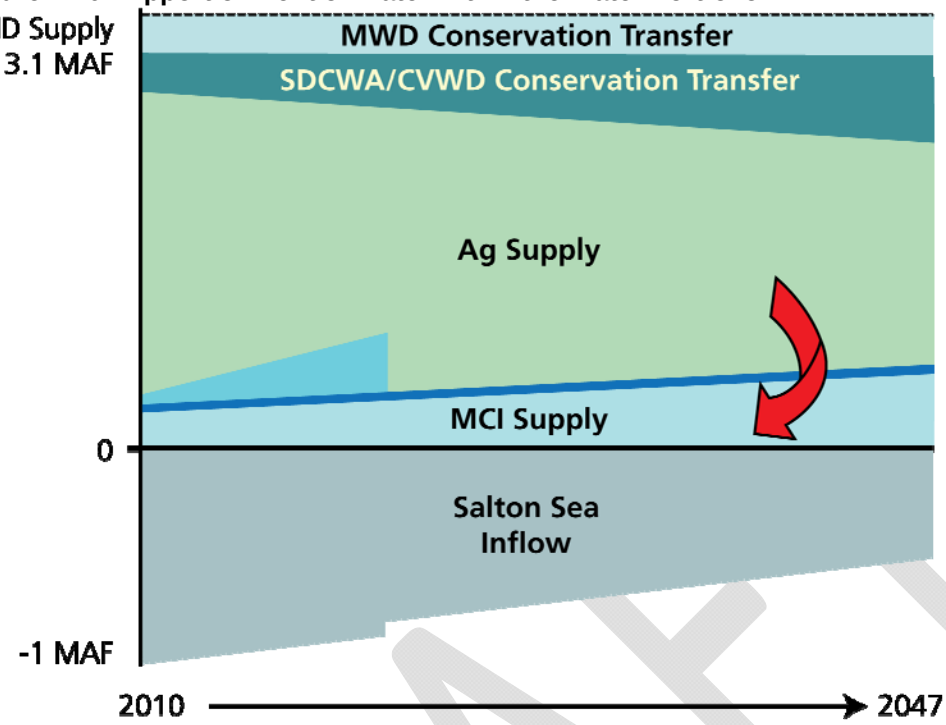


Figure 2-10. Apportionment of Water within the Water Portfolio



Allocation, apportionment, or exchange of water between users within IID are all construed to have the same meaning. These actions would occur under a mechanism to be used within IID to account for changes in the place or type of water use. A process to manage allocation or apportionment is needed to ensure that they do not result in substantial injury to any other legal user of water; and that there is net economic benefit to the IID service area. IID will need to work with the community to develop a system to distribute, apportion, allocate, or exchange water available to the IID service area.

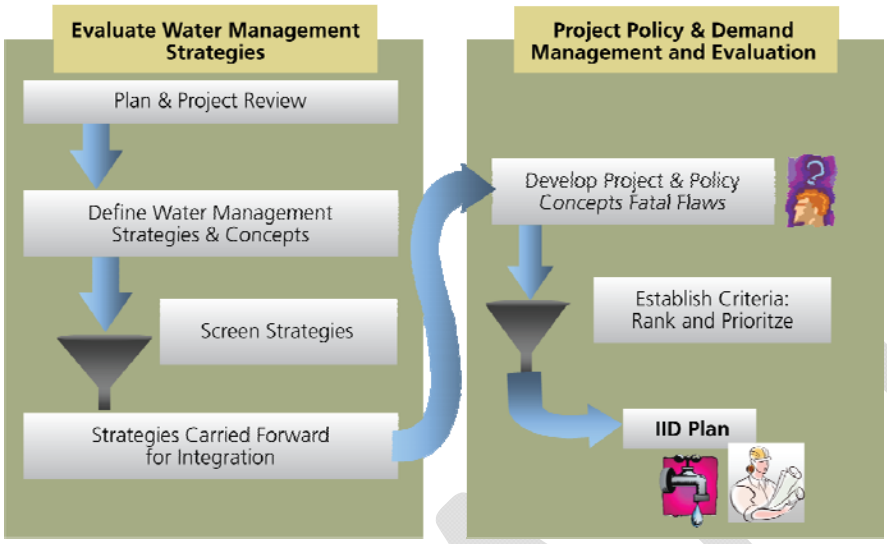
2.5 Process and Planning Framework

The IID Plan was developed through a number of sequential steps shown on Figure 2-11. The first step included review of the water management strategies recommended by DWR for inclusion in integrated plans. The State legislature has also made use of state grants of bond funds contingent on review and integration of these strategies. This first step was documented in "Project Scoping Report – Review and Evaluation of Water Management Strategies" presented in Appendix A and summarized in Chapter 6. Some of the water management strategies were carried forward for further review as part of the IID Plan, a number were determined not to be applicable to IID or would not meet the IID Plan objectives, while others were identified as being appropriate for further review as part of the proposed Imperial IRWMP.

The water management strategies carried forward were then integrated and used to develop project alternatives. The project alternatives were then evaluated and compared using a ranking and screening criteria to identify fatal flaws, compare the range of supply augmentation and demand management solutions, and prioritize recommendations for

inclusion in the IID Plan. The recommendations were then to be considered by the Board for implementation over the defined planning horizon.

Figure 2-11. Planning and Process Framework



2.5.1 Planning Horizon

The IID Plan is to configure project and policy alternatives that will be implemented over a 37 year planning horizon from 2010 to 2047. This end point of the QSA agreements was chosen as the out boundary of the planning horizon.

IID is the water wholesaler. Retail water purveyors within the IID area that have greater than 3000 service connections are required by State law to update their UWMPs in 2010, and every five years thereafter. The UWMPs need information contained in the IID Plan and should be developed to be consistent with the IID Plan.

2.5.2 Project Integration

At the beginning of the process, the question was asked, "What is being integrated?" Based on discussions with the staff and Board, it was concluded that the IID Plan and subsequent Imperial IRWMP would investigate how to integrate the following:

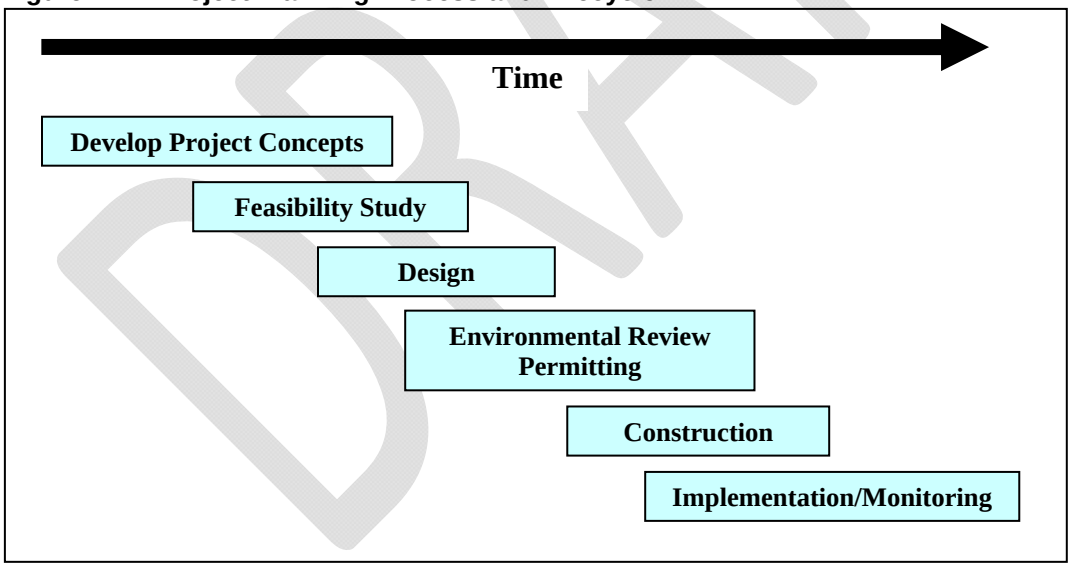
- Regional and local water supplies
- Supply and demand management measures
- Capital projects and policies to better manage the available Colorado River Supply
- Sources of local, state, and federal funding
- Capital facilities over the planning horizon
- Existing plans
- Political powers and authorities of the local agencies

This later point, integration of political powers and authorities, would help to establish a unified front when dealing with others within the Colorado River region, and with the state and federal government agencies that influence how IID manages its supplies.

