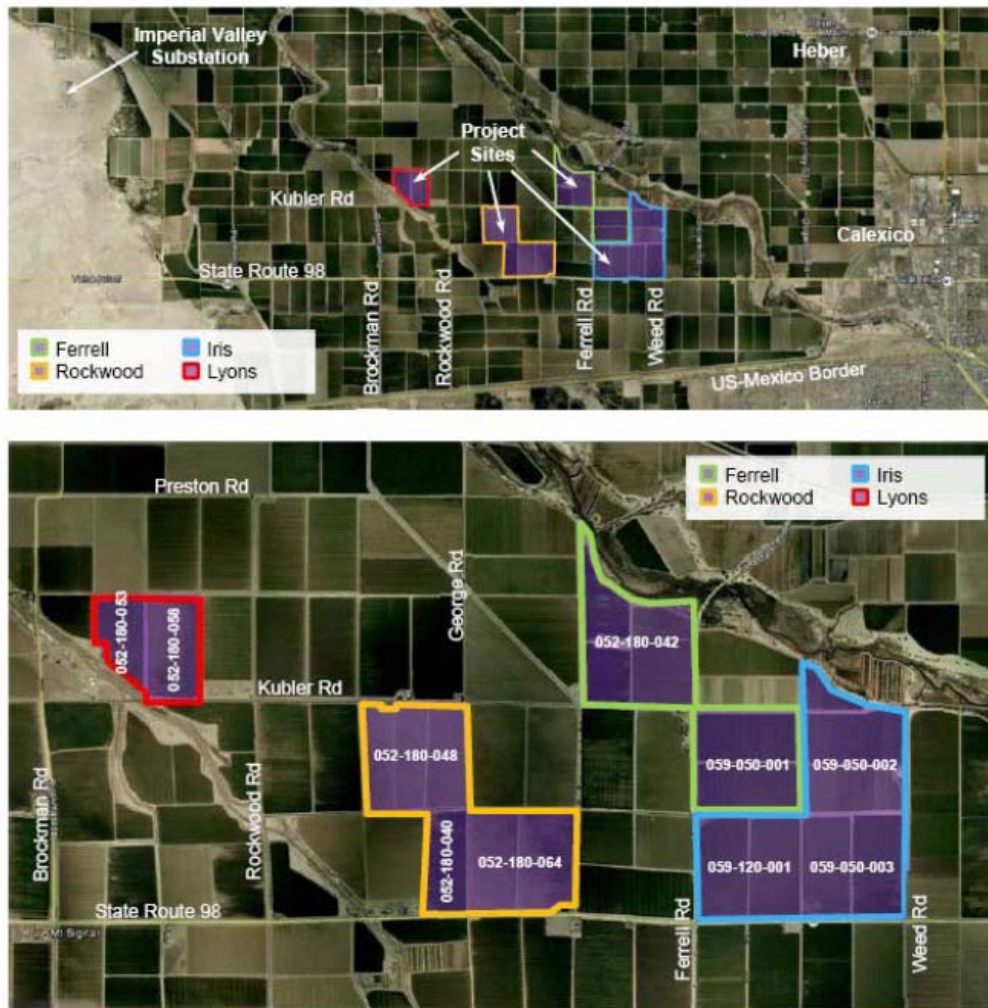


**IRIS Cluster
SB 610 - Water Supply Assessment
Volume 1**



Prepared For:

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Appendices

Appendix A: IID Interim Water Supply Policy for Non-Agricultural Projects

Acknowledgement Section

Acknowledgements and Contributors

We wish to thank the staffs of Imperial County Planning and Development Services (ICPDS) and Imperial Irrigation District (IID) for their assistance in providing information that was essential to the preparation of this report.



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Purpose

This Water Supply Assessment (WSA) was prepared for 85JP 8ME, LLC as the project sponsor/applicant, and Imperial County Planning and Development Services (ICPDS), as the lead agency under the California Environmental Quality Act (CEQA), by Development Design & Engineering, Inc. (DD&E), as the consultant, regarding Ferrell Solar Farm ("Ferrell"); Rockwood Solar Farm ("Rockwood"); Iris Solar Farm ("Iris") and Lyons Solar Farm ("Lyons"), collectively the Iris Cluster ("IC"). This study is a requirement of California law, specifically Senate Bill 610 (referred to as SB 610). SB 610 is an act that amended Section 21151.9 of the Public Resources Code, and Sections 10631, 10656, 10910, 10911, 10912, and 10915 of the Water Code. SB 610 repealed Section 10913, and added and repealed Section 10657 of the Water Code. SB 610 was approved by the Governor and filed with the Secretary of State on October 9, 2001, and became effective January 1, 2002.

Under SB 610, WSAs must be furnished to local governments for inclusion in environmental documentation for certain projects (as defined in Water Code 10912 [a]) subject to CEQA. Due to increased population, land use changes and water demands, this water bill seeks to improve the link between information on water availability and certain land use decisions made by cities and counties. As per California Department of Water Resources policy, "Even though a water supplier may not be a 'public water system' or become a 'public water system' as a result of serving the proposed project, it will still be involved, in a consultation role, in the preparation of the assessment."¹ SB 610 takes a significant step toward managing the demand of California's water supply as it provides regulations and incentives to preserve and protect future water needs. The intent of this bill is to coordinate local water supply and land use decisions to help provide California's cities, farms, rural communities and industrial developments with adequate water supplies.

Project Determination According to SB 610

Senate Bill 610- Water Supply Assessment

With the introduction of SB 610, any project under California Environmental Quality Act (CEQA) shall provide a WSA if:

- The project meets the definition of the Water Code Section 10912²

¹ Guidebook for Implementation of Senate Bill 610 and Senate Bill 221 of 2001, pg. 5.

² Water Code Section 10912:

For the purposes of this part, the following terms have the following meanings:

(a) "Project" means any of the following:

(1) A proposed residential development of more than 500 dwelling units.

(2) A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space.

(3) A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space.

(4) A proposed hotel or motel, or both, having more than 500 rooms.

(5) A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area.

(6) A mixed-use project that includes one or more of the projects specified in this subdivision.

After review of Water Code Section 10912, IC is deemed a “project” because it proposes a demand of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project; and/or because it is a proposed industrial use occupying more than 40 acres of land.

(7) A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project.

(b) If a public water system has fewer than 5,000 service connections, then “project” means any proposed residential, business, commercial, hotel or motel, or industrial development that would account for an increase of 10 percent or more in the number of the public water system’s existing service connections, or a mixed-use project that would demand an amount of water equivalent to, or greater than, the amount of water required by residential development that would represent an increase of 10 percent or more in the number of the public water system’s existing service connections.

Executive Summary

The County, Lead Agency under CEQA, requested a WSA as part of the environmental review for IC. This study is intended for use by ICPDS during the CEQA process in its evaluation of water supplies for the project, and existing and future land uses. The assessment examines the following water issues:

- **Water availability during a normal year (See Section 1)**
- **Expected water availability during multiple dry years (See Section 2)**
- **Water availability for a 42-year projection (See Section 3)**
- **Agricultural consumption and project water demands (See Section 4)**
- **Foreseeable planned water demands to be served by IID (See Section 5)**

This WSA has determined that IID's water supply in association with the IWSP is sufficient to meet project needs, in addition to existing and planned future uses. Imperial Unit water availability has been assessed for a 42-year projection (2015 - 2057), which is concurrent with the proposed construction and operational life of IC³. Applicant seeks to utilize solely IID IWSP water to operate IC, along w/ any other private potable water provider. IID's adoption of the revised Equitable Distribution Plan dated October 28, 2013 enables water supply within the Imperial Unit to be consistent and reliable.

The project site lies within Imperial Irrigation District's (IID) Imperial Unit and as such is eligible to receive water service. IID has adopted an Interim Water Supply Policy for Non-Agricultural Projects (IWSP), from which water supplies can be contracted to serve new developments within IID's water service area. For applications processed under the IWSP, applicants shall be required to pay a processing fee and, after IID board approval of the corresponding agreement, will be required to pay a reservation fee(s) and annual water supply development fees.

The IWSP sets aside 25,000 acre-feet (AF) of IID's Colorado River water supply to serve new non- agricultural projects. To date, 23,191 AFY remain available under the IWSP for new non-agricultural projects ensuring reasonably sufficient supplies for such water users. The project water demand of approximately 520 AFY represents 2.24% of the unallocated supply set aside for non-agricultural projects, which would not affect IID's ability to provide water to other users in IID's water service area.

³ Construction is assumed to occupy a 24-month window with a 2015 1st quarter starting date. Operation is assumed to occupy a 40-year window with a 2017 1st quarter operational commencement date. This was done to be conservative above and beyond the 20-year SB-610 mandate.

The 1,422.4 acres that would be taken out of agricultural production as a result of IC are estimated to use 6,870 AFY as farmland based on the history of water delivered to the same area by IID. The applicant proposes to use 520 AFY for operation of IC, and 1,000 AFY for construction (2-year estimated construction window). The result is a decrease in usage at build-out during operation of 92.43%+/- when compared to the historical annual delivery average for the IC area. Section 4 of this report provides a comparison of proposed project water use versus historical water use for the IC area.

Project Description⁴

The applicant proposes to build and operate four utility scale solar farms on the cluster site. The cluster site comprises ten separate assessor's parcels totaling 1,422 gross acres, which have historically been used for agricultural production, consisting of relatively flat topography. The cluster site is located approximately 2 miles west of the City of Calexico, California in southern Imperial County. IC is adjacent to the Mount Signal Solar Farm 1 project and is generally located between State Route 98 to the south, Kubler Road and Preston Road to the north, Weed Road to the east, and Brockman Road to the west. Agricultural uses lie to the north and east, and solar farms are to the west and to the south. See Table 1 for Iris Cluster land data.

Table 1: Iris Cluster Land Data

Project	APN	Owner	Zoning	Gross (AC)	Delivery	Average Annual Historical Water Use	
Ferrell	052-180-042	Craig Corda	A2R	204.0	Wistaria	57.59	1117.5
Ferrell	059-050-001	Mathew Johnson	A2R	163.1	Wistaria Lateral #3	50A, 50B	814.2
Ferrell Subtotal				367.1			
Rockwood	052-180-040	Land/Calexico, LLC	A2/A2R	67.9	Wistaria Lateral No. 2	46	183.5
Rockwood	052-180-048	Land/Calexico, LLC	A2R	170.7	Wistaria Lateral No. 4	61	942.7
Rockwood	052-180-064	Land/Calexico, LLC	A2/A2R	157.7	Wistaria Lateral No. 2	44	773.2
Rockwood Subtotal				396.3			
Iris	059-050-002	KM Ranches LLC	A2R	188.1	Wistaria/ Wistaria Lateral No. 3	49, 51	789.5
Iris	059-050-003	Leslie Johnson	A2/A2R	165.5	Wistaria/ Wistaria Lateral No. 2	37-A, 48	1009.1
Iris	059-120-001	Leslie Johnson	A2R	167.2	Wistaria	53	708.2
Iris Subtotal				520.8			
Lyons	052-180-053	Curtis John & Julie Ann Corda	A3	57.2	Wistaria Lateral No. 5	68-D	134.0
Lyons	052-180-058	Kay Brockman Bishop	A2R	81.2	Wistaria Lateral No. 5	68-C	398.3
Lyons Subtotal				138.4	Average Total Water Use:		6870.2
Iris Cluster Total:				1422.6			

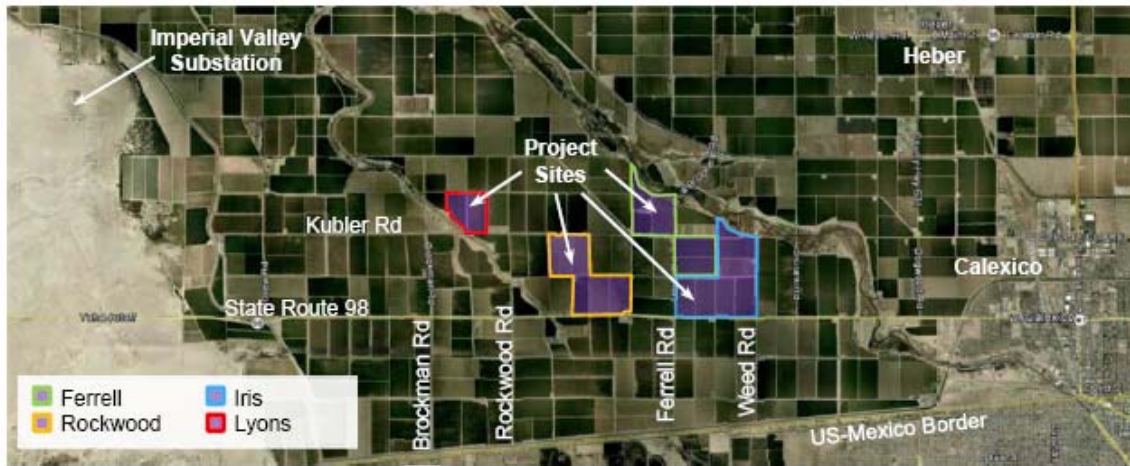
Construction of IC is estimated to occupy a 24-month window with a 2015 1st quarter starting date. Operation is estimated to occupy a 40-year window with a 2017 1st quarter operational commencement date. IC is estimated to use 1000 AFY for construction and 520 AFY for operation, which includes water for general facility operation/maintenance as well as potential cover crop irrigation.

