Calexico Solar Cluster
SB 610 - Water Supply Assessment
Volume 1

Prepared For:

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Purpose

This Water Supply Assessment was prepared for 8minutenergy Renewables, LLC, as the project sponsor, 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 **Mount Signal I** of 82LV 8ME, LLC; **Calexico I** of 88FT 8ME, LLC; and **Calexico II** of 89MA 8ME, LLC, collectively the Calexico Solar Cluster (CSC). 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 SB 610 repealed Section 10913, and added and repealed Section 10657 of the Water Code.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, water supply assessments 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. An 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 Water Supply Assessment if:

- The project meets the definition of the Water Code Section 10912[2]

[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.

After review of Water Code Section 10912, WSF 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.

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(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.
(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

It is anticipated that the lead agency will request a Water Supply Assessment as part of the environmental review for CSC. This study is intended for use by the ICPDS, 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 Water Supply Assessment has determined that IID's water supply in association with the IWSP is sufficient to meet project needs. Imperial Unit water availability has been assessed for a 42-year projection (2012 - 2054), which is concurrent with the proposed construction and operational life of CSC. Applicant seeks to utilize solely IID IWSP water to operate CSC. Since Industrial water users in the Imperial Unit have the 2nd highest apportionment priority for water supply available for equitable distribution during years of supply-demand-imbalance, the project's water supply from IID is considered to be reliable.

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 only approved one (1) water supply agreement in the amount of 800 AFY for the Hudson Ranch I Project. IID recognizes having a remaining balance of IWSP water in the amount of 24,200 AFY, as noted in four (4) letters from IID to Jesse P. Silva dated August 16, 2011 *(Appendices F & G)* as well as in another letter dated September 1, 2011 *(Appendix H)*. The IWSP will be the source of water for CSC unless and until such time as policies and projects perhaps in association with the Final IWRMP are implemented and available so that the applicant may begin to acquire raw water from IID through the Final IWRMP or other means.

This Water Supply Assessment has determined that IID has adequate polices, programs and projects in place to provide water to agricultural, commercial, industrial and municipal users in the Imperial Unit. Adequate supply is currently available as well as during normal water years. IID's EDP is considered to be sufficient to manage water supply during multiple dry water years. Conservation plans and measures are available to reduce the probability of an SDI from occurring. Adequate agreements, plans and policies are in place that enable the Imperial Unit water supply to be considered reliable through the life of the project. Foreseeable planned demands for the source of water for CSC have been noted in this Water Supply Assessment.

The area that would be taken out of agricultural production as a result of CSC is estimated to use 22,207.5 AFY as farmland based on the calculation in Section 4 of this report, which uses a consumption rate of 5.25 acre-feet per acre per year. Based on the history of water delivered to the same area by IID from 2001 - 2010, on average the CSC project area has received 19,588.73 AFY. The applicant proposes to use 1,310 AFY for operation of CSC. When compared to agricultural water usage for the CSC project area the result is a decrease in usage at build-out during operation of 94.10% +/- and 93.31% +/- when compared to an agricultural consumption rate of 5.25 acre-feet per acre per year, and the average of IID's 10-year annual delivery history for the same area respectively. Section 4 of this report provides project vs agricultural water use comparisons for the individual sites comprising CSC, all of which show a decrease in water usage due to the project.

Project Description[3]

The applicants propose to build and operate 3 solar farms. The projects would occupy a total of 4,230 +/- acres of agricultural land by way of CUP. The CSC consists of three sites, Mount Signal I, Calexico I and Calexico II. Between construction and operation the three sites use different quantities of water with Calexico I and Calexico II each consisting of two phases. The following is a description of each site.

Mount Signal I
Applicant proposes to build and operate solar farms west of Calexico and adjacent to the U.S. Border in Imperial County. The project would occupy approximately 1,430 +/- acres of agricultural land and would utilize non-reflective photovoltaic panels to convert sunlight directly into electricity. Mount Signal I is projected/estimated to use 430 +/- acre-feet of water per year for operation, of which 350 +/- AFY would be used to irrigate a cover crop as a dust control measure (alternatively, a soil stabilizer may be used), and 80 +/- AFY would be used for panel washing, domestic use, landscape irrigation, and fire suppression (of O&M buildings only).

Mount Signal I would employ approximately 6 people and developer would supply bottled water or bulk drinking water from an approved provider for employers and visitors. Mount Signal I is projected/estimated to use 2,200 +/- AF of water during construction, which is estimated/projected to be a 6-9 month period. To be conservative this WSA uses a 6 month construction period for Mount Signal I. That said, the first year water usage in the WSA is under a worst case scenario consisting of 2,200 AC-FT used to build the solar farm during the first six months, and half of its estimated annual operation usage (215 ACFT) to operate Mount Signal I for the second half of the first year. Mount Signal I is projected/estimated to be built and producing power by the end of 2012.

Calexico I (2 Phases)
Applicant proposes to build and operate solar farms west of Calexico and adjacent to the U.S. Border in Imperial County. The project would occupy approximately 1,330 +/- acres of agricultural land and would utilize non-reflective photovoltaic panels to convert sunlight directly into electricity. Calexico I is projected/estimated to use 430 +/- acre-feet of water per year for operation, of which 350 +/- AFY would be used to irrigate a cover crop as a dust control measure (alternatively, a soil stabilizer may be used), and 80 +/- AFY would be used for panel washing, domestic use, landscape irrigation, and fire suppression (of O&M buildings only).