Chapters 6 and 7 describe how water supply sources, water management strategies, and capital facilities/projects were considered and integrated into the IID Plan. Throughout the document there is discussion on how existing plans are factored into the IID Plan or should be factored into the Imperial IRWMP. Later chapters deal with integrating funding sources and political authorities.

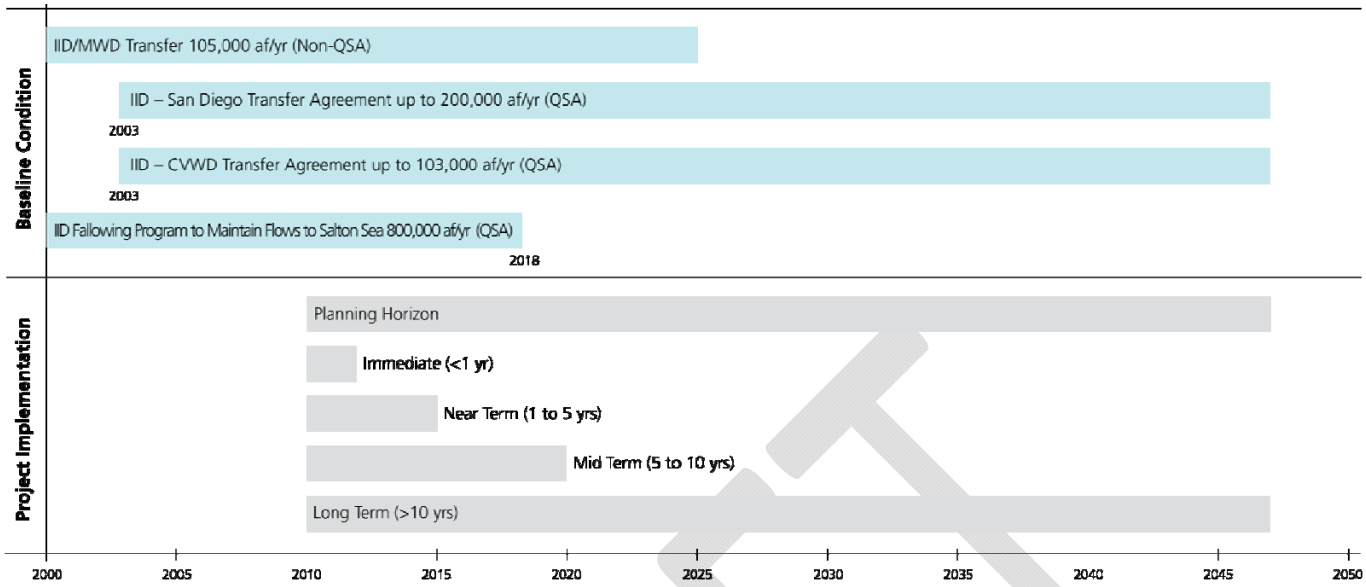
The IID Plan seeks to integrate projects over the planning horizon based on where a project is in the planning process and a project's readiness to proceed. Knowing where a project is in the project development lifecycle will help IID and local stakeholders set priorities and match projects to potential funding sources. For example, if a project requires a further feasibility study prior to moving into the design phase, this activity may be able to be funded through grant funds intended for this purpose. Alternatively, if a project is "shovel ready," it may be qualified to receive state or federal grant funds for construction and implementation. Shovel ready projects are those with final designs, environmental clearances and permits, and identified sources of financing.

Figure 2-12. Project Planning Process and Lifecycle



The timeline for implementing proposed projects was broken down into immediate, near-, mid-, and long-term priorities. Each of the policies and projects were characterized in terms of their 'readiness to proceed' and where the project was in the project development lifecycle. This is shown in Figure 2-12. Individual project development lifecycles may fit into the project implementation categories (immediate, near-term, mid-term, long-term) shown on Figure 2-13.

Figure 2-13. IID Program Time Line



2.5.3 Planning Challenges

In developing the IID Plan, it is recognized that IID is facing complex challenges related to:

- Aging infrastructure both inside the district and for major conveyance.
- Impacts of urban growth on existing infrastructure (e.g; piping canals, liability).
- Inability to increase rates and fees both from a policy standpoint (Proposition 218), and as a result of economics of rural agricultural communities and crop commodity markets.
- Competition for available supplies within the Colorado River Region and Southern California, and internally within IID between current agricultural users, environmental water demands, and expanding urban communities.
- Changing societal values regarding water district roles in the planning process and changes to State law governing land use and water supplies (SB610 and SB221 requirements).
- Constantly changing and evolving regulatory environments (e.g., CEQA, National Environmental Policy Act (NEPA), 404 permitting; State and Federal Endangered Species Acts).
- Increased, and sometimes unrealistic, expectations on how much water can be saved through conservation.
- Introduce and integrate SB610 and SB221 culture.

3 Physical Setting, Regional Water-Related Components

This section provides a description of water-related components of the region. It generally describes the physical components including the natural and man-made infrastructure, watersheds and surface features, groundwater basins, water collection systems, distribution systems, wastewater systems, flood water systems, and recharge facilities. This section also explains how water arrives in the region, how it is used, and how it is handled after it is used.

Irrigation water is available solely from the Colorado River and is transported to the Imperial Valley via the All-American Canal. As a result, the area is suitable for agriculture, which has supported the economic growth and establishment of population centers in and around the Imperial Valley. The need for balancing a fixed supply with the growing MCI demands and existing agricultural demands creates a unique situation for the area's water suppliers, which requires integrated consideration in order to effectively manage water resources and the region's further development.

With more than 3,000 miles of canals and drains, IID is the largest irrigation district in the nation. IID has the right to the net consumptive use of up to 3.1 MAF per year of its Colorado River entitlement. Up to 2.8 MAF of Colorado River water are delivered to nearly one-half million irrigated acres and a variety of other users in the Imperial Valley. Approximately 97 percent of the transported water is used for agricultural purposes, making possible Imperial County's ranking as one of the top ten agricultural areas nationwide. The remaining three percent of IID's water deliveries supply seven municipalities, one private water company and two community water systems as well as a variety of industrial uses and rural homes or businesses.[10]

3.1 Climate

IID is located in the Northern Sonoran Desert, which has a subtropical desert climate with hot summers and mostly mild winters. Average rainfall is less than three inches per year, most of which occurs in the winter. However, summer storms can be significant in some years. Clear and sunny conditions typically prevail. The region receives 85 to 90 percent of possible sunshine each year, the highest value in the United States. Winter temperatures are mild, but summer temperatures are very hot, with more than 100 days over 100 degrees Fahrenheit (deg. F, °F) each year in the Imperial Valley (CDWR, 2005, Volume 3, Ch 11, p 11-1). IID's service area is characterized by hot, dry summers. The average annual air temperature is 72 degrees Fahrenheit, and frost is rare. Rainfall averages less than three (3) inches/year, with most rainfall occurring in brief but intense events. The majority of rainfall occurs from November through March. Summer thunderstorms occur periodically, but, cloud cover is rare.

[10] Imperial Irrigation District website.