⁴ The Project Description is a summary of data provided by the applicant.

Figure 1: State of California Project Location Map



Figure 2: Project Location Maps



Description of IID Service Area

The Project site is located in Imperial County in the southeastern corner of California. The County is comprised of approximately 4,597 square miles or 2,942,080 acres.⁵ Imperial County is bordered by San Diego County to the west, Riverside County to the north, the Colorado River/Arizona boundary to the east, and 84 miles of International Boundary with the Republic of Mexico to the south. Approximately fifty percent of Imperial County is undeveloped land under federal ownership and jurisdiction. The Salton Sea accounts for approximately 11 percent of Imperial County's surface area. In 2011, 16 percent of the area was in irrigated agriculture (469,916 acres), including 14,676 acres of the Yuma Project, some 35 sections or 5,600 acres served by Palo Verde Irrigation District (PVID), and 440,650 acres served by IID.^{6,7}

The area served by IID is located in the Imperial Valley, which is generally geographically synonymous with IID's Imperial Unit, lying south of the Salton Sea, north of the U.S./Mexico International Border, and generally in the 658,942 acre area between IID's Westside Main and East Highline canals.⁸ In 2011, IID delivered untreated water to 440,650 net irrigated acres, predominantly in the Imperial Valley along with small areas of East and West Mesa land.⁴ The developed area consists of seven incorporated cities (Brawley, Calexico, Calipatria, El Centro, Holtville, Imperial and Westmorland), three unincorporated communities (Heber, Niland, Seeley), and three institutions (Naval Air Facility [NAF] El Centro, Calipatria CDCR, and Centinela CDCR) and supporting facilities. **Figure 3** provides a map of the IID Imperial Unit boundary, as well as cities, communities and main canals.

Water users in the Imperial Valley depend on the Colorado River for virtually all of their water, which IID transports, untreated, to delivery gates for agricultural, municipal, industrial (including geothermal and solar energy), environmental (managed marsh), recreational (lakes), and other non-agricultural uses. IID supplies the cities, communities, institutions and Southern California Water Company (which serves Calipatria, Niland, and Calipatria CDCR) with untreated water that they treat to meet state and federal drinking water guidelines before distribution to their customers. Industries outside the municipal areas treat the water to required standards of their industry.

To comply with U.S. Environmental Protection Agency (USEPA) requirements and avoid termination of canal water service, residents in the IID water 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. The IID Water Department tracks nearly 4,000 raw water service accounts required by the California Department of Public Health (CDPH) to have alternate drinking water service. The District maintains a small-acreage pipe and drinking water database, and provides an annual compliance update to CDPH.

⁵ *Imperial County General Plan*, Land Use Element 2008 Update

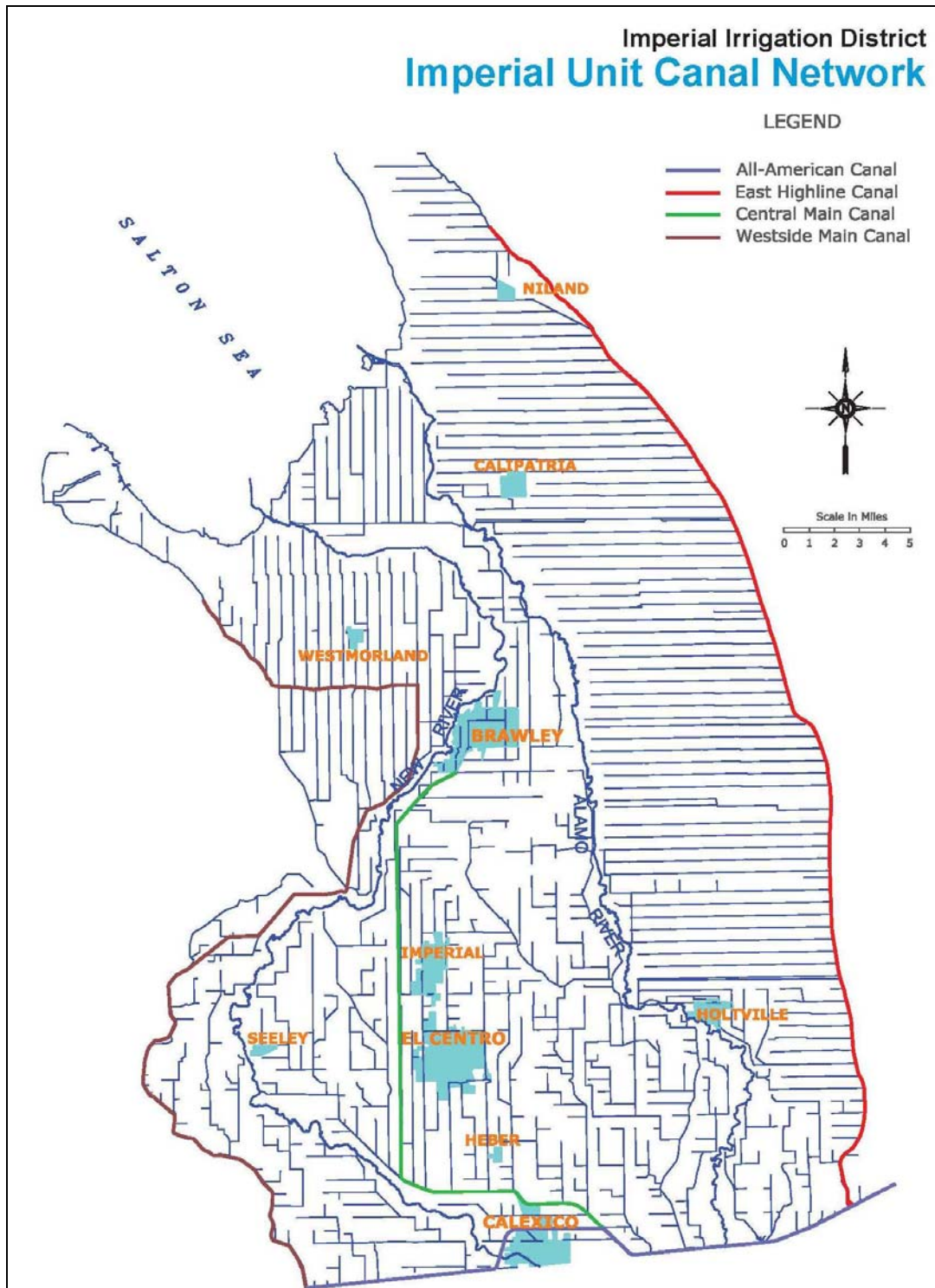
⁶ USBR Yuma Project <http://www.usbr.gov/projects/Project.jsp?proj_Name=Yuma+Project> 7 June 2013

⁷ Palo Verde Irrigation District Acreage Map <http://www.pvid.org/pviddocs/acreage_2012.pdf> 7 June 2013

⁸ IID Annual Inventory of Areas Receiving Water Years 2011, 2010, 2009, <<http://www.iid.com/index.aspx?page=119>> 7 June 2013

Agricultural development in the Imperial Valley began at the turn of the twentieth century. In 2011, gross agricultural production for Imperial County was valued at \$1,964,087,000, of which approximately \$1,859,227,000 was produced in the IID water service area. While the agriculture-based economy is expected to continue, land use is projected to change somewhat over the years as industrial and/or alternative energy development and urbanization occur in rural areas, and in areas adjacent to existing urban centers.

Figure 3 IID Imperial Unit Boundary and Canal Network



Imperial Unit Future Land and Water Uses

Imperial Valley's economy is gradually diversifying. Agriculture will likely continue to be the primary industry within the valley; however, two principal factors anticipated to reduce crop acreage are renewable energy (geothermal and solar) and urban development. Over the next twenty years, urbanization is expected to slightly decrease agriculture land use to provide space for an increase in residential, commercial and industrial uses. Increases in urban growth will require additional energy both locally and in the South Coast. Local resources include geothermal, wind, biomass and solar; and plans have been made to develop energy production centers or energy parks within Imperial County.⁹ Alternative energy facilities will help California meet its statutory and regulatory goals for increasing renewable power generation and use.

The majority of Imperial Valley's urban development is expected to remain concentrated near the established urban centers (incorporated cities and unincorporated communities) for efficient infrastructure layout. Part of the anticipated urban growth is due to the two U.S./Mexico International border crossings into the Imperial Valley – Calexico West Port of Entry, between Calexico and Mexicali and Calexico East Port of Entry, to the east of these cities. The Calexico East facility is expected to generate development in the Imperial Valley, since movement of goods and services has increased dramatically since January 1994 implementation of the North American Free Trade Agreement (NAFTA).

Undeveloped areas that are being or could likely be developed include both lands that surround the incorporated cities and unincorporated communities and unincorporated areas defined by specific plans. Specific plans are used to implement the Imperial County General Plan for large development projects such as planned communities or to designate an area where further studies are needed for development like Mesquite Lake. When adopted, a specific plan serves as an amendment to Imperial County's General Plan for a defined and detailed area. IC does not trigger the need for a Specific Plan or General Plan Amendment, but rather, a conditional use permit since the property is already zoned A2, A-2R, and A-3.

In 2011, the total urban area in the Imperial Valley was 30,013 acres or 4.46 percent of the Imperial Unit's 658,942 acres.¹⁰ Urban areas to be developed will be characterized by a full level of urban services, with a broad range of residential, commercial and industrial land uses. It is anticipated that most new urban development will eventually be annexed and incorporated into existing municipal areas, or form new County Service Areas (CSAs), and be provided with a full range of public infrastructure normally associated with urban areas. This includes public sewer and water, drainage improvements, streetlights, fire hydrants, and fully improved paved streets with curbs, gutters and sidewalks that are consistent with respective municipal standards.

⁹ *Imperial County General Plan*, Geothermal/Alternative and Transmission Element, revised 2006

¹⁰ Total acreage for Imperial Unit and for urban areas in the unit are based on in *IID 2009-2011 Annual Inventory of Areas Receiving Water* <http://www.iid.com/Modules/ShowDocument.aspx?documentid=5607> > 8 Feb 2013

Imperial Valley baseline (2005) and forecasted future non-agricultural water demand, with and without conservation, are provided in **Table 2** in five-year increments for 2010 through 2050. Without conservation, total water demand for non-agricultural uses is forecasted to be 302,000 AF annually (1,076 MGD) in the year 2050. With conservation, total future water demand for the Imperial Valley is forecasted to be 255,000 acre-feet (KAF) annually (957 MGD). This is a forecasted increase in the use of non-agricultural water of from around 138 KAF to around 185 KAF, with and without conservation, respectively, for the period of 2010 to 2050.

Table 2: Non-Agricultural Water Demand within IID Water Service Area, 2005-2050 (AFY)

	2005	2010	2015	2020	2025	2030	2035	2040	2045	2050
Without Conservation										
Municipal	30,617	37,543	43,159	48,833	53,011	57,272	59,748	66,652	74,412	83,139
Geothermal	31,931	48,383	64,835	81,287	97,739	114,192	130,644	147,096	163,548	180,000
Other Industrial	7,092	7,092	7,092	7,092	7,092	7,092	7,092	7,092	7,092	7,092
Feedlots/Dairies	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
Envr Resources	0	3,840	7,930	12,020	12,020	12,020	12,020	12,020	12,020	12,020
Total	89,640	116,858	143,016	169,232	189,862	210,576	229,504	252,860	277,072	302,251
With Conservation										
Municipal	30,617	37,543	41,984	42,275	46,018	49,846	52,175	58,305	65,183	72,909
Geothermal	31,931	48,383	58,352	65,030	78,192	91,353	104,515	117,677	130,838	144,000
Other Industrial	7,092	7,092	6,699	6,306	6,306	6,306	6,306	6,306	6,306	6,306
Feedlots/Dairies	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
Envr Resources	0	3,840	7,930	12,020	12,020	12,020	12,020	12,020	12,020	12,020
Total	89,640	116,858	134,964	145,631	162,536	179,525	195,016	214,308	234,347	255,235

Note: Future geothermal demand is based on assumed 20% conservation savings to meet CA 20 X 2020 goal and use of BMPs.