Calexico I would employ approximately 12 people and developer would supply bottled water or bulk drinking water from an approved provider for employers and visitors. Calexico I is projected/estimated to use 1,000 +/- AC-FT of water assuming a conservative 12-month construction period, consisting of two phases each lasting 6 months with areas of 720 and 610 +/- acres, each using 500 +/- AC-FT. Calexico I is projected/estimated to be built and producing power by 2013 to 2014.

[3] The Project Description is a summary of data provided by the applicant.

Calexico II (2 Phases)
Applicant proposes to build and operate solar farms west of Calexico and adjacent to the U.S. Border in Imperial County. The project would occupy approximately 1,470 +/- acres of agricultural land and would utilize non-reflective photovoltaic panels to convert sunlight directly into electricity. Calexico II is projected/estimated to use 450 +/- acre-feet of water per year for operation, of which 370 +/- AFY would be used to irrigate a cover crop as a dust control measure (alternatively, a soil stabilizer may be used), and 80 +/- AFY would be used for panel washing, domestic use, landscape irrigation, and fire suppression (of the O&M buildings only).

Calexico II would employ approximately 12 people and developer would supply bottled water or bulk drinking water from an approved provider for employers and visitors. Calexico II is projected/estimated to use 1,000 +/- AC-FT of water assuming a conservative 12-month construction period, consisting of two phases each lasting 6 months with areas of 940 and 530 +/- acres, each using 500+/- AC-FT. Calexico II is projected/estimated to be built- and producing power by 2014.

/

Figure 1: State of California Project Location Map

FIGURE 2: PHASING MAP

PHASING DATA LAYER SOURCE: DD&E, INC.

Service Area Description

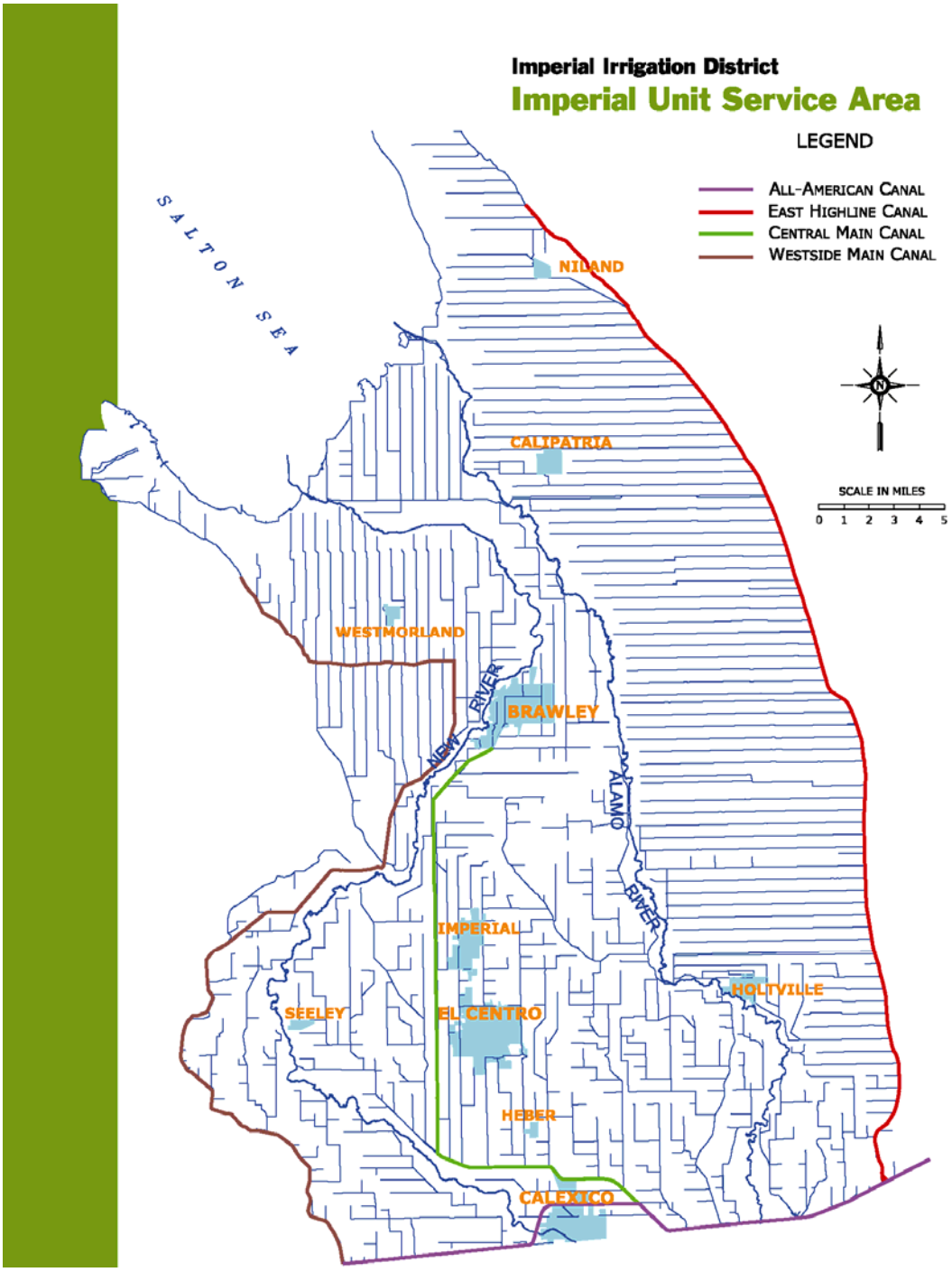
The Project area is located in Imperial County, which is located in the southeastern corner of California and comprised of approximately 4,597 square miles or 2,942,080 acres[4] (**Figure 1**). Imperial County is bordered by San Diego County to the west, Riverside County to the north, the Colorado River/Arizona boundary to the east, and 84 miles of International Boundary with the Republic of Mexico to the south. Within Imperial County, Mount Signal 1, Calexico I, and Calexico II are proposed along the US border west of the City of Calexico.