Table 3-1. Imperial Valley Climate Characteristics

Climate Characteristic	Annual Value
Average Precipitation (93-year record)	2.86 inches (In)
Minimum Temperature, Jan 1937	16.0 deg. F
Average Min Temp, 1914 –2006	29.0 deg. F
Maximum Temperature, July 1995	121.0 deg. F
Average Max Temp, 1914 –2006	115.2 deg. F

Source: IID Imperial Station Record; Imperial Irrigation District, 2007 Water Conservation Plan.
Imperial Irrigation District. Resources Planning and Management Section. October 2008

Table 3-2. Monthly Climate Summary – 30-Year Average (1977 – 2006)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Max Temp (°F)	80	84	91	99	105	112	114	113	110	101	89	78	98.0
Min Temp (°F)	5	37	42	47	54	60	68	699	62	51	39	33	99.8
Avg Temp (°F)	57	60	65	72	78	86	92	92	87	76	64	56	73.8
Avg Rainfall (In)	.51	.49	.40	.06	.04	.00	.11	.37	.26	.29	.19	.43	3.15

Source: IID Imperial Station Record; Imperial Irrigation District, 2007 Water Conservation Plan.
Imperial Irrigation District. Resources Planning and Management Section. October 2008

3.2 Physical Components and Infrastructure

Imperial County extends over 4,597 square miles, bordering Mexico to the south, Riverside County to the north, San Diego County on the west, and the State of Arizona on the east. The terrain varies from 235 feet below sea level at the Salton Sea to 4,548 feet at Blue Angel Peak.

3.2.1 Watersheds

DWR divides the state into 10 hydrologic regions corresponding to the state's major water drainage basins. Imperial Valley is located in the Colorado River Hydrologic Region. Figure 2-1, presented in the Introduction, shows the boundary of the Colorado River Hydrologic Region, and the relation to other Southern California features.

Despite its dry climate, the Colorado River Hydrologic Region contains some substantial surface water bodies, including the Colorado River and the Salton Sea. Figure 2-3 presents more localized hydrologic features including the groundwater basin boundaries and the surface water divide for the south Salton Sea watershed, which includes the New and Alamo rivers and extends into the Mexico border.[11]

[11] Imperial County, 2007. *Flood Management Plan.* February, 2007.

3.2.2 IID Water Delivery System

IID's delivery system begins at Imperial Dam where Colorado River water is diverted into IID's desilting basins at Senator's Wash. After being desilted, the water is conveyed by gravity through the 80-mile-long All-American Canal. The All-American Canal discharges water to several turnouts, including the Coachella Canal, the East Highline, Central Main, and Westside Main. East Highline Canal, an unlined 49-mile canal, serves the eastern part and a portion of the central part of the IID water service area. The canal roughly follows the northeastern boundary of the IID water service area and conveys irrigation water to agricultural fields via a series of east-to-west laterals. The Central Main Canal connects to the All-American Canal just north of Calexico and serves most of the central part of the IID water service area. The Westside Main Canal joins the All-American Canal near the western edge of the IID water service area and serves the western portion of the IID water service area. These three main canals serve as the main arteries of IID's water delivery system, which consists of approximately 1,667 miles of canals and laterals that distribute untreated surface water for irrigation to over 6,000 farm delivery gates and for non-potable use to rural service pipes and small parcels, and to all other users within the IID water service area.

While constrained by the QSA/Transfer Agreements, delivery of Colorado River water to users in the IID water service area is driven by user demand. Agricultural demand varies throughout the year and from year to year in response to a combination of influences, including changes in climate and local rainfall, crop cycles, crop prices, and government crop programs. IID delivers water 24/7, 365 days a year, with demand typically being highest in April, and remaining fairly high until August, after which it starts to decline. This period of highest use is the driest and hottest time of the year in the Imperial Valley. MCI demand is fairly constant throughout the year, but it is expected to grow as economic opportunities arise and come to fruition.

3.2.3 IID Drainage System

IID's drainage system includes a network of 1,456 miles of open and closed (pipeline) drains, 750 surface and subsurface drainage pumps, thousands of miles of subsurface drains (tile) and an associated collection of pipelines and water recovery systems. Water entering the drainage system can originate from the following sources:

- System seepage (i.e., water that has seeped from canals and laterals; this is intercepted by IID drains)[12]
- Operational spill (unused water that has traveled through the delivery system to ensure full demand is met; this is discharged to IID drains)[13]
- On-farm tailwater runoff (i.e., surface water runoff from the end of an irrigated field when total water applied exceeds the soil infiltration rate)

[12] IID has seepage recovery systems along the All-American Canal and the East Highline Canal.

[13] IID has three lateral interceptor systems and a portion of the Westside Main Canal (serving around 100,000 acres) where such water is collected and delivered to other users; this is called Operational Discharge.

- On-farm tilewater (i.e., water passing the crop root zone that normally enters a tile drain, also referred to as leach water)
- Storm water runoff
- Groundwater (i.e., intercepted groundwater that has moved into the drains from the deeper aquifer near the east boundary of the irrigated area)[14]

3.2.4 Drinking Water Systems

Ten communities in the Imperial Region receive water for domestic purposes from IID: Calexico, Holtville, El Centro, Imperial, Brawley, Westmorland, Calipatria, Niland, Seeley, and Heber. IID also delivers water to the Naval Air Facility. Each city and unincorporated community has its own facilities for treating and distributing water to its users. Five other districts supply water to areas in Imperial County that are outside of IID. Of these, Palos Verdes Community Water District, Winterhaven Water District, and CVWD distribute treated water for domestic use.

As noted earlier, to comply with U.S. Environmental Protection Agency (EPA) requirements and avoid termination of canal water service, residents in the IID service area who do not receive treated water service must obtain alternative water service for drinking and cooking from a state-approved provider. To avoid penalties that could exceed $25,000 a day, IID strictly enforces this rule. IID tracks nearly 4,000 raw water service accounts required by the California Department of Public Health (CDPH) to have alternate drinking water service.

In 1983, the California Legislature enacted the Urban Water Management Planning Act (Water Code Sections 10610 - 10656). The Act states that a city is required to create an UWMP when the city services more than 3,000 connections or if the city delivers more than 3,000 acre-feet of water per year. In the Imperial Region, cities that meet the criteria for an UWMP and have submitted them for review to DWR are: El Centro, Calexico, Brawley, and Imperial. Communities that do not yet need to prepare an UWMP are Holtville, Calipatria, Westmorland, Heber, Seeley, and Niland.

3.2.5 Wastewater Systems

Table 3-3 lists the Imperial County wastewater treatment plants, providing information on owner, location, capacity, and related data. Based on the information currently available, no community in the Imperial County is recycling municipal water. Each community that has adopted an UWMP (Imperial, Brawley, Calexico, and El Centro), states that it currently does not have plans to begin recycling municipal water, most specifically citing the lack of cost-effectiveness for this strategy.

Imperial County communities have stated that consideration for implementing any kind of reclaimed water program has been limited due to the concerns arising from the terms of the QSA/Transfer Agreements about reducing inflows to the Salton Sea. Treated wastewater

[14] CH2MHill. 2008. *Draft – Supplement to the IID Water Conservation and Transfer Project EIR/IES for the Managed Marsh Complex.* January 2008.

from facilities within IID ultimately discharges to the Salton Sea (via drains that discharge to the Alamo and New River), along with water from CVWD and other sources. Within the Imperial Valley, these inflows support habitats on the rivers and the Salton Sea depends on such inflows for several reasons, discussed below.

Imperial Valley inflow, though salty, provides a constant source of water, which in volume has typically equaled the Sea's evaporation. Therefore, these flows have maintained the Sea's level and helped to reduce the effect of evaporation, which causes the salinity levels in the Sea to concentrate (at present, the Sea is about 50 percent more saline than the Pacific Ocean). As noted in the section on Recreation, the Sea serves as a critical link on the Pacific Flyway for bird migration.