Source: *Imperial IRWMP* Vol. 1, Table 5.22, (Oct 2012)

Adopted by the IID Board on September 29, 2009, the Interim Water Supply Policy for Non-Agricultural Projects (IWSP) governs how IID will make water available to new non-agricultural projects, including IC.

Climate Factors

Imperial Valley has a subtropical desert climate characterized by hot, dry summers and mild winters. Summer temperatures typically exceed 100 degrees Fahrenheit (°F), while winter low temperatures rarely drop below 32°F. The remainder of the year has a relatively mild climate with temperatures averaging in the mid-70s. For the 30 years from 1977-2006, average annual air temperature was 73.8°F, and average annual rainfall period was 3.15 inches (Table 3). The majority of rainfall occurs from November through March, along with periodic summer thunderstorms. As a rule, rainfall in the Imperial Valley contributes around 50,000 AF of effective agricultural water per inch of rain.

Table 3: Climate Summary: 30-Year Monthly and 30-Year Annual Averages, 1977-2006

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Avg. Max. Temp (°F)	80	84	91	99	105	112	114	113	110	101	89	78	114
Avg. Min Temp (°F)	31	35	40	46	52	58	67	67	60	49	37	32	47.8
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 Weather Station Record

Imperial Irrigation District's Water Rights¹¹

IID was formed in 1911, under the California Irrigation District Act, to acquire properties of the bankrupt California Development Company and its Mexican subsidiary to import raw Colorado River water and distribute it. By 1922, IID had acquired 13 mutual water companies, which had developed and operated distribution canals in the Imperial Valley. By the mid-1920s, IID was delivering water to nearly 500,000 acres. Since 1942, water has been diverted at Imperial Dam on the Colorado River into the All-American Canal (AAC), both of which IID operates and maintains. IID ended its fifty-year operation in Mexico by selling its holdings to the Mexican government in 1961.¹²

California Law

IID's has a longstanding right to divert Colorado River water, and IID holds legal titles to all of its water and water rights in trust for landowners within the district (CWC §20529 and §22437; *Bryant v. Yellen*, 447 U.S. 352, 371 (1980), fn.23.). Beginning in 1885, a number of individuals, as well as the California Development Company, made a series of appropriations of Colorado River water under California law for use in the Imperial Valley. The rights to these appropriations were among the properties acquired by IID from the California Development Company.

Law of the River

Colorado River water rights are governed by numerous compacts, state and federal laws, court decisions and decrees, contracts, and regulatory guidelines collectively known as the "Law of the River." Together, these documents form the basis for allocation of the water, regulation of land use, and management of the Colorado River water supply among the seven basin states and Mexico.

Of all regulatory literature that governs Colorado River water rights, the following are the specifics that impact IID:

- Colorado River Compact (1921)
- Boulder Canyon Project Act (1928)
- California Seven-Party Agreement (1931)
- Arizona v. California US Supreme Court Decision (1964, 1979)
- Colorado River Basin Project Act (1968)
- Quantification Settlement Agreement and Related Agreements (2003)

¹¹ Information in this section is from IID 2009 Annual Water Report, pages 12-15; and October 2012 Imperial Integrated Regional Water Management Plan, Chapter 5.

<<http://www.iid.com/Modules/ShowDocument.aspx?documentid=4214>>

¹² IID 2010 Annual Water Report, page 5

<<http://www.iid.com/Modules/ShowDocument.aspx?documentid=5057>>

2003 Colorado River Water Delivery Agreement: Federal QSA for purposes of Section 5(b)
Interim Surplus Guidelines (CRWDA)
1970 Criteria for Coordinated Long-Range Operation of Colorado River Reservoirs
Annual Operating Plan (AOP) for Colorado River Reservoirs
2007 Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated
Operations for Lakes Powell and Mead (2007 Interim Guidelines)

Colorado River Compact (1924)

With authorization of their legislatures and urging of the federal government, representatives from the seven Colorado River basin states began negotiations regarding distribution of water from the Colorado River in 1921. In November 1922, an interstate agreement called the “Colorado River Compact” was signed by the representatives giving the Lower Basin perpetual rights to annual apportionments of 7.5 million acre-feet (MAF) of Colorado River water (75 MAF over ten years). The Upper Basin was to receive the remainder, which based on the available hydrological record was also expected to be 7.5 MAF annually, with enough left over to provide the Republic of Mexico with 1.5 MAF annually.

Boulder Canyon Project Act (1928)

Provisions in the 1928 Boulder Canyon Project Act made the compact effective and authorized construction of Hoover Dam and the All-American Canal, and served as the United States’ consent to accept the Compact. Through a Presidential Proclamation on June 25, 1929, this act resulted in ratification of the Compact by six of the basin states and required California to limit its annual consumptive use to 4.4 MAF of the lower basin’s apportionment plus not less than half of any excess or surplus water unapportioned by the Compact. A lawsuit was filed by the State of Arizona after its refusal to sign. Through the implementation of its 1929 Limitation Act, California abided by this federal mandate. The Boulder Canyon Act authorized the Secretary of the Interior (Secretary) to “contract for the storage of water... and for the delivery thereof... for irrigation and domestic uses,” and additionally defined the lower basin’s 7.5 MAF apportionment split, with an annual allocation 0.3 MAF to Nevada, 2.8 MAF to Arizona, and 4.4 MAF to California. Even though the three states never formally settled or agreed to these terms, a 1964 Supreme Court decision (*Arizona v. California*, 373 U.S. 546) declared the three states’ consent to be insignificant since the Boulder Canyon Project Act was authorized by the Secretary.

California Seven-Party-Agreement (1931)

After implementation of the Boulder Canyon Project Act, the Secretary requested that California create recommendations regarding distribution of its allocation of Colorado River water. Under the direction of the State Engineer, the California Seven-Party Agreement was developed and authorized by the affected parties to prioritize the State's water rights in August 1931. In September 1931, the Secretary accepted this agreement and established these priorities through general regulations. As shown in **Table 4**, allocation to Priorities 1-4 account for California's annual apportionment of 4.4 MAF, with agricultural entities entitled to use 3.85 MAF of that total. Priorities 5-7 are defined for years in which the Secretary proclaims that surplus water is available for distribution.

Table 4: California Seven-Party Agreement for Apportionments and Priorities (AFY)10F¹³

Priority Order	Description	Annual Apportionment (Acre-feet)	Annual Present Perfected Rights (PPRs) (Acre-feet)
1	Palo Verde Irrigation District – for use exclusively on a gross area of 104,500 acres of land within and adjoining the district	3,850,000	219,790 (or consumptive use for 33,604 acres)
2	Yuma Project (Reservation District) – for use on California Division, not exceeding 25,000 acres of land		38,270 (or consumptive use for 6,294 acres)
3(a)	Imperial Irrigation District - for use on lands served by All-American Canal in Imperial and Coachella Valleys		2,600,000 (or consumptive use for 424,145 acres) - (IID only)
3(b)	Palo Verde Irrigation District – for use exclusively on an additional 16,000 acres of mesa lands		
4	Metropolitan Water District and/or City of Los Angeles and/or others – for use by themselves and/or others on Southern California coastal plain	550,000	
	Subtotal	4,400,000	
5(a)	Metropolitan Water District and/or City of Los Angeles and/or others on coastal plain	550,000	
5(b)	City and County of San Diego	112,000	
6(a)	Imperial Irrigation District - lands served by the All-American Canal (AAC) in Imperial and Coachella Valleys	300,000	
6(b)	Palo Verde Irrigation District – for exclusive use on 16,000 acres of mesa lands		
	Total	5,362,000	
7	California Agricultural Use - Colorado River Basin lands in California	All remaining available water	

Source: October 2012 Imperial IRWMP, Chapter 5.

¹³ IID 2010 Annual Water Report < <http://www.iid.com/Modules/ShowDocument.aspx?documentid=5057>>. p 14.

Arizona v. California U.S. Supreme Court Decision (1964, 1979)

The 1964 Supreme Court decision settled a 25-year disagreement between Arizona and California that stemmed from Arizona's desire to build the Central Arizona Project to enable use of its full apportionment. California's argument was that as Arizona used water from the Gila River, which is a Colorado River tributary, it was using a portion of its annual Colorado River apportionment. An additional argument from California was that it had developed a historical use of some of Arizona's apportionment, which, under the doctrine of prior appropriation, precluded Arizona from developing the project. California's arguments were rejected by the U.S. Supreme Court. Under direction of the Supreme Court, the Secretary was restricted from delivering water outside of the framework of apportionments defined by law. Preparation of annual reports documenting consumptive use of water in the three lower basin states was also mandated by the Supreme Court. In 1979, present perfected water rights (PPRs) referred to in the Colorado River Compact and in the Boulder Canyon Project Act were addressed by the Supreme Court in the form of a Supplemental Decree.

In March of 2006, a Consolidated Decree was issued by the Supreme Court to provide a single reference to the conditions of the original 1964 decrees and several additional decrees in 1966, 1979, 1984 and 2000 that stemmed from the original ruling. The Consolidated Decree also reflects the settlements of the federal reserved water rights claim for the Fort Yuma Indian Reservation.

Colorado River Basin Project Act (1968)

In 1968, various water development projects in both the upper and lower basins, including the Central Arizona Project (CAP) were authorized by Congress. Under the Colorado River Basin Project Act, priority was given to California's apportionment over (before) the CAP water supply in times of shortage. Also under the act, the Secretary was directed to prepare long-range criteria for the Colorado River reservoir system in consultation with the Colorado River basin states.

Quantification Settlement Agreement and Related Agreements (2003)

With completion of a large portion of the CAP infrastructure in 1994, creation of the Arizona Water Banking Authority in 1995, and the growth of Las Vegas in the 1990s, California encountered increasing pressure to live within its rights under the Law of the River. After years of negotiating among Colorado River Compact States and affected California water delivery agencies, a Quantification Settlement Agreement and Related Agreements and documents were signed on October 10, 2003, by the Secretary of Interior, IID, Coachella Valley Water District (CVWD), Metropolitan Water District of Southern California (MWD), San Diego County Water Authority (SDCWA), and other affected parties.

The Quantification Settlement Agreement and Related Agreements (QSA/Transfer Agreements) are a set of interrelated contracts that resolve certain disputes among the United States, the State of California, IID, MWD, CVWD and SDCWA, for a period of 35 to 75 years, regarding the reasonable and beneficial use of Colorado River water; the ability to conserve, transfer and acquire conserved Colorado River water; the quantification and priority of Priorities 3 and 6 within California for use of Colorado River water; and the obligation to implement and fund environmental impact mitigation.

Conserved water transfer agreements between IID and SDCWA, IID and CVWD, and IID and MWD are all part of the QSA/Transfer Agreements. For IID, these contracts identify conserved water volumes and establish transfer schedules along with price and payment terms. As specified in the agreements, IID will transfer nearly 415,000 AF annually over a 35-year period (or longer), as follows:

to MWD 110,000 AF [modified to 105,000 AF in 2007],
to SDCWA 200,000 AF,
to CVWD and MWD combined 103,000 AF, and
to certain San Luis Rey Indian Tribes 11,500 AFY of water.

All of the conserved water will ultimately come from IID system and on-farm efficiency conservation improvements. In the interim, IID has implemented a Fallowing Program to generate water associated with Salton Sea mitigation related to the impacts of the IID/SDCWA water transfer, as required by the State Water Resources Control Board, which is to run from 2003 through 2017. In return for its QSA/Transfer Agreements programs and deliveries, IID will receive payments totaling billions of dollars to fund needed efficiency conservation measures and to pay growers for conserved on-farm water, so IID can transfer nearly 14.5 MAF of water without impacting local productivity. In addition, IID will transfer to SDCWA 67,700 AFY annually of water conserved from the lining of the AAC in exchange for payment of lining project costs and a grant to IID of certain rights to use the conserved water.