Approximately fifty percent of land in Imperial County is undeveloped and under federal ownership and jurisdiction. One-fifth of the nearly 3 million acres in Imperial County is irrigated for agricultural purposes, most notable being the central area known as Imperial Valley. The Imperial Valley area is the south-central part of Imperial County and is bounded by Mexico on the south, the Algodones Sand Hills on the east, the Salton Sea on the north, San Diego County on the northwest, and the alluvial fans bordering the Coyote Mountains and the Yuha Desert to the southwest. The Imperial Valley Area encompasses a total of 989,450 acres.[5] Imperial Valley land that is irrigated for agriculture consists of 512,163 acres.[6] The developed area, which includes Imperial County's incorporated cities, unincorporated communities and supporting facilities, comprises approximately one percent of Imperial County's area. The Salton Sea accounts for approximately seven percent of Imperial County's surface area.

IID has a specific area that it is responsible for supplying water to, which is referred to as the Imperial Unit in this document. In addition to agricultural irrigation, the Imperial Unit includes the seven incorporated cities of Brawley, Calexico, Calipatria, El Centro, Holtville, Imperial and Westmorland. The three unincorporated communities in the Imperial Unit are Heber, Niland and Seeley. See **Figure 3** for a map of the Imperial Unit.

[4] Imperial County area was taken from the Imperial County General Plan 2008 Update, Land Use Element, Page 24.
[5] Imperial Valley area was taken from the U.S. Department of Agriculture Soil Conservation Service: Soil Survey of Imperial County California Imperial Valley Area, Page 1.
[6] Imperial County irrigated agriculture area was taken from the Imperial County General Plan 2008 Update, Land Use Element, Page 24.

Figure 3: Imperial Unit Boundary



Source: IID 2005 Annual Water Report, page 1

Imperial Unit Land Uses[7]

IID is a public agency that provides irrigation water and electric power to the lower southeastern portion of California's desert. In April 1998 IID and San Diego County Water Authority signed a historic water transfer agreement, a cornerstone in California's 4.4 Plan to meet future water needs. Established in 1911 under the California Irrigation District Act, IID is governed by a five-member board of directors elected by the public. Board meetings are held twice a month at the district's El Centro division office. The organization is divided into eight functional areas: Executive Offices, Water Department, Power Department, Finance & Treasury, Human Resources, Public Affairs, Information Systems and General Services.

The source of virtually all surface waters in Imperial County is the Colorado River. Water is diverted from the Colorado River at the Palo Verde Weir, north of Blythe by Palo Verde Irrigation District, and at the Imperial Dam through the All-American Canal headworks and desilting basins by Imperial Irrigation District and Bard Irrigation District into the All-American Canal for use in the Bard, Imperial and Coachella Valleys. The district's entitlement of Colorado River water consists of 3.1 million acre-feet per year.

IID's open channel gravity flow irrigation and drainage system services over 500,000 acres of irrigated farmland. The system includes 80 miles of the All-American Canal, 52 miles of drains in the All-American Canal Section, 3 miles of the New Briar Canal and 1,620 miles of other main and lateral canals. A favorable salt balance has been maintained in Imperial Valley soils as approximately 30% more salt was discharged through the district's drainage than was brought into Imperial Valley by importation of Colorado River water for irrigation. This balance is due to the installation of 28,972 miles of underground drain tile in individual fields since 1929. This saline water is then carried through the district's drainage canals into the Salton Sea. Adequate drainage in the Imperial Valley makes the difference between barren land and highly productive soil. As of 2005, there were 1,668 miles of IID canals, which include the All American Canal, mains and laterals. Also as of 2005, there were 1,456 miles of IID drains. The number of pipe lined canals is increasing for projects within or adjacent to urban areas due to real estate development that is occurring in the Imperial Valley.

Agricultural development in the Imperial Valley began at the turn of the twentieth century, and now supports approximately $1,286,066,000 annually in the local agriculture economy. IID delivers Colorado River water to all agricultural land and urban water retailers within its contracted water service area. While the agriculture-based economy is expected to continue, land use will vary somewhat over the years as urbanization and growth occur in rural areas adjacent to existing urban areas.

[7] Specific information in this section is from the Imperial Irrigation District 2005 Annual Water Report.

Imperial Unit Future Land Uses

The economy within the Imperial Unit is gradually becoming more diverse. Agriculture will very likely continue to be the primary industry within the Imperial Unit; however, two principal factors that will cause a decrease or reduction of crop acreage within the Imperial Unit will be real estate development and the economics of the agricultural market. Over the life of CSC, real estate development in Imperial County is expected to reduce the total agriculture land use area in order to accommodate residential, commercial and industrial growth.