Under the terms of the QSA/Transfer Agreements, IID and its water users are required to maintain "normal" flow to the Sea through 2018. This is being achieved through IID's Fallowing Program and through taking care that no QSA/Transfer Agreements or other activity impacts this flow. Nevertheless, flows through the New River from Mexico have reduced due to water being treated and reused in Mexico. Inflow from the IID water service area is expected to decrease greatly starting in 2019, when, in accord with the terms of the QSA/Transfer Agreements, all transferred water will be from conservation savings. Inflow from Mexico is also expected to decrease further as Mexicali continues to implement its reclaimed water program.[15]

Table 3-3. Wastewater Effluent in Imperial County

Discharge sources	Current Conditions				
	Plant Capacity [AFY]	Average Flow [AFY]	Treatment Level	TDS + (NPDES permit limits) [mg/L]	Discharge to (Discharge point / End of Drainage Path)
City of Brawley WWTP	6,608 +/^	3,920 +/^	Secondary +	4,500 max. daily, 4,000 avg. annual	New River + / Salton Sea
City of Calexico Municipal WWTP	4,816 +/^	3,024 ^		4,500 mean 7-day, 4,000 mean 30-day	New River / Salton Sea +
Calipatria WWTP	1,938 +/^	1,120 +/^		4,500 max. daily, 4,000 avg. annual	G Drain / Salton Sea via Alamo River +
El Centro Municipal WWTP	8,960 +/^	4,480 +/^	Secondary ^	4,500 mean 7-day, 4,000 mean 30-day	Central Main Drain / Salton Sea via Alamo River +
El Centro Generating Station	1,165 +			4,500 mean 7-day, 4,000 mean 30-day	Central Drain No. 5 / Salton Sea via Alamo River +
Gateway of the Americas WWTP	224 ^	205 ^			
Heber Geothermal Company, Heber	4,816 +			4,500 max. daily, 4,000 avg. annual	Strout Drain +
Heber PUD WWTP	907 ^	392 ^			
City of Holtville Municipal WWTP	952 ^	728 ^			Pear Drain/Salton Sea via Alamo River^
City of Imperial Water Pollution Control Plant	1,568 +/^	1,073 +/^	Tertiary ^	4,500 max. daily, 4,000 avg. annual	Dolson Drain / Salton Sea via Alamo River +
Second Imperial Geothermal Co., Heber	1,680 +			4,500 max. daily, 4,000 avg. annual	Beech Drain / Salton Sea via New River +
Niland WWTP	560 ^	258 ^			

[15] Salton Sea Authority Plan for Multi-Purpose Project July 2006 Draft for Board Review

Discharge sources	Current Conditions				
	Plant Capacity [AFY]	**Average Flow [AFY]**	**Treatment Level**	**TDS [+] (NPDES permit limits) [mg/L]**	**Discharge to (Discharge point / End of Drainage Path)**
Seeley County WWTP	224 [+/^]	95 [+/^]		4,500 max. daily, 4,000 avg. annual	New River [+] / Salton Sea
Westmorland WWTP	560 [^]	291 [^]		4,500 mean 7-day, 4,000 mean 30-day	Trifolium Drain No. 6 / Salton Sea via New River [+]
Totals	34,978	15,586	--	--	--

Note: Capacities and flows based on information in NPDES permits and Service Area Plans; therefore, the date of information varies.
+ From NPDES Permit
^ From Service Area Plan
*For total calculation, it was assumed that future plant capacity would remain the same for facilities where no information on future expansion has been found.

? Future average flows from Service Area Plan projections for 2020 except for El Centro Municipal WWTP and Heber PUD WWTP, which are for 2014.

Remarks:

City of Brawley WWTP
NPDES permit CA0104523 (Effective June 29, 2005 to June 29, 2010).
City of Brawley Final Service Area Plan, February 2007.
City of Calexico WWTP
NPDES permit CA7000009 (Effective 2004-2009).
City of Calexico Service Area Plan, May 31, 2006.
Calipatria WWTP
NPDES permit CA0105015 (Effective June 29, 2005 to June 29, 2010).
Final Calipatria Service Area Plan (CL1-04), November 2004.
El Centro Municipal WWTP
NPDES permit CA0104426 (Effective 2003-2008).
City of El Centro Service Area Plan, November 2005.
El Centro Generating Station
NPDES permit CA0104248 (Effective 2004-2009).
Gateway of the Americas WWTP
NPEDES permit CA7000015 referenced in SAP, unable to locate copy of permit at this time.
Gateway of the Americas Service Area Plan, December 2005.
Heber Geothermal Company, Heber
NPDES permit CA0104965 (Effective June 29, 2005 to June 29, 2010).

Heber PUD WWTP
Heber Public Utility District DRAFT Service Area Plan, June 2004.
Holtville WWTP
City of Holtville Final Service Area Plan/Municipal Service Review, October 2006.
NPDES permit CA 0104361 (Effective to June 21, 2011 identified, unable to locate copy of permit at this time
City of Imperial Water Pollution Control Plant
NPDES permit CA0104400 (Effective June 29, 2005 to June 29, 2010).
City of Imperial Service Area Plan, June 26, 2008.
Second Imperial Geothermal Company, Heber
NPDES permit CA7000003 (Effective June 29, 2005 to June 29, 2010).
Niland WWTP
Sanitation District Service Area Plan for Wastewater Facilities, February 2006.
Seeley County WWTP
NPDES permit CA0105023 (Effective 2002-2007).
Seeley County Water District Service Area Plan, Final July 10, 2003.
Westmorland WWTP
NPDES permit CA0105007 (Effective 2001-2006).
City of Westmorland Service Area Plan, March 3, 2005.

3.3 Geologic and Groundwater Setting

Because groundwater development is one of the water management strategies considered for the IID Plan, the geologic and groundwater setting is described. For a detailed description of the groundwater resources and discussion of the feasibility of developing these supplies please see Appendix B. The Imperial Valley and Coachella Valley are located in the Colorado Desert geomorphic province. The Colorado Desert is a low-lying barren desert basin, with portions of the area below mean sea level and runoff flowing to the Salton Sea. The province is a depressed block between active branches of alluvium-covered San Andreas Fault with the southern extension of the Mojave Desert to the east. It is characterized by the ancient beach lines and silt deposits of extinct Lake Cahuilla.[16] The Imperial Valley is characterized by a northwest to southeast trending valley bounded on the west by the Jacumba Mountains and on the east by the Chocolate Mountains.[17] Beyond the mountains to the west lies San Diego, California, and to the east beyond the Colorado River is southwestern Arizona. Much of the central portion of the Imperial Valley is below sea level, reaching nearly 230 feet below mean sea level (msl) at the Salton Sea.

Groundwater basins within the Imperial Region include portions of the Coyote Wells Valley Basin, Borrego Valley Basin, Ocotillo-Clark Valley Basin, West Salton Sea Basin, and Ogilby Valley Basin, and all of the Imperial Valley Basin, East Salton Basin, and East Amos Valley Basin, which in all total about 2,800 square miles[18] (Figure 2-3). The major surface water body within the Imperial Valley is the Salton Sea, and the Imperial Valley basins drain internally to the Salton Sea via the New River and Alamo River. Groundwater bearing materials are generally younger and older alluvial sediments derived from the erosion of the surrounding mountain ranges.

The area is situated on and near extensive fault systems, generally trending northwest to southeast. Large nearby faults include the San Andreas, Superstition Hills, and San Jacinto Faults[19] (Figure 2-3). The faulting influenced groundwater movement. More small to moderate earthquakes have occurred in the Imperial Valley than along any other section of the San Andreas Fault system. Typically, some part of Imperial County is affected by a minor earthquake (less than magnitude 3.5) every few months. Every five years, the county might experience a moderately damaging event (magnitude of 5.5 or greater). At least once every 50 years, there is likely to be a major earthquake (magnitude of 6.8 or greater). Microseismicity (magnitude of less than 2.0) occurs almost continuously in the county, often with dozens and sometimes hundreds of events per day (County of Imperial, 2006).