Colorado River Water Delivery Agreement (2003)¹⁴

As part of QSA/Transfer Agreements among California and federal agencies, the Colorado River Water Delivery Agreement: Federal QSA for purposes of Section 5(b) Interim Surplus Guidelines (CRWDA) was entered into by the Secretary of the Interior, IID, CVWD, MWD and SDCWA. This agreement involves the federal government because of the change in place of diversion from Imperial Dam into the All-American Canal to Parker Dam into MWD's Colorado River Aqueduct.

¹⁴ USBR LCR website: CRWDA <<http://www.usbr.gov/lc/region/g4000/crwda/crwda.pdf>>

The CRWDA assists California to meet its “4.4 Plan” goals by quantifying deliveries for a specific number of years for certain Colorado River entitlements so transfers may occur. In particular, for the term of the CRWDA, quantification of Priority 3(a) was effected through caps on water deliveries to IID (consumptive use of 3.1 MAF per year) and CVWD (consumptive use of 330 KAF per year). In addition, California’s Priority 3(a) apportionment for a period of 35 to 75 years between IID and CVWD, with provisions for transfer of supplies involving IID, CVWD, MWD and SDCWA are quantified in the CRWDA.

Allocations for consumptive use of Colorado River water by IID, CVWD and MWD that will enable California to stay within its basic annual apportionment (4.4 MAF plus not less than half of any declared surplus) are defined by the terms of the QSA/Transfer Agreements (**Table 5**). As specified in the QSA/Transfer Agreements, by 2026, IID annual use within its water service area (Imperial Valley) is to be reduced to just over 2.6 MAF of its 3.1 MAF quantified annual apportionment. The remaining nearly 500,000 AF (which includes the 67,000 AF from AAC lining) are to be transferred annually to urban water users outside of the Imperial Valley.

Table 5: CRWDA Annual 4.4 MAF Apportionment (Priorities 1 to 4) for California Agencies (AFY)

User	Apportionment (AFY)
Palo Verde Irrigation District and Yuma Project*	420,000
Imperial Irrigation District	3,100,000
Coachella Valley Water District	330,000
Metropolitan Water District of Southern California*	550,000
Total:	4,400,000

* PVID and Yuma Project did not agree to a cap; value represents a contractual obligation by MWD to assume responsibility for any overages or be credited with any volume below this value.

Notes: All values are consumptive use at the Colorado River diversion: Palo Verde Diversion Dam (PVID), Imperial Dam (IID and CVWD), and Parker Dam (MWD).

Source: IID 2009 Annual Water Report, p 15. <<http://www.iid.com/Modules/ShowDocument.aspx?documentid=4214>>

Quantification of Priority 6(a) was effected through quantifying annual consumptive use amounts to be made available in order of priority to MWD (38 KAF), IID (63 KAF), and CVWD (119 KAF) with the provision that any additional water available to Priority 6(a) be delivered under IID’s and CVWD’s existing water delivery contract with the Secretary.¹⁵ The CRWDA provides that the underlying water delivery contract with the Secretary remain in full force and effect. (*Colorado River Documents 2008*, Chapter 6, pages 6-12 and 6-13). The CRWDA also provides a source of water to effect a San Luis Rey Indian Water rights settlement. Additionally, the CRWDA satisfies the requirement of the 2001 Interim Surplus Guidelines (ISG) that a QSA be adopted as a prerequisite to the interim surplus determination by the Secretary in the ISG.

¹⁵ When water levels in the Colorado River reservoirs are low, Priority 5, 6 and 7 apportionments are not available for diversion.

Inadvertent Overrun Payback Policy

The CRWDA Inadvertent Overrun Payback Policy (IOPP), adopted by the Secretary contemporaneously with the execution of the CRWDA, provides additional flexibility to Colorado River management and applies to entitlement holders in the Lower Division States.¹⁶ The IOPP defines inadvertent overruns as “Colorado River water diverted, pumped, or received by an entitlement holder of the Lower Division States that is in excess of the water users’ entitlement for the year.” An entitlement holder is allowed a maximum overrun of 10 percent of its Colorado River water entitlement.

In the event of an overrun, the IOPP provides a mechanism to payback the overrun. When the Secretary has declared a normal year for Colorado River diversions, a contractor has from one to three years to pay back its obligation, with a minimum annual payback equal to 20 percent of the entitlement holder’s maximum allowable cumulative overrun account or 33.3 percent of the total account balance, whichever is greater. However, when Lake Mead is below 1125 feet on January 1, the terms of the IOPP require that the payment of the inadvertent overrun obligation be made in the calendar year after the overrun is reported in the USBR Lower Colorado Region Colorado River Accounting and Water Use Report [for] Arizona, California, and Nevada (Decree Accounting Report).⁴¹⁷

1970 Criteria for Coordinated Long-Range Operation of Colorado River Reservoirs

The 1970 Operating Criteria control operation of the Colorado River reservoirs in compliance with requirements set forth in the Colorado River Compact of 1922, the United States-Mexico Water Treaty of 1944, the Colorado River Storage Project Act of 1956, the Boulder Canyon Projects Act (Lake Mead) and the Colorado River Basin Project Act (Upper Basin Reservoirs) of 1968, and other applicable federal laws. Under these Operating Criteria, the Secretary makes annual determinations published in the USBR Annual Operating Plan for Colorado River Reservoirs (discussed below) regarding the release of Colorado River water for deliveries to the lower basin states. A requirement to equalize active storage between Lake Powell and Lake Mead when there is sufficient storage in the Upper Basin is included in these operating criteria. **Figure 4** identifies the major storage facilities at the upper and lower basin boundaries.

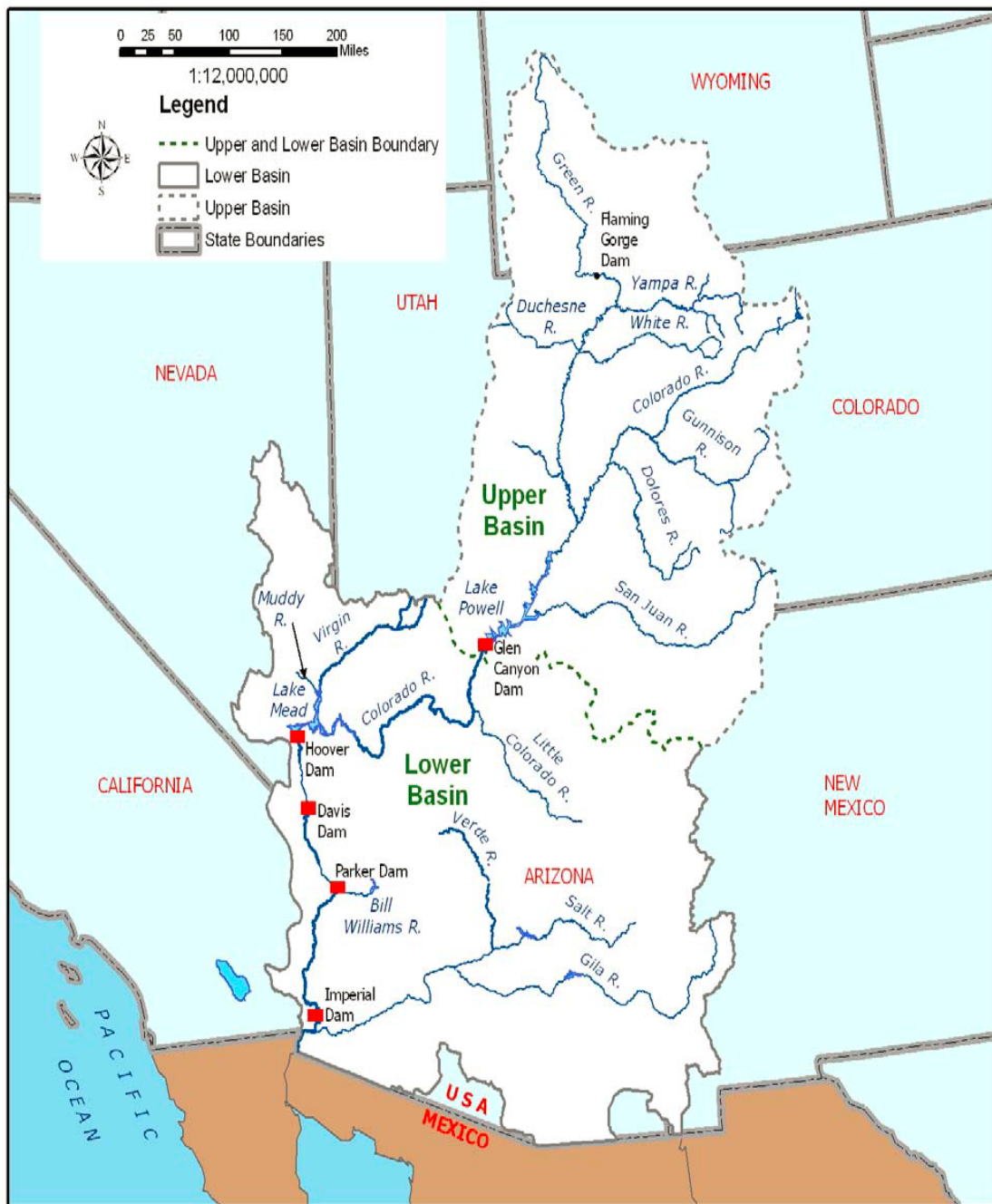
¹⁶ USBR. 2003 *Colorado River Water Delivery Agreement* ROD. Section IX. Implementing the Decision A. Inadvertent Overrun and Payback Policy. Pages 16-19 of 34. <http://www.usbr.gov/lc/region/g4000/crwda/crwda_rod.pdf> . 7 Feb 2013.

¹⁷ 2003 ROD CRWDA IOPP:< http://www.usbr.gov/lc/region/g4000/crwda/crwda_rod.pdf>

Annual Operating Plan for Colorado River Reservoirs

The AOP is developed in accordance with Section 602 of the Colorado River Basin Project Act (Public Law 90-537); the Criteria for Coordinated Long-Range Operations of Colorado River Reservoirs Pursuant to the Colorado River Basin Project Act of 1968, as amended, promulgated by the Secretary of the Interior; and Section 1804(c)(3) of the Grand Canyon Protection Act (Public Law 102-575). As part of the AOP process, the Secretary makes determinations regarding the availability of Colorado River water for deliveries to the lower basin states, including whether normal, surplus, and shortage conditions are in effect on the lower portion of the Colorado River.

Figure 4: Major Colorado River Reservoir Storage Facilities and Basin Location Map



Source: Final EIS – Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lake Powell and Lake Mead, Volume 1 Chapter 1 Purpose and Need, p I-10.

<<http://www.usbr.gov/lc/region/programs/strategies/FEIS/Chp1.pdf>>

2007 Colorado River Interim Guidelines for Lower Basin Shortages (2007 Interim Guidelines)

A multi-year drought in the Colorado River Upper Basin triggered the need for the 2007 Interim Guidelines. In the late 1990s, inflow to Lake Powell was above average and the lake remained full from 1995 through 1998, and as late as September 1999, Lake Powell was 95 percent full. However, with precipitation totals at only 30 percent of average for October, November, and December 1999, the stage was set for the low runoff that occurred in 2000. Inflow into Lake Powell from water years 2000 through 2004 was about half of what is considered average (Table 6).