The majority of development should occur in and around the seven incorporated cities and three unincorporated communities of Imperial County. The majority of development is expected to remain concentrated near the established urbanized areas for an efficient infrastructure layout. Part of this urban growth is due to the two international border crossings in the Imperial Unit, the Calexico Port of Entry and the International Port of Entry. The Mexican/United States International Port of Entry is located just east of the City of Calexico. It is expected to facilitate urban development within the Imperial Unit since the movement of goods and services has increased dramatically since creation and implementation of the North American Free Trade Agreement (NAFTA).

In addition to development around existing urban areas, development is foreseeable in unincorporated areas that are 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 of Imperial County where further studies are needed for development like Mesquite Lake (Keystone Planning Area). When adopted, a specific plan serves as an amendment to Imperial County's General Plan for a defined area containing area-specific development standards. Another key sector of development specific to Imperial County's unincorporated area is renewable energy. There are a number of existing projects as well as numerous more planned for the future, which will collectively decrease the total agricultural area.

In 2008 the total urban area within the Imperial Unit was 54,055 acres or 5.09% of the total Imperial Unit, which is comprised of 1,061,637 acres.[8] This percentage is likely higher due to real estate development that has occurred between 2008 and 2011. Areas yet to be developed will ultimately be characterized by a level of improvements and municipal services, and will consist of a range of land uses including residential, commercial and industrial. It is anticipated that most areas yet to be developed will eventually be annexed into existing municipal areas, or form new County Service Areas (CSAs). Improvements in developed areas typically include curbs, gutters, sidewalks, sewer, water, storm-drain and roadway surfaces.

[8] Total acreage for urban areas within the Imperial Unit was calculated based on information that was available in the Land Use Element of the Imperial County General Plan 2008 Update, pages 3-5. Imperial Unit area is from the Imperial Irrigation District 2005 Annual Water Report, page 29.

Climate and Topography

Imperial County has an arid desert climate characterized by hot/dry summers and mild winters. Summer temperatures typically exceed 100 degrees Fahrenheit, while winter low temperatures rarely drop below 32 degrees Fahrenheit. The remainder of the year has a relatively mild climate with temperatures averaging in the mid-70's. The average annual air temperature is 72 degrees Fahrenheit, and the average frost-free season is about 300 days per year. The average annual rainfall in the Imperial Valley is less than three inches, with most rainfall associated with brief intense storms. The majority of rainfall occurs from November through March, although periodic summer thunderstorms are common in the region.

The following topographic information was taken from the Soil Survey of Imperial County, California, Imperial Valley Area:

> "Elevation ranges from 230 feet below sea level to about 350 feet above... The physiography of the Imperial Valley is that of a great basin. It is part of the northern extension of the giant geologic trough occupied by the Gulf of California. The portion of the basin within the survey area is bounded on the east by the Chocolate and Cargo Muchacho Mountains and on the west by the Coyote and Fish Creek Mountains. The Imperial Valley is separated from the Gulf of California by the ridge of the Colorado River delta, which is about 30 feet above sea level at its lowest point. The lowest part of the basin is the bed of the prehistoric Lake Cahuilla, where the beach line is about 35 feet above sea level. The deepest part of the lakebed, now filled by the Salton Sea, is about 270 feet below sea level. The shoreline of the Salton Sea was about 230 feet below sea level in 1974."[9]

[9] U.S. Department of Agriculture Soil Conservation Service: Soil Survey of Imperial County California Imperial Valley Area, Page 1.

Projected Population

The following was taken directly from the Imperial County General Plan Land Use Element with regard to population:

> "Imperial County is, and will continue for the foreseeable future to be, a predominately agricultural area, although in 2003 a significant increase in urbanization began to show. Presently, approximately one-fifth (534,328) of the nearly 3 million acres of the County is irrigated for agricultural purposes. In addition, approximately 50 percent of County lands are largely undeveloped and under federal ownership. The developed area where the County's incorporated cities, unincorporated communities, and supporting facilities are situated comprise less than one percent of the land (see Table 1).
>
> Imperial County Planning & Development Services Department bases its population estimates on building permits and housing unit change. From this annual compilation, the Population Research Unit of the California Department of Finance (DOF) estimates the annual change in population. According to the Department of Finance's January 1, 2006 estimates, the population for the unincorporated area is 36,166 with the total population for the County being 166,585. This compares to the 1990 census results of 27,339 for the unincorporated area with the total population for the County being 109,303 and the 2000 census results of 32,772 for the unincorporated area and 147,361 for the entire County (see Table 2). According to DOF 2006 figures, the average household size county-wide is approximately 3.32 persons per household, with the average in cities being 3.42 persons per household and the average in the unincorporated area being 2.96 persons per household.
>
> Population in the unincorporated areas of the County tends to concentrate in agricultural areas and in recreation/retirement communities. Agricultural related communities include the townsites of Heber, Niland and Seeley in the Imperial Valley. Along the Colorado River, in the eastern portion of the County, small population clusters exist within the townsites of Palo Verde and Winterhaven. Recreation/retirement communities include Ocotillo/Nomirage located in the southwest portion of the County, and Hot Mineral Spa and Bombay Beach, on the northeastern shore of the Salton Sea. The West Shores communities of Salton City, Salton Sea Beach, and Desert Shores are also largely retirement and recreation communities, though increasingly their populations are becoming more diversified. These communities