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[16] California Geological Survey, 2002. Note 36. http://www.consrv.ca.gov

[17] Oakeshott, Gordon B., 1978. *California's Changing Landscapes: A Guide to the Geology of the State, Second Edition.* McGraw-Hill Book Co., Inc., New York.

[18] California DWR, 1975. *California's Groundwater, Bulletin118* September 1975

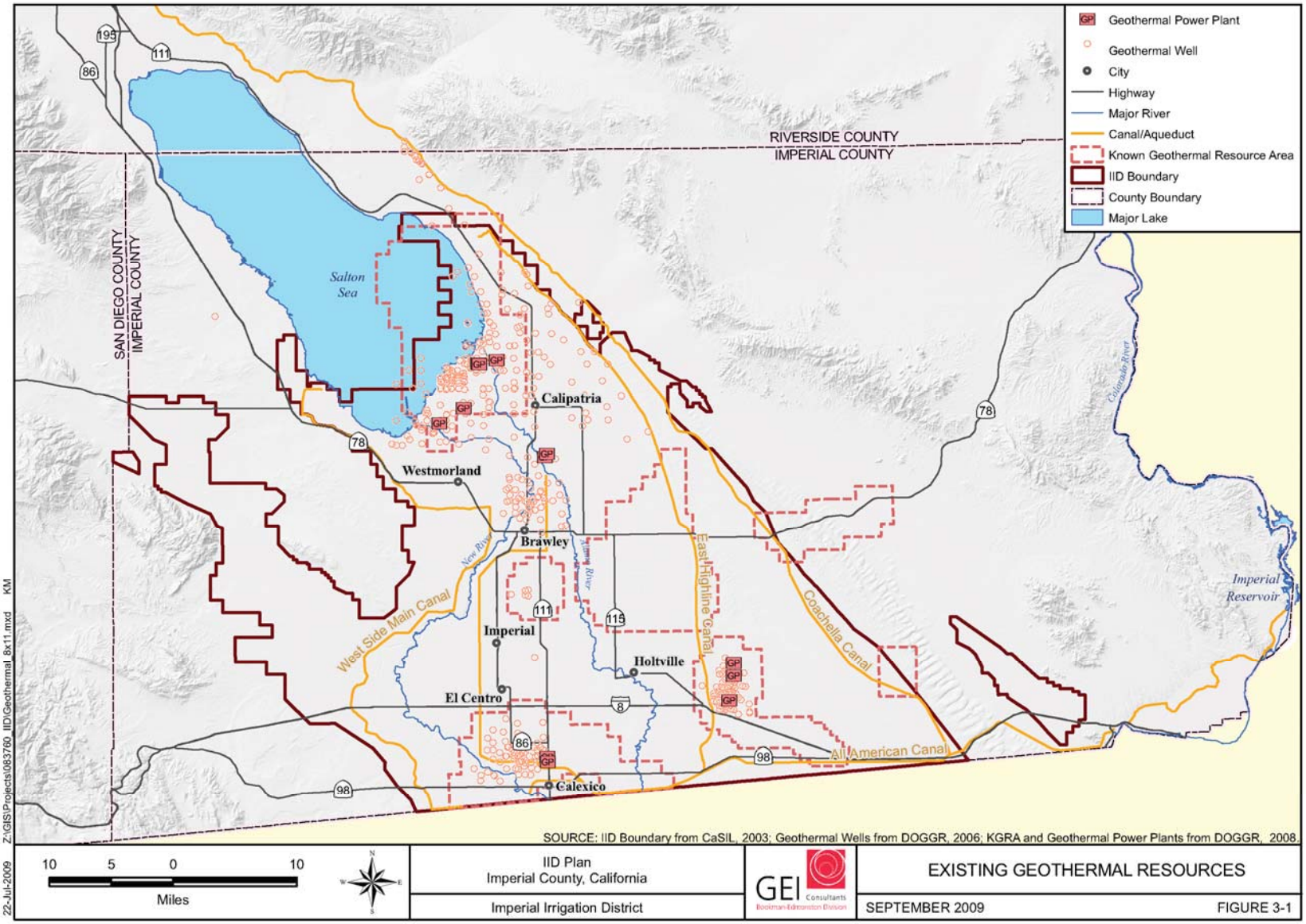
[19] Hart, Earl W., and Bryant, William A., 1999. *Fault-Rupture Hazard Zones in California – Alquist-Priolo Earthquake Fault Zoning Act with Index to Earthquake Fault Zones Maps*. California Department of Conservation, Division of Mines and Geology, Special Publication 42, Sacramento.

3.4 Other Geologic Resources

Geothermal resources will represent a large component of the future water demand. The geological resources that lend to the development of this resource are described. Geothermal resource areas and sources of sand and gravel are generally located along the southern border of the Salton Sea; other resources are found in the surrounding hills. As shown in Figure 2-3, there are seven known geothermal resource areas (KGRAs) in the Imperial Valley: the Dunes KGRA, East Mesa KGRA, Glamis KGRA, Heber KGRA, East Brawley KGRA, South Brawley KGRA, and Salton Sea KGRA. Ensuring that there is adequate water supply for existing and geothermal power plants and other power production operations is a key issue for the IID Plan. The Imperial County General Plan has a geothermal resources element, which anticipated future water demands for economic development of the region's geothermal resources and for developing other sustainable power generation operations, primarily solar and wind.

Other geologic resources in the IID water service area include mineral resources (rock and stone, sand, gravel, clay, and gypsum), metals (gold, silver, nickel, and lead), radioactive elements, and geothermal areas. In the Imperial Valley sand and gravel are significant economic resources. Most of these materials are derived from shoreline deposits from ancient Lake Cahuilla. Additional sources of lower quality sand and gravel are found in alluvial fan deposits.

Figure 3-1. Geothermal Resource Areas and Existing Plants



3.5 Land Use and Water

This section briefly discusses land use in the IID area since current and proposed future land use drives the water demands. Future land use maps were digitized from information contained in the General Plans for Imperial County of the incorporated cities and as discussed in Chapter 5, these maps were used as the basis for forecasting future water demand. The intent is to be as consistent as possible with the prevailing land use plans and to integrate the forecast from the separate land use agencies.

3.5.1 Agricultural

Agricultural land use dominates the IID service area. Over 120 types of crops are grown in the Imperial Valley, with a total area of approximately 520,000 acres receiving water.[20] Currently, around 430,000 acres are in cultivation, with some 40,000 acres being fallowed, and the remainder in MCI or other use. Around 65,000 acres of the cultivated area are double-cropped.[21] The total gross agricultural production value in 2008 was $1,684,522,000. Values in all the commodity groups either increased or remained relatively stable over the prior year. Crops grown on this acreage consume around 1.75 MAF per year of water (5-year average estimated crop ET, 2000 to 2004).[22] Additional water is needed for leaching and other agricultural practices. Agriculture has the highest water consumptive use in Imperial County. Crop water requirements vary greatly with the type of crop, soil type, and weather. The EDP includes an apportionment of 5.25 acre-feet per acre during a year of supply and demand imbalance. Historically, IID has delivered up to 2.8 MAF per year of water primarily for agricultural purposes to its customers in Imperial County.