Table 6: Unregulated Inflow to Lake Powell, Percent of Historic Average, 2000-2010

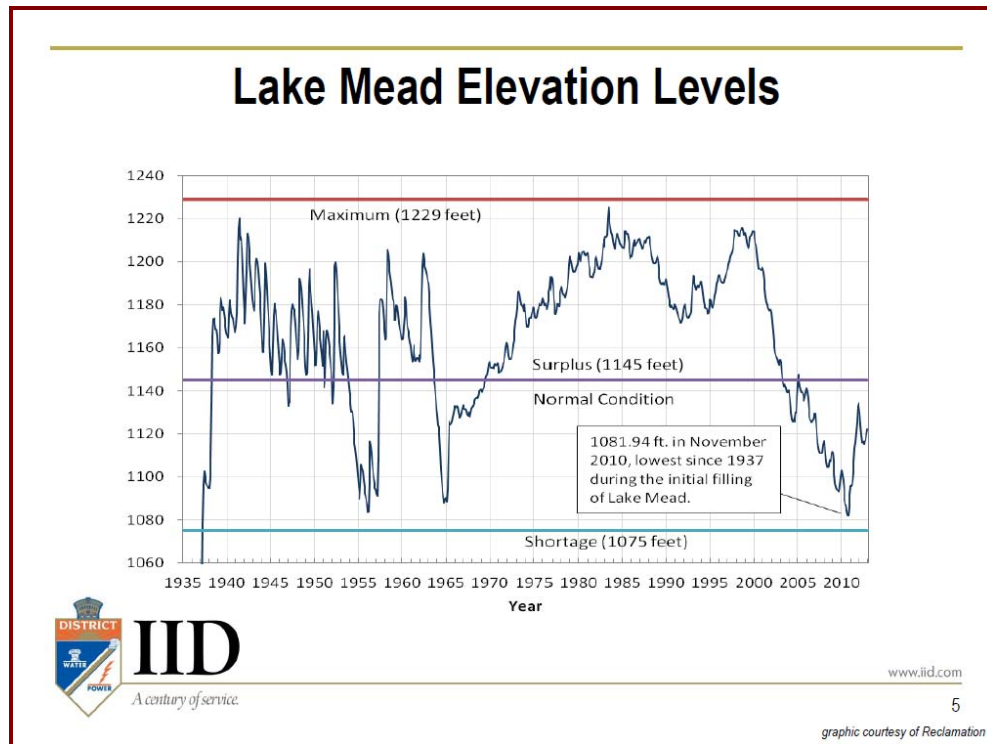
2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
62%	59%	25%	51%	49%	105%	73%	68%	102%	88%	73%

Source: Drought in the Upper Colorado River Basin. <<http://www.usbr.gov/uc/feature/drought.html>>

The drought continued through 2013, with one year of high runoff – unregulated inflow to Lake Powell was 279 percent of average by August 2011.¹⁸ This 14-year period is the lowest flow in over 100 years of record keeping on the Colorado River, and impact on water levels in Lake Mead can be seen in Figure 7.

¹⁸ Whether a drought exists is determined in comparison to normal hydrology for an area. Normal is defined as a long-term average of annual precipitation, which may include droughts and extremely wet periods. No single year is ever normal due to the complexity of weather patterns. Because the occurrence of a drought affects this average, this protracted drought will alter the definition of normal for the American Southwest for the next several decades. USBR *Drought in the Upper Colorado River Basin*. August 2011. <<http://www.usbr.gov/uc/feature/drought.html>>

Figure 5 Lake Mead Water Elevation Levels



For graph of latest elevations visit <http://www.arachnoid.com/NaturalResources/index.html>

In the midst of the drought period, USBR developed 2007 Interim Guidelines with consensus from the seven basin states, which selected the Draft EIS Preferred Alternative as the basis for USBR's final determination. The basin states found the Preferred Alternative best met all aspects of the purpose and need for the federal action.¹⁹

The 2007 Interim Guidelines Preferred Alternative highlights the following:

1. The need for the Interim Guidelines to remain in place for an extended period of time.
2. The desirability of the Preferred Alternative based on the facilitated consensus recommendation from the basin states.
3. The likely durability of the mechanisms adopted in the Preferred Alternative in light of the extraordinary efforts that the basin states and water users have undertaken to develop implementing agreements that will facilitate the water management tools (shortage sharing, forbearance, and conservation efforts) identified in the Preferred Alternative

¹⁹ USBR *Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lake Powell and Lake Mead*
<<http://www.usbr.gov/lc/region/programs/strategies.html>>

4. That the range of elements in the Preferred Alternative will enhance the Secretary's ability to manage the Colorado River reservoirs in a manner that recognizes the inherent tradeoffs between water delivery and water storage.

In June 2007, USBR announced that a preferred alternative for Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations of Lake Powell and Lake Mead (Final Preferred Alternative) had been determined. The Final Preferred Alternative, based on the basin states' consensus alternative and an alternative submitted by the environmental interests called "Conservation Before Shortage," is comprised of four key operational elements which are to guide operations of Lake Powell and Lake Mead through 2026 are:

5. Shortage strategy for Lake Mead and Lower Division states: The Preferred Alternative proposed discrete levels of shortage volumes associated with Lake Mead elevations to conserve reservoir storage and provide water users and managers in the Lower Basin with greater certainty to know when, and by how much, water deliveries will be reduced during low reservoir conditions.
6. Coordinated operations of Lake Powell and Lake Mead: The Preferred Alternative proposed a fully coordinated operation of the reservoirs to minimize shortages in the Lower Basin and to avoid risk of curtailments of water use in the Upper Basin.
7. Mechanism for storage and delivery of conserved water in Lake Mead: The Preferred Alternative proposed the Intentionally Created Surplus (ICS) mechanism to provide for the creation, accounting, and delivery of conserved system and non-system water thereby promoting water conservation in the Lower Basin. Credits for Colorado River or non-Colorado River water that has been conserved by users in the Lower Basin creating an ICS would be made available for release from Lake Mead at a later time. The total amount of credits would be 2.1 MAF, but this amount could be increased up to 4.2 MAF in future years.
8. Modifying and extending elements of the Interim Surplus Guidelines (ISG). The ISG determines conditions under which surplus water is made available for use within the Lower Division states. These modifications eliminate the most liberal surplus conditions thereby leaving more water in storage to reduce the severity of future shortages.

Importantly for long-term stable management of the Colorado River, adoption of the 2007 Interim Guidelines activates a critical provision in the legal agreement among the basin states: the basin states have agreed to mandatory provisions to address future controversies on the Colorado River through consultation and negotiation before resorting to litigation. With respect to the various interests, positions and views of each of the seven basin states, this provision adds an important element to the evolution of the legal framework for the prudent management of the Colorado River.

Furthermore, the coordinated operation element allows for adjustment of Lake Powell releases to respond to low reservoir storage conditions in either Lake Powell or Lake Mead, while, keeping the 2007 Interim Guidelines in place through 2026 provides an opportunity to gain operating experience for the management of Lake Powell and Lake Mead and to improve the basis for making additional future operational decisions, whether during the interim period or thereafter. 17F²⁰

Finally, the Intentionally Created Surplus (ICS) water conservation mechanism encourages efficient use and management of Colorado River water, and enhances conservation opportunities in the Lower Basin and the retention of water in Lake Mead.

²⁰ For a discussion of the 2007 Interim Guidelines, see: Intermountain West Climate Summary by The Western Water Assessment, issued Jan. 21, 2008, Vol. 5, Issue 1, *January 2009 Climate Summary*, Feature Article, pages 5-7. <http://wwa.colorado.edu/climate/iwcs/archive/IWCS_2009_Jan.pdf> 22 Mar 2013

Project Water Supply Sources

Water for the Project will be needed on-site for potable, non-potable and facility maintenance needs. Untreated Colorado River water will be supplied to the project via some of the adjacent IID canals as needed under water supply agreement(s) with IID. The site is currently under agricultural production and irrigated via several IID canals and gates. The project is estimated to use 520 AFY for operation of IC, and 1,000 AFY for construction. The result is a decrease in usage at build-out during operation of 92.43%+/- when compared to the historical annual delivery average for the IC area. Section 4 of this report provides a comparison of expected project water use versus historical water use the IC area.

Groundwater, Agricultural Practices and Drainage

Groundwater underlying the Imperial Valley is generally of poor quality unsuitable for domestic or irrigation purposes. Groundwater in the area of the project is brackish (contains a high salt content). Agricultural practices in the Imperial Valley, including in the project vicinity, consist of aerial and ground application of pesticides and application of chemical fertilizers to both ground and irrigation water at the farm delivery gate. Most of the agricultural fields in the valley are underlain by tile drainage systems (perforated pipelines encapsulated by sand/gravel) installed at a depth of approximately 5 to 7 feet below the ground surface. The tile drains maintain groundwater at levels below the root system of crops. The tile drains transport soluble salts contained in the Colorado River water and that are leached from the soil profile during irrigation. The tile drainage is collected in IID's drainage system, most of which discharges into the New and Alamo rivers and flows to the Salton Sea. A few IID drains discharge directly to the Salton Sea.

IID Interim Water Supply Policy for Non-Agricultural Projects

IID historically addressed new non-agricultural project demands on a case-by-case basis. On September 29, 2009, however, the IID Board adopted, the Interim Water Supply Policy for Non-Agricultural Projects (IWSP). Regarding water availability, the IWSP states:

The [2009 draft IID] IWRMP²¹ will enable the District to more effectively manage existing water supplies and to maximize the District's ability to store or create water when the available water supplies exceed the demand for such water. The stored water can be made available for later use when there is a higher water demand. Based upon known pending requests to the District for water supply assessments/verifications and pending applications to the County of Imperial for various Non- Agricultural Projects, the District currently estimates that up to 50,000 acre feet per year (AFY) of water could potentially be requested for Non-Agricultural

²¹ The 2009 draft IID IWRMP is superseded by the 2012 Imperial IRWMP.

Projects over the next ten to twenty years. Under the IRWMP the District shall evaluate the projected water demand of such projects and the potential means of supplying that amount of water. This IWSP currently designates up to 25,000 AFY of water for potential Non-Agricultural Projects within IID's water service area. Proposed Non-Agricultural projects may be required to pay a Reservation Fee, further described below. The reserved water shall be available for other users until such Non-Agricultural projects are implemented and require the reserved water supply. This IWSP shall remain in effect pending the approval of further policies that will be adopted in association with the IRWMP.

The IWSP establishes a schedule for Processing Fees, Reservation Fees, and Connection Fees that change each year for all non-agricultural projects, and annual Water Supply Development fees for some non-agricultural projects. It is anticipated that IC water use will be subject to the annual Water Supply Development fee.

The IWSP also describes steps that IID might take when EDP Apportionment is in effect. Provisions along the lines of those in the sections 3.7 and 3.8 of the 2012 IWSP Water Supply Agreement contract could apply:

3.7 If IID implements a water apportionment program pursuant to the Equitable Distribution Plan during all or any part of the Term of this Agreement, IID shall have the right to apportion Project Developer's water as a(n) Industrial/Municipal . . . User consistent with the terms of the Equitable Distribution Plan.

3.8 To the extent that IID receives an order or directive from a governmental authority having appropriate jurisdiction that reduces the volume of water available to IID from the Colorado River during all or any part of the Term of this Agreement, IID may reduce the Maximum Use Amount, as directed by the IID board; provided however that in no event shall the ratio of (i) such reduction in the Maximum Use Amount to (ii) the total reduction of water available to IID from the Colorado River exceed the ratio of a the Maximum Use Amount to (b) the current total amount of water available to IID from the Colorado River for the otherwise applicable year under contract or law. This reduction shall be separate from and in addition to any allocation authorized pursuant to the Equitable Distribution Plan.

If such provisions come into effect, the Project is proponent is to work with IID to ensure it can manage any reduction. At present, however, provided a water supply agreement is approved and executed by IID under the provisions of the IWSP, IID will have a sufficient water supply to support the water demands of this Project. The entirety of the IWSP provided herein as Attachment A

Imperial Integrated Regional Water Management Plan (October 2012)

In the summer of 2008, IID held a series of stakeholder meetings with senior management, the IID Board of Directors and the public to create a strategic plan for the organization. The finished plan, which included operating norms, new mission and vision statements and six of strategic objectives, was adopted by the board on September 23, 2008 and updated November 17, 2009.

The second strategic objective was to develop an integrated water resource plan for use in planning for and meeting future water resource needs and demands by addressing such issues as additional water supply options for long term water supply augmentation, demand management and determination and prioritization of uses and classes of service provided (ag, industrial, municipal, recreation, environmental, drainage, treated, etc.). The goal was to develop an integrated water resources plan by the end of 2009, adopt recommendations outlined in the plan in the first quarter of 2010, and implement the actions by mid-year 2010. However, upon receiving the draft plan, the Board directed staff to conduct a collaborative effort to look at ways to address development of water supplies for new non-agricultural projects in the face of supply reductions due to the QSA/Transfer Agreements. Staff proceeded to implement this directive, and this result is the 2012 Imperial integrated Water Resources Management Plan.

Chapter 5 of the 2012 Imperial IRWMP addresses water supplies (Colorado River and groundwater), demand, baseline and forecasted through 2050; and IID water budget. Chapter 12 addresses projects, programs and policies, and funding alternatives. Chapter 12 of the IRWMP lists, and Appendix N details, a set of capital projects that IID might pursue, including the amount of water that might result (AFY) and cost (\$/AF). These projects could generate long-term water supply augmentation and provide demand management opportunities to address the forecasted growth in non-agricultural water requirements. In particular, 2012 Imperial IRWMP Chapter 5 and Chapter 12 present:

IID's water rights.