> experience a noticeable increase in population during the winter months when visitors converge to the area to avoid cold/wet winters in other parts of the county.
>
> The seven incorporated cities: Brawley, Calexico, Calipatria, El Centro, Holtville, Imperial, and Westmorland, account for 78.3 percent of the total population (Table 2). In the past, incorporated cities have grown at a faster pace than the rural areas. Recently, residential development has increased in agricultural areas away from cities and communities. This has created conflicts with agriculture, in spite of the County's "Right to Farm" ordinance (see Agriculture Element). Also, treated water is generally not available in these areas and the U.S. Environmental Protection Agency has, by Administrative Order of December 22, 1992, prohibited Imperial Irrigation District from providing service to these residences from untreated canal water. Attempts to resolve this situation, including installation of in-home treatment systems, are on going."[10]

Table 1 provides information that was specified in the Imperial County General Plan Land Use Element with regard to County population levels in 2000 and 2006. The population levels given in the General Plan were used to calculate an estimated population for 2054, the estimated last year of CSC operation. The methods of calculation for the 2054 population in each Area of Interest are as follows:

2054 Unincorporated Areas:
2006 population - 2000 population = difference
36,166 people - 32,773 people = 3,393 people
3,393 people ÷ (2006 - 2000) = 566 people / year
566 people / year * (2054 - 2006) = 27,168 people
36,166 people + 27,168 people = **63,334 people**

2054 Incorporated Areas:
2006 population - 2000 population = difference
130,419 people - 109,588 people = 20,831 people
20,831 people ÷ (2006 - 2000) = 3,472 people / year
3,472 people / year * (2054 - 2006) = 166,656 people
130,419 people + 166,656 people = **297,075 people**

[10] Imperial County General Plan 2008 Update, Land Use Element, pages 22 & 23.

2054 Entire County:
2006 population - 2000 population = difference
166,585 people - 142,361 people = 24,224 people
24,224 people ÷ (2006 - 2000) = 4,038 people / year
4,038 people / year * (2054 - 2006) = 193,824 people
166,585 people + 193,824 people = **360,409 people**

Table 1: Imperial County Population Projections[11]			
Area of Interest	**2000**	**2006**	**2054***
Unincorporated Areas	32,773	36,166	63,334
Incorporated Areas	109,588	130,419	297,075
Entire County	142,361	166,585	360,409

*2054 population estimates were calculated separately for each Area of Interest using the same manner of calculation.

The Imperial County population is closely tied with job and employment availability, which typically results in sharp population increases during winter months. This is because agriculture is the dominant industry in Imperial County, which follows a seasonal pattern of high employment during winter months followed by lower employment during hot summer months, exactly opposite from the seasonal pattern elsewhere in California. As a leading producer of row crops and livestock, Imperial County is experiencing a trend toward reliance on labor contractors to provide workers during the high seasonal demand. As a result population will increase more predominantly in winter months than summer months.

[11] Information for 2000 and 2006 is from the Imperial County General Plan 2008 Update, Land Use Element, page 25.

Imperial Irrigation District's Water Rights[12]

IID's long standing rights to Colorado River water provide supply reliability to IID water users. Industrial water users in the Imperial Unit have the 2nd highest apportionment priority for water supply available for equitable distribution during years of supply-demand-imbalance. That said, raw water from IID is considered to be consistent and reliable and would be available for CSC, even during the instance of supply-demand-imbalance.[13]

IID's California Appropriative Rights

IID's rights to appropriate Colorado River water are long-standing. 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. Pursuant to then-existing California laws, these appropriations were initiated by the posting of public notices for approximately 7 million acre-feet per year ("AFY") at the point of diversion and recording such notices in the office of the county recorder. The individual appropriations were subsequently assigned to the California Development Company whose entire assets, including its water rights, were later bought by the Southern Pacific Company. IID was formed in 1911. On June 22, 1916, the Southern Pacific Company conveyed all of its water rights to IID.

IID's predecessor right holders made reasonable progress in putting their pre-1914 appropriative water rights to beneficial use. By 1929, 424,415 acres of the Imperial Valley's approximately one million irrigable acres was under irrigation.

The Seven-Party Agreement

On November 5, 1930, the Secretary of the Interior requested the California Division of Water Resources to recommend a proper method of apportioning the water which California was entitled to receive under the 1922 Colorado River Compact and the Boulder Canyon Project Act. Thereafter, a number of users and prospective users of Colorado River water entered into the Seven-Party Agreement on August 18, 1931. The Seven-Party Agreement provided a schedule of apportionments and priorities, and the parties requested "the Division of Water Resources to, in all respects, recognize said apportionments and priorities in all matters relating to State authority and to recommend the [apportionment and priority provisions] to the Secretary of the Interior of the United States for insertion in any and all contracts for water made by him pursuant to the terms of the Boulder Canyon Project Act…."

[12] With the exception of the first paragraph the information in this section was taken from East Brawley Geothermal Development Project SB 610 Water Supply Assessment Review, pgs. 13 - 16.
[13] Industrial user supply reliability was taken from the IID Equitable Distribution Plan.

The Seven-Party Agreement states the following apportionments and priorities:

Priority	Description	Annual Acre-feet
1	Palo Verde Irrigation District--gross area of 104,500 acres	3,850,000
2	Yuma Project (Reservation District) - not exceeding a gross area of 25,000 acres	
3a	Imperial Irrigation District and lands in Imperial and Coachella Valleys to be served by AAC	
3b	Palo Verde Irrigation District - 16,000 acres of mesa lands	
4	Metropolitan Water District and/or City of Los Angeles and/or others on coastal plain	550,000
	Subtotal	4,400,000
5a	Metropolitan Water District and/or City of Los Angeles and/or others on coastal plain	550,000
5b	City and/or County of San Diego	112,000
6a	Imperial Irrigation District and lands in Imperial and Coachella Valleys	300,000
6b	Palo Verde Irrigation District - 16,000 acres of mesa lands	
7	Agricultural Use	all remaining water
	Total	5,362,000

As a result of the Seven-Party Agreement, with respect to the signatory parties, IID agreed to limit its California pre-1914 appropriate water rights in quantity and priority to the apportionments and priorities contained in the Seven-Party Agreement.