3.5.2 Municipal

Domestic water uses account for approximately 3 percent of Imperial Region total water use, but only around 2 percent of Imperial County total water use. Ten Imperial Valley communities receive water for domestic purposes from IID: Calexico, Holtville, El Centro, Imperial, Brawley, Westmorland, Calipatria, Niland, Seeley, and Heber (Figure 2-2). Water is also delivered to the Naval Air Facility (NAF) from IID's Elder Lateral Canal. From June 1, 1986, to October 23, 1991, the NAF used approximately 3,714 AF of water, with a daily average water use of 2.0 acre-feet.[23] As listed below, each city and unincorporated community served by IID have their own facilities for water treatment and distribution to the users in their jurisdiction. In addition, as noted previously, IID tracks nearly 4,000 raw water service accounts that are required by the CDPH to have alternate drinking water service,

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[20] See Imperial Agricultural Commissioners Reports http://imperialcounty.net/ag/Crop%20&%20Livestock%20Reports/archives_1907-2007.htm. Also see Ag Census Data for Imperial County at: http://www.agcensus.usda.gov/Publications/2007/Online_Highlights/County_Profiles/California/cp06025.pdf

[21] IID website. Annual Inventory of Areas Receiving Water & Crop Report

[22] IID. *Final IID 2007 Water Conservation Plan*, p. 30

[23] Imperial County. *General Plan, Water Element.* Planning/Building Department.

maintains a small-acreage pipe and drinking water database, and provides an annual compliance update to CDPH.

Not all water utilized in the Imperial County is delivered by IID. Groundwater of mixed quality can be found on the eastern and western sides of Imperial County, particularly in the Ocotillo-Coyote Wells Groundwater Basin. The safe yield of these formations is limited due to the desert climate and minimal natural recharge. Imperial region communities of Ocotillo, Nomirage, and Yuha Estates rely on groundwater from the Ocotillo-Coyote Wells groundwater basin. The County of Imperial commissioned a study of the groundwater basin by the USGS, known as the Skrivan Report, which was released in November 1977. The study reported an overdraft of 500 AF per year and warned of possible saline intrusion. The County also employed Dr. David Huntley, a geohydrology consultant, to review the report and the basin. He projects an even greater overdraft of 1,608 AF per year to 2,410 AF per year and saline intrusion.[24] Future growth in Ocotillo/Nomirage is, therefore, expected to consist primarily of infill on existing lots, rather than expansion of community boundaries, except at very low densities.

The East Mesa Unit and the West Mesa Unit, which are within the Imperial Valley boundaries, also have wells that are used to extract water from the groundwater basin. East Mesa Unit has four wells that are approximately six hundred feet deep. Scattered residential development is found in the East Mesa Unit along with some mines.[25] As mentioned earlier, some geothermal developments in the East Mesa Unit may have potential to cause water pollution.

The West Mesa Unit is primarily land that is owned or regulated by the Bureau of Land Management. A portion of the land in the West Mesa Unit is used by the NAF for bombing practices and exercises. In the West Mesa, groundwater is also pumped for industrial use at the U.S. Gypsum plant at Plaster City. U.S. Gypsum reportedly has constructed six production wells in this area, three of which are inactive. Water from the remaining three wells is transported to Plaster City via pipeline. The quality of the groundwater pumped in this area of the Basin is reportedly good.

Outside of the Imperial Valley, CVWD boundaries encompass nearly 640,000 acres, most of which are located in Riverside County; however, boundaries extend into Imperial and San Diego counties. In total, CVWD provides drinking water to more than 100,000 homes and businesses in Riverside and Imperial Counties, including the communities of Salton City and the Hot Mineral Spa/Bombay Beach. This water is from wells drilled into an aquifer with capacity estimated at 39.2 MAF. Nearly as many residents receive their sanitation services from the district; 6.5 billion gallons of sewage are treated yearly. Whenever and wherever possible, this wastewater is treated and recycled for golf courses and other outdoor irrigation.

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[24] David Huntley, Ph.D. 1979. "The Magnitude and Potential Effect of Declining Ground Water Elevations in the Ocotillo-Coyote Wells Basin"

[25] Imperial County. *General Plan, Water Element.* Planning/Building Department.

Recycled water supplements imported water for use in recharging groundwater tables, a vital program to ensure adequate supplies of water for future generations.[13]

3.5.3 Industrial

Extensive geothermal resources have been identified in several areas of the Imperial Valley. These are identified as KGRAs, and are shown on Figure 2-3. Power plants are currently generating electricity from the hot water resources in the Salton Sea, the Heber KGRA, and the East Mesa KGRA. The 15 existing power plants can generate about 300 megawatts, and it is estimated that the Imperial Valley resource could support approximately 2,750 megawatts of power production on a sustained basis.

Geothermal power plants extract hot water through large wells drilled from 2,000 to 12,000 feet below the surface. The hot water is either allowed to boil to produce steam or passed through heat exchangers. Return flows of hot water from both processes are injected back into the geothermal reservoirs through separate wells. Problems of contaminating the surface waters or nearby non-geothermal groundwater can arise if return flows are not injected to a significant depth; if they are injected under too much pressure; if they are injected into faults or fractures that connect to the surface; or if the injection wells leak. The potential for surface spills exists from pipeline failures or well blowouts.

3.5.4 Recreational

Some of the waters in the Imperial Valley provide recreational activity. The Salton Sea was once a popular recreation and marine sport fishery area. Several commercial marinas, residential recreational communities, and public parks are now located around the sea.

Within the IID water service area are a number of recreational water bodies and refuge areas, including Ramer Lake, Sunbeam Lake, Wister Wildlife Refuge, and a number of duck club areas. These water bodies receive IID lateral spill and/or drain water. Water-based recreational activities are not allowed in IID reservoirs, irrigation canals or drains; however, in most reservoirs and all main and lateral canals, individuals do fish for species such as channel catfish, bass and sunfish.[26]

Weist Lake County Park, located along the Alamo River near Brawley, includes facilities for boating, fishing and waterfowl hunting. Also located within the region are the Sonny Bono Salton Sea National Wildlife Refuge and the Imperial Wildlife Area.[27, 28]

The Sonny Bono Salton Sea National Wildlife Refuge, managed by the US Fish and Wildlife Service, was designed to reduce waterfowl depredation in adjacent croplands. Management practices include an intensive farming program that involves cooperative farmers. Crops are

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[26] IID website; and Salton Sea Ecosystem Restoration Draft PEIR Chapter 13: Recreation http://www.saltonsea.water.ca.gov/PEIR/draft/Chapter_13_Recreation.pdf

[27] Text copied/adapted from USFWS: http://www.fws.gov/Refuges/profiles/index.cfm?id=81631

[28] Text copied/adapted from CDFG: http://www.dfg.ca.gov/lands/articles/imperial01.html

grown for waterfowl consumption during the winter. The refuge winters up to 30,000 snow, Ross's, and Canada geese, and 60,000 ducks from November through February. Marsh birds and shorebirds account for more than 6,000,000 use-days each year. Endangered species observed on the refuge include the southern bald eagle, peregrine falcon, California brown pelican, Yuma clapper rail, and desert pupfish.

A significant Yuma clapper rail population nests on the refuge. Sensitive species using the refuge include the fulvous whistling-duck, wood stork, long-billed curlew, mountain plover, western snowy plover, burrowing owl, and white-faced ibis. The refuge manipulates water levels in ponds to provide habitat for shorebirds and waterfowl.

The Imperial Wildlife Area is made up of three units owned by California Department of Fish and Game. The Wister (5,423 acres) and Hazard (535 acres) units' areas are located along the southern shoreline of the Salton Sea. They consist of upland habitat and managed wetlands, primarily to provide waterfowl forage. The wildlife areas provide hunting, fishing, and recreational uses. Public use information of the unit has been recorded since 1961, with an average of around 15,000 visits per year.[24]

The Wister Unit is a long, narrow sliver sandwiched between the desert and the Salton Sea on a gentle slope, where 189 miles of levees and 27 miles of canals form terraces between seasonally flooded ponds and fields. Fresh Colorado River water for the ponds is pumped to Wister from out of the Coachella Canal. The Hazard Unit, which abuts the Northern portion of the Sonny Bono Salton Sea National Wildlife Refuge, is south and east of the Wister Unit.