Forecasted non-agricultural future use in five-year increments for 2010 through 2050.

IID's level of service (provisional water budget) for 2006-2011.

Sources, volume (AFY), and costs (\$/AF) of potential new IID capital projects.

Prioritized list of local and regional water supply opportunities submitted by Imperial IRWMP stakeholder.

Strawman proposals for demand management plans, non-agriculture water use best management practices (BMPs), drought management strategies, emergency contingency plans, and policies for non-agricultural water use.

Potential funding sources.

In November 2012, the Imperial County Board of Supervisors approved the October 2012 Imperial IRWMP, and the City of Imperial City Council and the IID Board approved it in December 2012. Approval by these three stakeholders meets the basic requirement of California Department of Water Resources (CDWR) for an IRWPM. Through the IRWMP process, IID presented to the region stakeholders methods for long-term water supply augmentation such as water storage and banking, recycling of municipal wastewater, and desalination of brackish water.^{19F²²}

Potential water storage and banking would benefit both agricultural and non-agricultural users, while other IID capital projects would be implemented primarily to meet requirements for new non-agricultural projects that have a demand higher than what was previously delivered to the development footprint.

Until the IID Board selects and implements such capital development projects, IID provides water to new non-agricultural projects under IWSP for Non-Agricultural Projects, which is incorporated into the 2012 Imperial IRWMP by reference.

²² October 2012 *Imperial Integrated Regional Water Management Plan*, Chapter 12

Imperial Irrigation District Water Supply and Demand

SB 610 requires an analysis of a normal, single dry, and multiple dry water years to show that adequate water is available for statistical conditions. An important caveat for IID Colorado River water accounting is that, under the Law of the River and the QSA/Transfer Agreements, consumptive use is not the same as delivery. **Table 7**, extracted from CRWDA Exhibit B, shows IID's Priority 3(a) Quantified Amount (Column 2), IID Reductions (Columns 3-9), IID Total Reduction (Column 10) and IID Net Consumptive Use Amount (Column 11), all volumes at Imperial Dam. This exhibit regulates IID's annual supply and accounts for IID's water transfer and other obligations.

In years when agricultural demand is higher than the projected use with conservation as in years of low rainfall or due to market driven cropping choices, IID water use may exceed the quantified amount. If there are not drought conditions on the Colorado River, IID has up to three years under the IOPP to pay that water back. However, in years of drought (Lake Mead water level at 1,125 feet or less), the 2007 Interim Guidelines come into effect and outstanding overruns must be paid back in the calendar year following publication of the overrun in the USBR LCR Decree Accounting Report.

In years of inadvertent overrun payback, conditions such as those in Sections 3.7 and 3.8 of the 2012 IWSP Water Agreement may go into effect, with the result that less water would be available for non-agricultural development contractors. Under such conditions, IID has requested that applicant/developer work with IID to ensure it can manage the reduction. IID has further indicated that, provided a water supply agreement is approved and executed by IID under the provisions of the IWSP, IID will have sufficient water to support the water of this Project.

Overall, agricultural water demand in the Imperial Valley will decrease due to IID system and grower on-farm efficiency conservation measures. However, being based on efficiency conservation, the transfers are designed not to reduce agricultural productivity. Thus, while annual IID consumptive use as reported by USBR is to decline (**Table 7** Column 11), so are annual agricultural demand, IID operational spill and seepage, and All-American Canal seepage – but not crop water use (evapotranspiration) or leaching needed for salinity control. This conserved water is to be transferred out of the Imperial Valley and will not be available for local users. In addition, actual year-to-year demand will continue to fluctuate due to factors such as annual rainfall and market conditions, resulting in inadvertent overruns from time to time and consequential payback requirements.

Total annual non-agricultural use in the Imperial Valley is projected to more than double from 2010 to 2030 – an increase with conservation of 54 percent (63 KAF), or without conservation of 80 percent (nearly 94 KAF) by 2030 (consumptive use would be greater at

Imperial Dam). If the forecasted non-agricultural use occurs, future IID capital projects may be needed.

Section 1: Water Availability – Normal Year

Due to IID annual consumptive use limits under the QSA/Transfer Agreements, water supplies during a normal year are best represented by the CRWDA net consumptive use amount (**Table 7** Column 11). These annual values plus an adjustment for normal rainfall of 3 inches/year, represent the maximum available supply for each year. IID suggests **Table 6**, which assumes full use of IID's quantified water supply, be used in determining base normal year water availability.

USBR annual Colorado River Accounting and Water Use (Decree Accounting) report tabulations, which include QSA/Transfer Agreement deductions, are the official record of IID Consumptive Use of Colorado River water at Imperial Dam. These consumptive use volumes for IID, MWD and CVWD include system "losses" (canal seepage, evaporation and phreatophyte use, and operational spill), because these districts are not adjacent to the river and return flow is minimal if there is any.

IID water use values from USBR Decree Accounting records are shown in **Table 7**. The sum of these values plus some others such as Miscellaneous PPR (11.5 KAFY) and Lower Colorado River Water Supply Project (LCRWSP) wellfield pumpage (around 5 KAFY) when summed are IID Consumptive Use at Imperial Dam. IID Consumptive Use for 1988 through 2012 at Imperial Dam include AAC and IID system "losses" attributable to water diverted for IID, but does not include not volumes of water conserved for transfer programs (IID/MWD transfer began in 1990, other QSA transfers were initiated in 2003), Salton Sea mitigation, Miscellaneous PPRs, LCRWSP, and other IID QSA programs.

Prior to 2003, IID had a dynamic water right and received flows that matched usage. As previously noted, given the 3.1 MAF cap agreed to by IID as a part of the QSA/Transfer Agreements, this WSA focuses on accounting from 2003 forward. The IID Net Consumptive Use Amount shown **Table 7** Column 11, characterizes normal year supplies for IID. To determine water availability for delivery in the Imperial Valley, the quantified amount must be reduced to account for AAC and IID system seepage, evaporation and phreatophyte use, and IID operational spill; and be increased for effective precipitation, if any.

Table 7: IID Net Consumptive Use, 2003 – 2037, et seq. (KAF, CRWDA Exhibit B)

IID Quantification and Transfers, as of 2011 (KAF) ¹										
Col 1	2	3	4	5	6	7	8	9	10	11
Year	IID Priority 3(a)									
	IID3(a) Quantified Amount	IID Reductions							IID Total Reduction (Σ Cols 3-9) ⁵	IID Net Available for Consumptive Use (Col 2 - 10)
		1988 MWD Transfer ²	SDCWA Transfer	AAC Lining	Salton Sea Mitigation SDCWA Transfer ³	Intra- Priority 3 CVWD Transfer	MWD Transfer w\ Salton Sea Restoration ⁴	Misc. PPRs		
2003	3,100	105.1	10.0	0.0	0.0	0.0	0.0	11.5	126.6	2978.2
2004	3,100	101.9	20.0	0.0	15.0	0.0	0.0	11.5	148.4	2743.9
2005	3,100	101.9	30.0	0.0	15.0	0.0	0.0	11.5	158.4	2756.8
2006	3,100	101.2	40.0	0.0	20.0	0.0	0.0	11.5	172.7	2909.7
2007	3,100	105.0	50.0	0.0	25.0	0.0	0.0	11.5	191.5	2872.7
2008	3,100	105.0	50.0	8.9	26.0	4.0	0.0	11.5	205.4	2825.1
2009	3,100	105.0	60.0	65.5	30.2	8.0	0.0	11.5	280.2	2566.7
2010	3,100	105.0	70.0	67.7	33.7	12.0	0.0	11.5	299.9	2545.6
2011	3,100	103.9	63.3	67.7	0.0	16.0	0.0	11.5	246.4	2915.8
2012	3,100	105	90	67.7	45	21	100	11.5	440.2	2,659.8
2013	3,100	105	100	67.7	70	26	100	11.5	480.2	2,619.8
2014	3,100	105	100	67.7	90	31	100	11.5	505.2	2,594.8
2015	3,100	105	100	67.7	110	36	100	11.5	530.2	2,569.8
2016	3,100	105	100	67.7	130	41	100	11.5	555.2	2,544.8
2017	3,100	105	100	67.7	150	45	91	11.5	570.2	2,529.8
2018	3,100	105	130	67.7	0	63	0	11.5	377.2	2,722.8
2019	3,100	105	160	67.7	0	68	0	11.5	412.2	2,687.8
2020	3,100	105	193	67.7	0	73	0	11.5	450.2	2,649.8
2021	3,100	105	205	67.7	0	78	0	11.5	467.2	2,632.8
2022	3,100	105	203	67.7	0	83	0	11.5	470.2	2,629.8
2023	3,100	105	200	67.7	0	88	0	11.5	472.2	2,627.8
2024	3,100	105	200	67.7	0	93	0	11.5	477.2	2,622.8
2025	3,100	105	200	67.7	0	98	0	11.5	482.2	2,617.8
2026	3,100	105	200	67.7	0	103	0	11.5	487.2	2,612.8
2027	3,100	105	200	67.7	0	103	0	11.5	487.2	2,612.8
2028	3,100	105	200	67.7	0	103	0	11.5	487.2	2,612.8
29-37	3,100	105	200	67.7	0	103	0	11.5	487.2	2,612.8
38-47 ⁶	3,100	105	200	67.7	0	103	0	11.5	487.2	2,612.8
48-77 ⁷	3,100	105	200	67.7	0	50 ⁸	0	11.5	434.2	2,665.8

¹ Information conveyed is volume at Imperial Dam from USBR CRWDA Exhibit B, volumes in KAF at Imperial Dam.

For 2003-2011 volumes are adjusted for USBR Decree Accounting actual values. For 2003-2011, IID Net Available for Consumptive Use may not equal Col 2 minus Col 10, due to IID uses not reported in this table.

² Second Amendment to IID/ MWD 1988 agreement provides that, starting in 2007, MWD transfer is fixed at 105 KAFY and can be reduced to 101.5 KAFY depending on tailwater return systems conservation and potable water project potentially funded by MWD. IID Total Reduction and IID Net Available for Consumptive Use have been recalculated to reflect this change.

³ Salton Sea Mitigation volumes may vary based on conservation volumes and method of conservation.

⁴ Would transfer water to MWD subject to satisfaction of certain conditions and to appropriate federal approvals, may also be subject to state approvals. *Note: This transfer is not likely to occur given lack of progress on Salton Sea restoration as of 2012.*

⁵ Reductions include conservation for 1988 IID/MWD Transfer, IID/SDCWA Transfer, AAC Lining; SDCWA Transfer Mitigation, MWD Transfer w/Salton Sea Restoration (if any), and Misc. PPRs. Amounts are independent of increases and reductions as allowed under the IOPP.

⁶ Assumes SDCWA does not elect termination in year 35.

⁷ Assumes SDCWA and IID mutually consent to renewal term of 30 years.

⁸ Modified from 100 KAFY shown in CRWDA Exhibit B as MWD will provide CVWD 50 KAFY of the 100 KAFY starting in year 46.

Notes: Substitute transfers can be made provided total volume of water to be transferred remains equal or greater than amounts shown consistent with applicable federal approvals. Shaded columns represent amounts of water that may vary.