IID State Applications and Permits

Following execution of the Seven-Party Agreement, IID filed eight applications with the California Division of Water Rights between 1933 and 1936 to appropriate water pursuant to the California Water Commission Act. IID applications each reserved the pre-1914 appropriative rights. However, the applications also incorporated the terms of the Seven-Party Agreement, thus incorporating the apportionment and priority parameters of the Seven-Party Agreement into IID's appropriative applications.

Permits were granted on the applications in 1950. A summary of the issued permits is as follows:

Permit Number	AFY[14]	Place of Diversion	Purpose of Use
7643	7,239,680.25	Imperial Dam	irrigation & domestic
7649	5,791,744.2	Imperial Dam	power-related
7648	4,343,808.15	Imperial Dam	power-related
7647	5,791,744.2	Imperial Dam	power-related
7646	5,791,744.2	Imperial Dam	power-related
7645	5,791,744.2	Imperial Dam	power-related
7644	9,411,584.33	Imperial Dam	power-related
7651	1,447,936.05	Imperial Dam	power-related

IID's Contracts with the Secretary of Interior

Pursuant to the provisions of the Boulder Canyon Project Act adopted in 1929, the California Limitation Act,[15] and the Secretary's contracts with the California water users, California was apportioned 4.4 million AFY out of the lower basin allocation of 7.5 million AFY, plus 50% of any available surplus water. Further apportionment of California's share of Colorado River water was made by the Secretary of the Interior by entering contracts with California right holders. The Secretary entered into a permanent service water delivery contract with IID on December 1, 1932. The District undertook to pay the cost of the works (Imperial Dam and the All-American Canal), and to include within itself certain public lands of the United States and other specific lands. The United States undertook to deliver to the Imperial Dam the water which would be carried by the new canal to the various lands to be served by it. IID's contract with the Secretary incorporated the provisions of the Seven-Party Agreement. IID's contract has no termination date; it is a contract for permanent water service.

The Subordination by CVWD

At the time IID entered into its contract with the Secretary of the Interior, it was anticipated that the lands to be served with Colorado River water in the Coachella Valley to the north would also become a part of IID. However, the Coachella farmers eventually decided that they preferred to have their own delivery contract with the Secretary, and an action was brought by the Coachella Valley Water District ("CVWD") to protest IID's court validation of the 1932 IID water service and repayment contract with the Secretary of the Interior. In 1934, IID and CVWD executed a compromise agreement which paved the way for CVWD to have its own contract with the Secretary, but which provided that

[14] The permits provide rights in cubic feet per second. The conversion to acre-feet is done as follows, with 10,000 cubic feet per second of Permit 7643 as an example: 10,000 x 646,317 (because 1 cubic foot per second equals 40 statute miner's inches or 646,317 gallons per day) = 6,463,170,000 gallons per day. 6,463,170,000 x 365 = 2,359,057,050,000 gallon's per year. 2,359,057,050,000 divided by 325,851 (one acre-foot being equal to 325,851 gallons) = 7,239,680,25 AFY. However, the permits are limited by the terms of the Seven-Party Agreement (discussed above) and the Compromise Agreement (discussed below). In other words, the acre-feet per year numbers are in reality limited to a maximum total of 3.85 million AFY, less water diverted by priority 1 and 2 rights holders under priority 3, and another 300,000 AF under priority 6 and the balance under priority 7.

[15] Act of March 4, 1929; Ch. 16, 48th Sess.; Statutes and Amendments to the Codes, 1929, p. 38-39.

CVWD would subordinate its Colorado River entitlement, in perpetuity, to IID entitlement. In other words, within the third, sixth and seventh priority agricultural pool, as set forth in the Seven-Party Agreement and the various California water delivery contracts, IID's water use takes precedence over CVWD's use. As a practical matter, under the third priority, CVWD receives what is left over from the 3.85 million AFY agricultural pool after uses by Palo Verde, the Yuma project and IID are deducted.

In summary, IID has senior water rights to the Colorado River established under state law, when California is limited to 4.4 million AFY, in the amount of 3.85 million AFY minus the amounts used by Priorities 1 and 2. Priorities 1 and 2 are not fixed quantities and have ranged between 0.36 and 0.6 million AFY over the last 25 years.

IID Present Perfected Rights

The term "Present Perfected Rights" first appeared in the Colorado River Compact executed on November 24, 1922. The Compact provided the "Present Perfected Rights to the beneficial use of waters of the Colorado River system are unimpaired by this Compact." Section 6 of the Boulder Canyon Project Act, effective on June 25, 1929, recognized and protected these rights by providing that "the dam and reservoir…shall be used; second, for irrigation and domestic uses and satisfaction of Present Perfected Rights in pursuance of Article VIII of said Colorado River Compact…" (Emphasis added.) Pursuant to the terms of the Boulder Canyon Project Act, California's 4.4 million AFY of mainstream water was to be used to satisfy "any rights which existed on December 21, 1928." Such "rights" included "Present Perfected Rights" within IID's pre-1914 state-law appropriative rights.