The Salton Sea forms the entire western boundary of the Wister and Hazard Units in a line that shifts as agricultural runoff changes. Salts in the runoff account for ever-increasing salinity of the sea. Under the QSA/Transfer Agreements, IID is to retain what would have been normal flow to the sea through 2018. After that IID expects to reduce flows, causing the Salton Sea to recede and saline concentrations to increase more rapidly. This makes the wildlife area's fresh water ponds bordering the Sea even more crucial for wildlife. Most species must have sources of fresh water to survive.

The Finney-Ramer Unit (2,047 acres) is located south of the Salton Sea near Calipatria and the Alamo River. It was originally established by the USBR as a waterfowl refuge and includes four lakes. All of the Imperial Wildlife Area units receive water that would otherwise be IID lateral or canal spill or drain water. More than 90 percent of the Wister and Hazard units are flooded in the fall; fresh greenery fringes and carpets the ponds.

Imperial Wildlife Area is a crossroads for birds from the north and the Pacific Ocean and some unusual varieties from the south. Imperial Region probably has one of the highest species counts of all wildlife areas - nearly 400 different species can be found here. This human-made marsh provides essential habitat for migratory birds navigating the Pacific Flyway.

There are numerous opportunities for nature viewing, photographing, hiking, and bird watching. Activities for visitors on the Wister, Hazard and Finney-Ramer units include

hunting for waterfowl, dove, coots, moorhens, snipe, pheasant, quail, raccoon, and rabbit in season; and fishing for catfish, largemouth bass, and bluegill on the wildlife area, and corvina, sago, and croaker on the Salton Sea.[25]

Mudpots underscore geothermal activity in the Imperial Region Earthquake fault lines and are marked by a series of bubbling pools of mud. This unusual effervescence is produced by carbon dioxide, which rises from below the water table. As the escaping gas is vented, it mixes with surface water and soil to produce a cool, bubbling mixture of mud. Imperial Wildlife Area has the largest concentration of mudpots in the entire Imperial Region.[24]

The Salton Sea International Bird Festival, which is held each February, brings in several hundred bird watchers from throughout the country. The festival consists of tours, lectures, and exhibits, and generates considerable economic activity.

3.6 Flood Protection Measures

Imperial Valley structural flood protection measures include a dike system that provides flood protection from 100- to 500-year events for areas adjacent to the Salton Sea from 100- and 500-year floods. Breakwaters at various locations near the shore of the Salton Sea prevent damage from wave action.

Several of the washes along the western shore of the Salton Sea were channelized when that area was developed. Many of these washes contain the 100-year flood within their channel banks. Non-structural measures are being utilized to aid in the prevention of future flood damage. These are in the form of land use regulations adopted from the Code of Federal Regulations that control building within areas that have a high risk of flooding. Imperial County has an ordinance that requires a permit for any construction near Salton Sea below the minus 220-foot contour.

Per the U.S. Army Corps of Engineers Reconnaissance Report: Flood Control and Related Purposes, September 1989, the IID drainage system largely consists of earthen open channels paralleling irrigation canals on the downstream side of the fields. The drains collect excess surface flows from the agricultural fields (tailwater), subsurface flows from a system of tile drains underlying the fields (tilewater), and operational spill from the canals and laterals. The entire system was designed strictly to drain excess irrigation water; consequently, the system has no more than incidental capacity to intercept and convey storm runoff from the surrounding desert, mountains, or the urban areas in the Imperial Valley.[29]

[29] Imperial County, 2007. *Flood Management Plan.* February 2007.

4 Proposed Regional Boundary

This section is included to provide some context between the IID Plan area (boundary of Imperial Irrigation District) and a proposed Imperial Region boundary that may be used to develop the Imperial Region IRWMP.

4.1 Basis for Imperial Region Boundary

The geographic coverage for the IID Plan is the IID service area. The proposed Imperial Region would extend beyond the IID boundary as shown in Figure 4-1. This section describes the geographic extent and basis for the recommended Imperial Region, which would be the subject of the proposed Imperial Region IRWMP. The basis for formation of the Imperial Region was

- Administrative and jurisdictional boundaries and stakeholders
- Hydrologic features
- IID Plan goals and objectives
- Selection of the best suited area to resolve the conflicts identified

Figure 2-1 presented in Chapter 2 showed the project location and Imperial Region boundary in relation to the proposed region's Southern California neighbors. The area selected for Imperial Region lies completely with DWR's Colorado River Hydrologic Region.[30] It is also entirely within the SWRCB Region 7, Colorado River Basin Region.[31]

Figure 2-2, Jurisdictional and Administrative Features, showed city and county boundaries, public land ownership, water district boundaries, tribal areas, and other appropriate administrative boundaries. Figure 2-3, Hydrologic Features, presented DWR Bulletin 118 groundwater basins boundaries; geologic fault lines, which influence groundwater flow and storage areas; watershed divides; water delivery canal infrastructure; and other physical and topographic features.

DWR has defined the criteria for establishing a region for purposes of preparing an IRWMP. IID prepared the Regional Assessment Process document to obtain DWR's approval for the proposed Imperial Region. IID has not heard whether the proposed Imperial Region has been accepted by DWR. The proposed Imperial Region will help IID and the local land use agencies to better communicate, coordinate, and cooperate when making water and land use decisions. The basis for selection of the boundaries was also made for the reasons below:

[30] DWR website: DWR Bulletin 160-05, http://www.waterplan.water.ca.gov/previous/cwpu2005/index.cfm

[31] CAEPA website: http://www.waterboards.ca.gov/coloradoriver/

- Imperial Regional Water Management Group (RWMG) members already have experience working together to address complex issues, so they will be well equipped to develop an IRWMP.

- Urban and rural development of the Imperial Valley south of the Salton Sea tie together the powers and authorities of the agencies that are anticipated to support development of the Imperial IRWMP, including Imperial County and the cities.

- Primary conflicts within the region related to future land use and new water demands are intensified by issues surrounding the apportionment of IID's water supply and competing uses within the Imperial Valley.

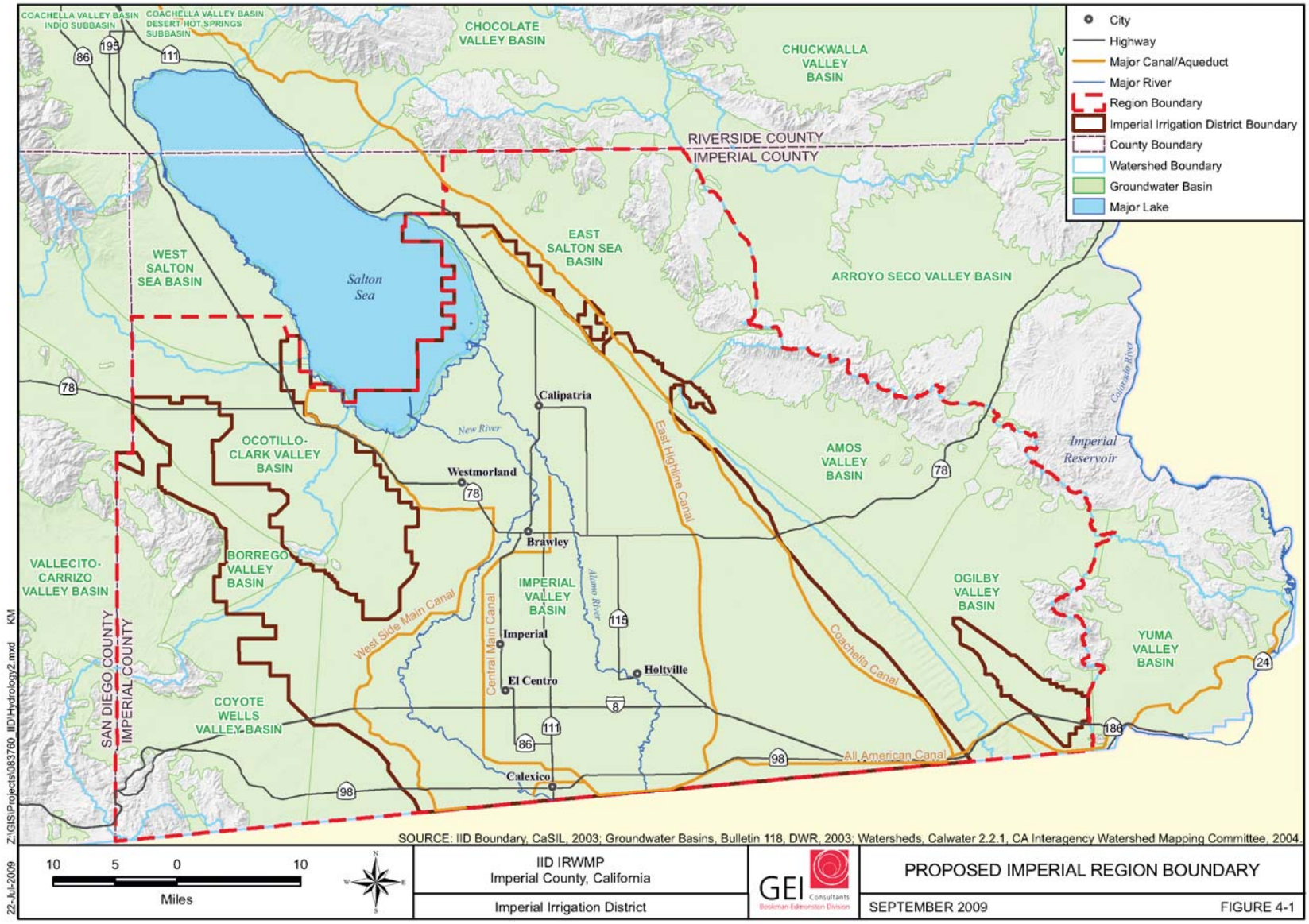
- Imperial Region presents opportunities for recycled and reclaimed water use because of the geographic proximity of its MCI users.