Source: QSA CRWDA Exhibit B, p 13 <<http://www.usbr.gov/lc/region/g4000/QSA/crwda.pdf>>

Table 8: IID Historical Consumptive Use Amounts, 1988-2012 (AF)

Year	IID Water Users (USBR Report)	IID/MWD Transfer Program	IID/SDCWA Transfer Program	Salton Sea Mitigation	IID End of Year Overrun/Underrun (USBR Report)	IID/CVWD Transfer Program	AAC Lining
1988	2,947,581						
1989	3,009,451						
1990	3,054,188	6,110					
1991	2,898,963	26,700					
1992	2,575,659	33,929					
1993	2,772,148	54,830					
1994	3,048,076	72,870					
1995	3,070,582	74,570					
1996	3,159,609	90,880					
1997	3,158,486	97,740					
1998	3,101,548	107,160					
1999	3,088,980	108,500					
2000	3,112,770	109,460					
2001	3,089,911	106,880					
2002	3,152,984	104,940					
2003	2,978,223	105,130	10,000	0	14,700		
2004	2,743,909	101,900	20,000	15,000	159,881		
2005	2,756,846	101,940	30,000	15,000	8,957		
2006	2,909,680	101,160	40,000	20,000	18,914		
2007	2,872,754	105,000	50,000	25,021	6,358		
2008	2,825,116	105,000	50,000	26,085	47,999	4,000	8,898
2009	2,566,713	105,000	60,000	30,158	237,767	8,000	65,577
2010	2,545,593	105,000	70,000	33,736	207,925	12,000	67,700
2011	2,915,784	103,940	63,278	0	82,662	16,000	67,700
2012	2,903,216	104,140	106,722	15,182	134,076	21,000	67,700

Notes: Volumes in AF at Imperial Dam; not all IID QSA programs are shown on this table

Section 2: Expected Water Availability – Single Dry and Multiple Dry Years

Because of the low rainfall in the IID water service area, dry and multiple-dry water year analysis assumes one of the following scenarios is in effect:

1. USBR has declared a normal condition for deliveries to the Colorado River Lower Basin, and rainfall is scarce and creates drier than normal local conditions in the IID water service area. The year of 2006 with 0.43 inches of rain – well below the 93-year average of 3.15 inches – and relatively high IID consumptive use of Colorado River water is deemed the “dry” water year.²³
2. USBR has declared a normal condition for deliveries to the Colorado River Lower Basin, and an apportionment has been declared by IID’s Board of Directors for the year.
3. USBR has declared a shortage for deliveries to the Colorado River Lower Basin, IID has outstanding overruns to pay back to the river, and an apportionment is in effect with or without conditions similar to those in 2012 IWSP Water Agreement sections 3.7 and 3.8 (see section ib IID Interim Water Supply for Non-Agricultural Projects, above).

On November 28, 2006, the IID Board of Directors adopted Resolution No 22-2006 approving development and implementation of an Equitable Distribution Plan to deal with times when customers’ demand would exceed IID’s Colorado River supply – scenarios such as 2 and 3, above. As part of this Resolution, the IID Board directed the General Manager to prepare the rules and regulations necessary or appropriate to implement the plan within the district, which the board adopted in November 2006. The 2009 Regulations for EDP were created to enable IID to implement a water management tool (apportionment) to address years in which water demand is expected to exceed supply. A 2006 study by Hanemann and Brookes suggested that such conditions were likely to occur 40-50% of the years during the decade following the report. So far, for the ten years from 2003 through 2012, demand has exceeded supply by some amount for a total of six years (see **Table 7**, above).

The EDP, adopted in 2007 allows the IID Board to institute an apportionment program. The 2006 Hanemann-Brookes study stated supply was likely to exceed demand “4 or 5 times out of the next 10 years”.²⁴ In the eight years from 2004 through 2011, IID was accounted as overrunning its annual water limit four times and as noted above, as of 2013, IID had an outstand overrun balance of over 200,000 AF.

The IID 2013 Revised EDP, adopted by the Board on October 28, 2013, allows IID to pay back its outstanding overruns using EDP Apportionment, and it is expected that an annual

²³ Of course, commodity prices could have been down, in which case water use may *not* have been high.

²⁴ *Regarding the Equitable Distribution of Water in the Imperial Irrigation District* Draft Final Report, Hanemann & Brookes, 2006, <<http://www.iid.com/Modules/ShowDocument.aspx?documentid=116>> 8 Feb 2013

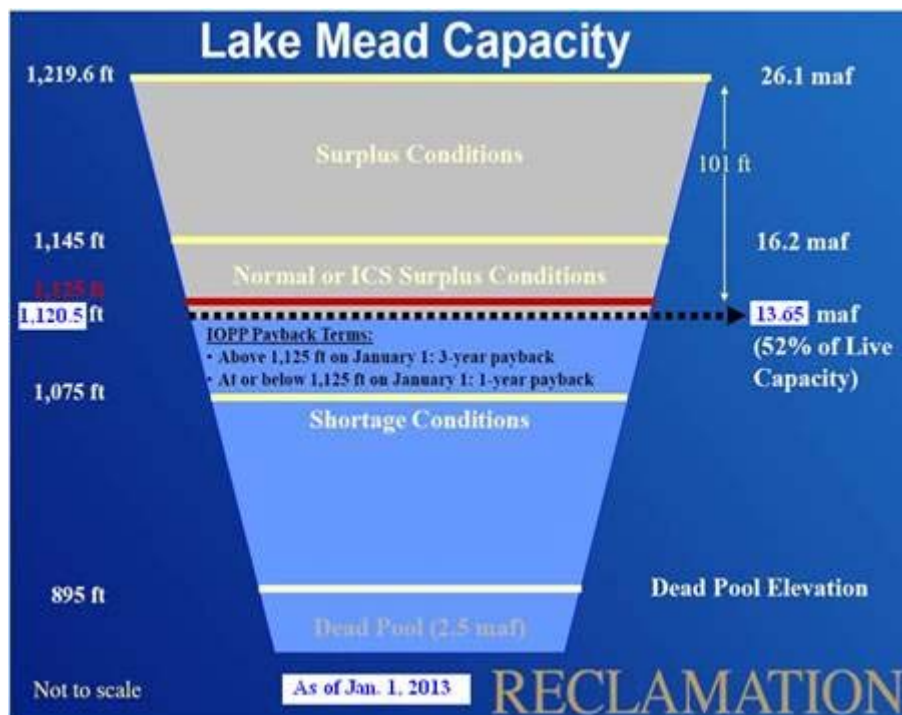
EDP Apportionment will be established for each of the next several years, if not for the duration of the QSA/Transfer Agreements.. For purposes of this WSA, years with a shortage condition that impacts non-agricultural projects such as an IOPP payback obligation constitute “dry” years for IID.

For single-dry year and multiple-dry water year assessments, not only does IID’s EDP govern; but when but so may provisions like sections 3.7 and 3.8 of the 2012 IWSP Water Agreement, as stated above. IOPP payback, EDP Apportionment, and the IWSP are further discussed under single-dry and multiple-dry year projections.

Water Management under EDP Apportionment

On January 1, 2013, the water level in Lake Mead was 1120.5 feet, and for the first time since the IOPP came into effect Lower Colorado River Basin water users face a shortage condition (**Figure 6**). For IID, this means that outstanding overruns must be paid back to the river in calendar years 2013 and 2014 as described below and shown in **Table 9**.

Figure 6 Lake Mead IOPP Schematic



IID's maximum allowable cumulative overrun account is 62,000 AF.²⁵ Thus, for IID's 2011 overrun of 82,662 AF (which was published in 2012), 62,000 AF are to be paid back at the river in calendar year 2013, with the remaining 20,662 AF to be paid back in 2014; however, due to an early payback of 6,290 AF in 2012, IID has 55,710 AF to pay back in 2013 and 20,662 AF of the 2011 overrun to pay back in 2014. In addition, because of the low level of Lake Mead on Jan 1, 2013, IID's entire 2012 overrun of 134,076 AF must be paid back in 2014, for a total of 154,738 AF in 2014. Furthermore, under the terms of the IOPP, no overruns are allowed in year when payback is required.

Table 9: IID Inadvertent Overrun Payback to the Colorado River under the IOPP, 2012-2014

Calendar Year of Payback	2011 Overrun Payback (AF)	2012 Overrun Payback (AF)	Payback Total for Calendar Year (AF)
2013	55,710	-	55,710
2014	20,662	134,076	154,738
Total Payback	76,372	134,076	210,448

Notes: All values are consumptive use volumes at Imperial Dam (AF). 2013 Payback Total was 62 KAF, but in 2012 IID had 6,290 AF of early payback, reducing volume to 55,710 AF

The 2013 IOPP payback obligation and prohibition on overruns in payback years, led the IID Board to implement an apportionment program pursuant to the 2009 Regulations for EDP, which were subsequently revised and modified. The Revised 2013 EDP was version approved and adopted by the IID Board on October 28, 2013 (see Attachment B). The Revised 2013 EDP also establishes an agriculture water clearinghouse to facilitate the movement of apportioned water between agricultural water users and between farm units. This is to allow growers and IID to balance water demands for different types of crops and soils with the apportionment s that are made. IID's Water Conservation Committee agreed on a July 1, 2013 start date for the agricultural water clearinghouse

Generally, the EDP Apportionment is not expected to impact industrial use. However, given the possibility of continuing drought on the Colorado River and other stressors, provisions such as the 2012 IWSP Water Agreement sections 3.7 and 3.8 as well for dry and multiple dry year water assessment may come into effect. However, IID has agreed to work with project proponents to ensure to the extent possible that the IWSP Water Agreement terms will not negatively impact project operation.

Dry Year Demand

In the case of demand, IID notes that, in general, an inch of rainfall over the IID service area can result in 40,000 to 60,000 AF of reduction in IID's consumptive use of Colorado River water as measured at Imperial Dam. Calendar year 2003 had rainfall of 2.72 inches – the closest in recent years to the 93-year average of 3.15 inches. For this reason, 2003 is deemed

²⁵ For IID Quantified Amount: 3.1 MAFY *10 percent = 310,000 AF allowable cumulative overrun account amount; minimum repayment in a calendar year is the less of 310,000 * 20 percent = 62,000 or the amount in the account, if less than 62,000 AF.

a “normal” year. IID’s projected Net Consumptive Use (CRWDA Exhibit B) amount that year (2003) was 2,978.2 KAF, see Table 7.

Note: USBR 2003 Decree Accounting Report shows actual IID Net Consumptive Use for 2003 as 2,978,223 AF, with an overrun of 14,700 AF, See Table 8

For the selected “dry” water year of 2006, with 0.43 inches of rainfall, IID projected Net Consumptive Use was 2,909,500 AF (Table 3 – CRWDA Exhibit B); actual Net Consumptive Use was 2,909,680 AF (USBR 2006 Decree Accounting report), with an overrun of 18,914 AF, see Table 8. Agronomic and/or agricultural economic conditions always influence individual farm management decisions and practices and, thus, impacted water use in 2006.

Assumption:

For this WSA it is assumed that, during a “dry” year, water availability to Imperial Valley water users will be 50,000 AF less for every inch of rainfall than normal year rainfall (93-year average of 3.15 inches). That in turn, could reduce consumptive use of Colorado River water, especially in a year an inadvertent overrun is not allowed because a payback is in effect and an EDP Apportionment is in effect.

Given:

IID system and AAC “losses” are the same in normal, wet or dry years; and using 2003 as a base, the following give “Normal Year” and “Dry Year” values:

Normal Year:

2003 Projected Net Consumptive Use (CRWDA Exhibit B, at Imperial Dam) = 2,968,400 AF

2003 Effective Rainfall (Imperial Valley) = (3.05 inches) x (50,000 AF) = 157,500 AF

2003 “Normal Year” Water Availability = 2,968,400 AF + 157,500 AF = 3,125,900 AF less “losses”

Dry Year:

2006 Rainfall = 0.43 inches (the driest year since 1956)

2006 Effective Rainfall = (0.43 inches) x (50,000 AF) = 21,500 AF

2006 “Dry Year” Water Availability = 2,968,400 AF + 21,500 AF = 2,989,900 AF less “losses”

This illustrates that water availability in a Dry Year could be around 136,000 AF less than in a Normal Year and that an overrun might be less likely in a Normal Year than in a Dry Year. However, due to the small difference in rainfall in a Dry and Normal year in the arid Imperial Valley, the impact of agricultural economic decisions may override this distinction.

Note that while effective rainfall may or may not reduce the amount of Colorado River water needed by agricultural and urban users, it will positively impact the Salton Sea. Effective rainfall has no impact on IC's use of Colorado River water.