Although the United States Supreme Court in Arizona v. California defined "Perfected Right" and "Present Perfected Rights" in its 1964 Decree, IID's Present Perfected Rights were not quantified until the Supreme Court issued a Supplemental Decree in 1979. That Supplemental Decree defined IID's Present Perfected Rights as a right to Colorado River water:

> In annual quantities not to exceed (i) 2,600,000 acre-feet of diversions from the mainstream or (ii) the consumptive use required for irrigation of 424,145 acres and for the satisfaction of related uses, whichever of (i) or (ii) is less, with a priority date of 1901.

IID's Present Perfected Rights are very important because Article II(B)(3) of the Supreme Court Decree provides that in any year which there is less than 7.5 million acre-feet of mainstream water available for release for consumptive use in Arizona, California and Nevada, the Secretary of the Interior shall first provide for the satisfaction of Present Perfected Rights in the order of their priority dates without regard to state lines before imposing shortage cutbacks on other junior water right holders.

QSA and Related Agreements[16]

QSA Background

Notwithstanding the consensual Colorado River allocation made in the 1930's, as the population continued to increase throughout the west, water resources became scarcer, particularly for urban Southern California. The Metropolitan Water District of Southern California's ("MWD") Colorado River Aqueduct can move almost 1.3 million acre-feet of water per year, yet as one can see from the priorities agreed upon in the Seven-Party Agreement, in "normal flow" years when California is limited to 4.4 million AFY, MWD can only fill about half its aqueduct. MWD's Priority 5 water rights to 650,000 AFY are outside the 4.4 million AFY limit.

For most of the 20th Century, MWD filled its aqueduct with water that was unused by developing states such as Nevada and Arizona. However, as the other Colorado River Lowe Basin States grew into their apportionments, this extra water stopped being available. Many in urban Southern California began to look to IID, and its large water right, as a potential "solution" to this problem.

In compliance with California State Water Resources Control Board ("SWRCB") directives in Decision 1600 and Water Rights Order 88-20, IID entered into a long-term conserved water transfer with MWD in which MWD paid for conservation measures and reaped the benefit of the conserved water. This program, agreed to in 1988 and fully operational by 1998, now provides MWD with an additional 105,000 AFY to supplement its Priority 4 water right. However, that transfer still left MWD and urban Southern California with a need for additional reliable supplies.

The San Diego County Water Authority ("SDCWA"), MWD's largest customer, entered into discussions with IID about a water transfer. In 1998, SDCWA and IID announced a proposed 200,000-300,000 AFY conserved water transfer wherein SDCWA would pay IID to conserve water and SDCWA would receive the benefits of the saved water.

In 1998, SDCWA and IID jointly petitioned the SWRCB for approval of their proposed conserved water transfer. After almost four years of review and two weeks of evidentiary hearings over the course of 2002, late in 2002 the SWRCB issued a conditional approval, SWRCB Order 2002-13. The approval was conditioned upon environmental mitigation under federal and state environmental laws.

Despite the transfer agreement with SDCWA, IID was still facing increasing pressure from other urban Southern California interests, most notably MWD and CVWD, to help resolve their water supply concerns. Additionally, IID, CVWD, and MWD had numerous disputes about their respective water rights, and it appeared such disputes would be heading to litigation. To avoid such litigation, in 2002 all major Southern

[16] The information in this section was taken from East Brawley Geothermal Development Project SB 610 Water Supply Assessment Review, pgs. 16 & 17.

California water agencies, along with the United States and the State of California, negotiated to try and reach settlement termed the Quantification Settlement Agreement ("QSA") by the end of 2002.

However, as the end of 2002 approached, a settlement acceptable to all parties was not found. On December 27, 2002, the Department of Interior issued a letter to IID warning that if IID agreed to the QSA by the end of 2002, IID's water order of 3.1 million AFY would be honored; however, if IID did not agree, then Interior would cut IID's 2003 water supply by about 270,000 acre-feet.

IID filed a federal lawsuit against the United States and various officers thereof in January 2003, and obtained a preliminary injunction against the reduction in IID's 2003 water supply. The Court, however, granted the United States leave to conduct further review of IID's water use. Pursuant to that review, on August 29, 2003, the Regional Director issued a Final Determination and Recommendations ("Part 417 Determination"), which remained subject to appeal to the Secretary of the Interior and then judicial review. In that Part 417 Determination, the Regional Director determined that IID's 2003 3.1 million acre-feet water order should be denied and IID should be allowed to divert only 2,835,500 acre-feet.

IID, the United States, the State of California, the other California water agencies, and other Basin States were on the brink of years of complex litigation over the Part 417 Determination and other disputed issues. All agencies believed that a consensual resolution was preferable to the risks of litigation. After thousands of hours of further negotiations, which involved Congressional leaders, state legislators, senior executives of both the United States and California, as well as many water agencies and environmental groups, consensus was finally reached. The QSA and related agreements were agreed to by all. On October 2, 2003, IID's Board of Directors authorized the signing of the QSA and related agreements after appropriate review and approval of environmental assessments and notice to the public.

QSA Impacts on IID Water Supply

The QSA and related agreements consist of a number of contracts signed at the same time (October 10, 2003). A list of the QSA and related agreements is attached as Exhibit X (see *Appendix A*). The contracts are interrelated and interdependent. They form the basis for overall quantification, settlement and transfers agreed to by the many parties of the QSA and related agreements.