- Imperial Region has prospects for integrated groundwater and surface water management and has unique and distinct groundwater conditions, issues, and aquifers.

In developing the proposed Imperial IRWMP boundary (boundary), a number of meetings and conference calls were held to evaluate both physical and institutional features. The proposed Imperial Region boundary encompasses the service areas of multiple local agencies, as shown in Figure 4-1, and will maximize opportunities to integrate water management activities related to natural and man-made water systems, including water supply reliability, water quality, environmental stewardship, and flood management. The boundaries were established to be inclusive of a larger area where practical.

In the Imperial Region there are no overlapping areas or areas not covered (voids), nor are there any known voids immediately outside the Imperial Region boundary. To the south, the boundary is based on the international border with the Republic of Mexico. To the west, the boundary follows the Imperial County line up from Mexico to the point where it meets with the CVWD boundary; it then follows the southern CVWD boundary going east to the point where it abuts the northern IID boundary. The Imperial Region boundary then continues to follow the IID boundary east under the Salton Sea to where the IID boundary again abuts the CVWD boundary. It then follows the CVWD boundary north to a point where a line was extended north to the Imperial County line, where it extends east along the county line until it reaches the eastern boundary of the East Salton Sea Basin. The eastern boundaries of the East Salton Sea Basin, Amos Valley Basin, and Ogilby Valley Basin watersheds form the remainder of the Imperial Region boundary to the east, following the Ogilby Valley Basin watershed divide south to where it meets the Yuma Valley Basin. The Yuma Valley Basin boundary is then followed down to the Mexican Border. As shown on Figure 4-1, much of the land within the Imperial Region is under Federal control, and these lands are managed under existing plans prepared pursuant to Federal laws.

Figure 4-1. Imperial Region Boundary



4.2 Relationship and Coordination with other IRWMPs

By virtue of the QSA/Transfer Agreements and reliance on the Colorado River, the Imperial Region is interrelated and interdependent with the DWR South Coast Hydrologic Region (SDCWA, MWD) and other IRWM regions in the Colorado River Hydrologic Region in Southern California. Coordinating with adjacent regional planning efforts is particularly important in the Imperial Region because of the linkages through the QSA/Transfer Agreements and because other plans in the area have a bearing on the Salton Sea and/or the Colorado River. There is a total of $36 million of bond funding available for the Colorado River Region. The other Colorado River Regions must also have an IRWMP to compete for the available funding.

Coordination on Colorado River issues occurs through other existing management structures such as the Colorado River Board of California, the Colorado River Water Users Association, and various USBR initiatives. Local cooperation on Salton Sea issues is primarily through the Salton Sea Authority. These have an influence on the Imperial Region IRWMP and are part of the baseline conditions.

Despite this connection and the desire for interregional cooperation, unique and distinct water management issues separate the Imperial Region from the South Coast hydrologic region and from other integrated planning efforts within the DWR Colorado Hydrologic Region.

The South Coast hydrologic region is not geographically proximate to the Imperial Region; is primarily urban, with a complex array of water agencies, multiple counties, and cities; and is reliant on MWD for most of its main Colorado River water supply and for delivery of its IID/SDCWA Transfer of Colorado River water, with multiple additional sources of water (groundwater, local surface water, and imported State Water Project (SWP)). The South Coast is also socioeconomically very different from the Imperial Region.

The draft 2009 California Water Plan update references the Colorado River Water Delivery Agreement: Federal QSA[7] as an integrated regional planning effort along with other efforts in the Colorado River Hydrologic Region, including:

- Coachella Valley RWMG
- Mojave Water Agency IRWM
- Salton Sea Water Authority
- Borrego Water District

The boundary with CVWD was used since CVWD is part of the Coachella Valley Regional Water Management Group, which along with other local water districts, Riverside County, the local cities, and stakeholders is preparing its own IRWMP. The Coachella Valley Region is unique and distinctly different from the Imperial Region: the Coachella Valley RWMG has its own water distribution facilities, Colorado River apportionment, and State Water Project allocation. In addition, the region is more reliant on groundwater, has problems of overdraft, and is mostly urban. Within CVWD, the crop mix and delivery system are tangibly different

from those of IID. IID and CVWD have been in contact regarding the congruent boundaries of the two regions and are communicating on how they will work together in the future as the two plans are developed (Attachment B).

With signing of the QSA/Transfer Agreements, historical conflicts between CVWD and IID over Colorado River water have been largely resolved, and it is appropriate that IID work within the Imperial Region to address the localized water management issues, conflicts, and opportunities facing the Imperial Region.

The Mojave IRWM effort is well north of the Imperial Region, being more geographically proximate to the Coachella Valley Region.

The Borrego Water District is located in San Diego County, is not geographically proximate to the Imperial Region, and has its own unique water resource, economic, political, social, and technical issues.

It is the intent of the Imperial RWMG to coordinate with other regional planning efforts on an annual or as-needed basis to discuss water policy, implementation projects, monitoring and data management, and/or other water management issues. The Imperial RWMG plans to effectively integrate with other IRWMPs in Coachella Valley by having representatives attend meetings, and by providing agendas, reports, and minutes to other organizations and actively collaborating with other organizations on Imperial Region projects and issues.

4.3 Relation to other Plans in the Lower Colorado River Basin

The Imperial IRWMP will seek to be consistent with and integrate key elements of the other land use, water supply, and environmental management plans that currently exist. The planning process will include review and consideration of the goals and objectives of the existing plans to evaluate how the Imperial IRWMP is influenced by, and could have an influence on, these other plans. This includes, at a minimum, the following:

- QSA/Transfer Agreements
- IID Definite Plan
- IID EDP
- City UWMPs
- City General Plans
- Imperial County General Plan
- Salton Sea Restoration Plan
- Water Quality Control Plan for the RWQCB, Colorado River Basin Region
- IID Water Transfer Agreement Habitat Conservation Plan
- Lower Colorado River Multispecies Habitat Conservation Plan

Other key plans will be identified as the process moves forward.