Dry Year Supply

On October 28, 2013, in Board Resolution No. 26-2013, the IID Board approved and adopted modifications to the Revised 2013 Equitable Distribution²⁶. The modified Revised 2013 EDP is the mechanism by which EDP Apportionment is being administered, with specifics for non-agricultural users, as follows:

3.1 Apportionment of Supply. The District shall annually apportion the Available Water Supply among the types of water users in the District using the following criteria:

- a. Municipal Users – Base amount of 2006 usage plus current District-wide average use per capita multiplied by the increase in population since 2006.
- b. Industrial Users – For existing contracts, estimated based on past use, not to exceed contracted amount and contract terms. For new contracts, estimated based on anticipated use, not to exceed contract amount and contract terms, taking into consideration the Integrated Water Resources Management Plan.
- c. Lots, Dairies and Fish Farms – Estimated based upon past use and consideration of future changes.
- d. Environmental Resources Water—Estimated based upon the amount reasonably necessary to achieve the purposes of the District's commitments, taking past use into account.^{24F27}
- e. Agricultural Lands – Subtract the estimated demand for categories in Subsections a through (d) above from the Available Water Supply. Under a Straight Line Apportionment, divide the remaining Available Water Supply by the total number of Eligible Agricultural Acres to determine the Apportionment per Eligible Agricultural Acre. Under a different Method of Apportionment, the Apportionment will be

²⁶ IID Board Resolution 26-2013, approving and adopting the modified Revised 2013 Equitable Distribution Plan. <<http://www.iid.com/Modules/ShowDocument.aspx?documentid=8319>>

²⁷ Environmental Resources Water is water that IID agrees to provide to habitat or other resource areas pursuant to: regulatory permits (excluding water to the Salton Sea relating to transferred water), contract, or voluntarily.

calculated for Eligible Agricultural Acres based on that Method of Apportionment. The full Apportionment of Eligible Agricultural Acres that are no longer receiving agricultural water service (such as renewable energy generation projects) and have been designated as suitable for the Temporary Land Conversion Fallowing Policy, is subject to a District Conservation Assignment.

3.2 Non-Agricultural Water Users

- a. District shall notify Non-Agricultural Users of their Apportionment no later than December 1, prior to the beginning of the Water Year.
- b. Non-Agricultural Water Users shall be allowed to use that amount of water needed for reasonable and beneficial use. If a Non-Agricultural Water User's usage exceeds the amount of apportionment quantified for its usage, the fee for the excess amount of water shall be the Water User's standard water rate plus the Conserved Water Rate [rate specified in the District's Rate Schedule 13].

3.3 Agricultural Water Users

[Text not included in this section, as does not pertain to this Project.]

3.4 IID Board of Directors may terminate the implementation of an annual Apportionment at any time at its discretion or upon recommendation of the Water Conservation Advisory Board. The District shall track actual water demands during the Water Year.

6.2 The General Manager is authorized and directed to do any and all things necessary to implement and effectuate these Regulations in a manner consistent with this policy, including the temporary modification of any dates necessary to facilitate implementation.

For the purposes of IC, Revised 2013 EDP Sections 3.2.a and 3.2.b apply.

Section 3: Water Availability for a 42-Year Period to Meet Projected Demands

IID's quantified Net Consumptive Use at Imperial Dam is documented in CRWDA Exhibit B (**Table 7**), through the year 2057. The decrease in Net Consumptive Use during these years is the result of the AAC lining and on-farm and system efficiency conservation projects by IID and Imperial Valley agricultural water users. Therefore, the reduction in use is designed not to impact the productivity of the Imperial Valley; however, the Salton Sea will be impacted.

IID's Priority 3(a) Quantified Amount of 3.1 MAF annually is guaranteed under the QSA/Transfer Agreements; and the Net Consumptive Use Amount (**Table 7**, Column 11) is generally considered a reliable yield, especially with the ability to overrun and payback the overruns in subsequent years. This becomes problematic only when Lake Mead's elevation is at or below elevation 1,125 feet, and IID has a large volume of overruns to payback in one calendar year instead of three calendar years. This occurred in 2012 such that in 2013 and 2014 IID will be required to pay back over 200,000 AF to the river.

Water availability for this project for a 42-year period is no different from water availability during a single dry year, due to the stability of the water supply.

Expected Water Demands for the Project

The applicant proposes to store and use water from the adjacent IID canals as needed for all process and non-potable needs of the project by way of a Water Supply Agreement with IID under the Interim Water Supply Policy or alternative policy made available by IID. On-site storage facilities will be sized to hold up to six (6) days of non-potable water needs, as well as fire flow needs, in the event of canal outages. Above-ground tank(s) may be included, subject to final design. Water usage by the Project is estimated to be 520 AFY during operation and 1,000 AFY for construction, with construction having a 2-year window. In addition, the Applicant is proposing to use a California Certified Water Supplier to provide drinking water. Project water use is summarized in **Table 10**.

Table 10: Project Water Uses

Use	Acre-Feet per Year
TOTAL WATER USAGE	520

Section 4: Historical Project Area Water Consumption, Expected Project Water Demands, and Conservation Objectives

This section provides a comparison summary of the expected water demand for IC during construction and operation against the average annual historical consumption for the IC area. Project design data was used to calculate the project's water consumption during construction and at build-out collectively ("operational"). For the purpose of this analysis construction will take approximately 24-months with a 2015 1st quarter starting date. To be conservative, this WSA assumes the construction period going through 2016, followed by a 40-year analysis of operational water use, for a 42-year total analysis in this WSA, which is above and beyond the 20-year SB-610 mandate. This section also includes a discussion with respect to project water conservation objectives.

Existing Agricultural Water Service

The IC site is currently serviced by IID via the following canals:

- Wistaria - 53, 57, 59
- Wistaria Lateral 2 – 37-A, 44, 46, 48
- Wistaria Lateral 3 – 49, 50A, 50B, 51
- Wistaria Lateral 4 – 61
- Wistaria Lateral 5 – 68-C, 68-D

Construction Water Service

IID offers temporary water service for 12 months per application filed, which the applicant intends to use as the means of supplying water needed for the IC construction period. Multiple applications may be filed with IID.

Operational Water Service

IID has an Interim Water Supply Policy for Non-Agricultural Projects (IWSP), see *Appendix A*. The IWSP allocates 25,000 AFY for non-agricultural projects, and is to remain in effect pending the approval of policies that will be adopted in association with the Final IWRMP, which is projected to make available up to 50,000 AFY of water for similar uses. Of the IWSP's 25,000 AFY, IID has approved two (2) water supply agreements totaling 1,809 AFY under contract. IID recognizes having a remaining balance of IWSP water in the amount of 23,191 AFY. The IWSP will be the source of water for IC unless and until such time as policies and projects such as those proposed in the 2012 Imperial IWRMP are implemented. Said remaining balance of IWSP water is more than the proposed annual operational quantity for IC. (See **Table 10**).

Project Water Conservation

Applicant intends to be conservative with water consumption. The following are conservation measures being considered by applicant, which may be implemented during project construction/operation:

- Interior roadways consisting of gravel / class II base in lieu of dirt surfacing that would require on-going water application for dust suppression.
- Soil binders on stockpiles in lieu of residual water application.
- Drought tolerant landscaping.

Historical Annual Delivery Average

Table 11 takes into consideration the canals and gates that have historically serviced the IC area and provides the historical annual delivery average, which is comprised of mostly 10-year averages per delivery, (1) 7-year average, and (1) single year water usage.

Table 11: Historical Annual Delivery Average
6,870 Acre-feet

Project Operational Water Usage

The following table summarizes annual project operational water use based on the information in the Project Description component of this WSA. The IC area has been analyzed for a total of forty-two years, including construction. See **Table 12**.

Table 12: IC Annual Operational Use			
Year	Construction (AFY)	Operational (AFY)	Total (AFY)
2015 → 2016	1,000 +/-	N/A	1,000 +/-
2017 → 2057	N/A	520 +/-	520 +/-

Agricultural & Operational Comparison

Table 13: Historical Annual Delivery Average & Operational Comparison					
	Agricultural (AFY)	Operational		Operational	
		1 st & 2 nd Years (AFY)		3 th Year through life of Project	
		Use	Decrease	Use	Decrease
Annual Use	6,870	1,000	85.44%	520	92.43%

Public Water System/Lead Agency Findings

1. Imperial Irrigation District (IID) serves as the regional wholesale water supplier, importing raw Colorado River water and delivering it, untreated, to agricultural, municipal, industrial, environmental and recreational water users within its Imperial Unit water service area.
2. IID is the regional surface water wholesaler and delivers raw, untreated Colorado River water to most of the Imperial Valley. IID is not a public water system and does not treat or supply potable water.
3. IID's entitlement to consumptive use of Colorado River water is capped at 3.1 million acre-feet (MAF) pursuant to the Quantification Settlement Agreement. In 2010, IID consumptively used 2,545,593 AF of Colorado River water (volume at Imperial Dam); 2,506,209 AF were delivered to customers of which 2,327,051 AF or 91.4 percent went to agricultural users. The amount delivered to agricultural users was 95.5 percent in 2011.
4. Unless IID undertakes capital supply augmentation projects such as groundwater storage or desalination of brackish groundwater, IID agricultural water deliveries may be impacted by future municipal, commercial and industrial growth in the Imperial Valley.
5. Reduction of IID's net consumptive use of Colorado River water under the terms of the Colorado River Water Delivery Agreement is to be the result of efficiency conservation measures. Agricultural consumptive use in the Imperial Valley will not decline. However, IID operational spill and tailwater will decline, impacting the Salton Sea.
6. Due to the dependability of IID's water rights, Colorado River flows, and Colorado River storage facilities for Colorado River water, it is unlikely that the water supply of IID would be disrupted, even in dry years or under shortage conditions.
7. Due to ongoing Colorado River drought conditions, Lake Mead's declining elevation, reduced inflows from Lake Powell, and the application of the federal Inadvertent Overrun and Payback Policy, which includes the inability of IID to overrun its annual entitlement when paying back previous years' overruns, the IID Board has implemented an annual apportionment program (otherwise known as the Equitable Distribution Plan or EDP).
8. IID's EDP apportions water to its municipal, commercial and industrial users prior to calculating the agricultural apportionment. The agricultural apportionment ranges from 2.86 AF/AC to 7.86 AF/AC for calendar year 2014.

9. Historically, IID has never been denied the right to use the annual volume of water it has available for its consumptive uses under its entitlement.
10. If required under IID's Interim Water Supply Policy (IWSP), water for this Project will be supplied to the Project site via an agreement for water supply with the IID. The water supply agreement will define the conditions under which the Project's water supply might be impacted. Under such conditions, the Project proponent will work with IID to ensure it can manage any reduction. Provided a water supply agreement is approved and executed by IID under the provisions of its IWSP, IID will have a sufficient water supply to support the water demands of this Project.
11. This Project is estimated to use 520 AF of water per year. This is a decrease of 92.43% when compared to Historical Annual Delivery Average for the Project site.
12. Based on the entire record and the environmental document prepared for this Project pursuant to the California Environmental Quality Act, Cal. Public Resources Code sections 21000, et seq., Imperial County hereby finds that the projected water supplies will be sufficient to satisfy the demands of this Project, in addition to existing and planned future uses.

Assessment Conclusion

This Water Supply Assessment has determined that IID water supply is adequate for this project. The Imperial Irrigation District's IWSP for Non-Agricultural Projects has dedicated 25,000 AF of IID's annual water supply to serve new projects. To date 23,191 AF per year remain available for new projects ensuring reasonably sufficient supplies for new non-agricultural water users. The project water demand of approximately 520 AF represents 2.24% of the unallocated supply set aside for non-agricultural projects. As a non-agricultural project, the IC may be susceptible to delivery cutbacks when an EDP Apportionment is in effect, but these cutbacks should be minor and will not affect project operations. The amount of water available and the stability of the water supply chain ensure that this facility's water needs will be met for the next 42 years.

Acronyms

AAC	All-American Canal
AF	Acre-Foot or Acre-feet
AFY	Acre-Feet per Year
CEQA	California Environmental Quality Act
CSA	County Service Area
CVWD	Coachella Valley Water District
DDE	Development Design & Engineering, Inc
DHS	Department of Homeland Security
DOF	California Department of Finances
EDP	Equitable Distribution Plan
EOC	Emergency Operations Center
FEMA	Federal Emergency Management Agency
IC	Iris Cluster
IID	Imperial Irrigation District
IIWRMP	Imperial Integrated Water Resources Management Plan
IWSP	Interim Water Supply Policy
MWD	Metropolitan Water District
NAFTA	North American Free Trade Agreement
OA	Operational Area
PVID	Palo Verde Irrigation District
QSA/ Transfer Agreements	Quantification Settlement Agreement and Related Agreements
REOC	Regional Emergency Operations Center
SB	Senate Bill
SDWA	Safe Drinking Water Acts
SDCWA	San Diego County Water Authority
SDI	Supply Demand Imbalance
SOC	Site Operations Center
SWRCB	California State Water Resources Control Board
TDS	Total Dissolved Solids
WSA	Water Supply Assessment
WWTP	Waste Water Treatment Plant

Resources

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