The general impact of the QSA and related agreements as to IID can be described as follows: IID has agreed to 35-75 years of large-scale water conservation in which millions of acre-feet of conserved water will be transferred to urban Southern California and a cap on IID's Priority 3 and a Priority 6 reprioritization with specific volumes. Along with such a conservation and cap, large-scale environmental mitigation will be implemented throughout the affected region, including at the Salton Sea.

The key water supply impacts for IID arising under the QSA and related agreements arise from IID agreement to a Priority 3 cap of 3.1 million AFY and a schedule for creating conserved water for transfer and environmental mitigation that is deducted from the 3.1 million AFY cap. A table identifying the amount and method of creating conserved water (fallowing or efficiency methods) and the purpose of the conserved water (transfer or environmental mitigation) is attached as Exhibit Y (see *Appendix B*). A graphic illustration of how the QSA and related agreements affect IID's Colorado River diversions for IID consumptive use is attached as Exhibit Z (see *Appendix C*). After year 2029 when all conserved water is created by improvement in water use efficiency, IID's reduced diversions allow IID to satisfy the same volume of water demand.

Table 2: QSA Colorado River Use Annual Apportionment Cap for Agricultural Consumptive Use (Excluding Transfers and Exchanges)

User	**Annual Apportionment (AF)**
Palo Verde Irrigation District and Yuma Project	420,000
Imperial Irrigation District	3,100,000
Coachella Valley Water District	330,000
Metropolitan Water District	550,000
Total	**4,400,000**

*PVID & 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.
Source: Imperial Irrigation District 2005 Annual Water Report, page 18.

Figure 4: Colorado River Water Delivery Agreement: Federal Quantification Settlement Agreement for purposes of Section 5(B) of Interim Surplus Guidelines - Exhibit B Quantification and Transfers

CRWDA Federal QSA Exhibit B: IID Quantification and Transfers, as of 2008 (KAF at Imperial Dam)

Col 1	2	3	4	5	6	7	8	9	10	11	12
	IID Priority 3a										
Year	IID Priority 3a Quantified Amount	**IID Reductions** 1988 MWD Transfer[1]	SDCWA Transfer	AAC Lining	Salton Sea Mitigation SDCWA Transfer	Intra-Priority 3 CVWD Transfer	MWD Transfer w\ Salton Sea Restoration	Condi-tional ISG Backfill	Misc. PPRs	IID Total Reduction (Σ Cols 3 -9)	**IID Net Consumptive Use Amount** (Col 2 - Col 11)
2003	3,100	105.1	10	0	5	0	0	0	11.5	131.6	2,968.40
2004	3,100	101.9	20	0	10	0	0	0	11.5	143.4	2,956.60
2005	3,100	101.9	30	0	15	0	0	0	11.5	158.4	2,941.60
2006	3,100	101.1	40	0	20	0	0	9	11.5	181.6	2,918.40
2007	3,100	105	50	0	25	0	0	0	11.5	191.5	2,908.50
2008	3,100	105	50	67.7	25	4	20	0	11.5	283.2	2,816.80
2009	3,100	105	60	67.7	30	8	40	0	11.5	322.2	2,777.80
2010	3,100	105	70	67.7	35	12	60	0	11.5	361.2	2,738.80
2011	3,100	105	80	67.7	40	16	80	0	11.5	400.2	2,699.80
2012	3,100	105	90	67.7	45	21	100	0	11.5	440.2	2,659.80
2013	3,100	105	100	67.7	70	26	100	0	11.5	480.2	2,619.80
2014	3,100	105	100	67.7	90	31	100	0	11.5	505.2	2,594.80
2015	3,100	105	100	67.7	110	36	100	0	11.5	530.2	2,569.80
2016	3,100	105	100	67.7	130	41	100	0	11.5	555.2	2,544.80
2017	3,100	105	100	67.7	150	45	91	0	11.5	570.2	2,529.80
2018	3,100	105	130	67.7	0	63	0	0	11.5	377.2	2,722.80
2019	3,100	105	160	67.7	0	68	0	0	11.5	412.2	2,687.80
2020	3,100	105	193	67.7	0	73	0	0	11.5	450.2	2,649.80
2021	3,100	105	205	67.7	0	78	0	0	11.5	467.2	2,632.80
2022	3,100	105	203	67.7	0	83	0	0	11.5	470.2	2,629.80
2023	3,100	105	200	67.7	0	88	0	0	11.5	472.2	2,627.80
2024	3,100	105	200	67.7	0	93	0	0	11.5	477.2	2,622.80
2025	3,100	105	200	67.7	0	98	0	0	11.5	482.2	2,617.80
2026	3,100	105	200	67.7	0	103	0	0	11.5	487.2	2,612.80
2027	3,100	105	200	67.7	0	103	0	0	11.5	487.2	2,612.80
2028	3,100	105	200	67.7	0	103	0	0	11.5	487.2	2,612.80
'29-37	3,100	105	200	67.7	0	103	0	0	11.5	487.2	2,612.80
'38-47	3,100	105	200	67.7	0	103	0	0	11.5	487.2	2,612.80
'48-77	**3,100**	**105**	**200**	**67.7**	**0**	**100**	**0**	**0**	**11.5**	**484.2**	2,615.80

NOTE: Shaded columns represent amounts that might vary.

[1] By IID and MWD agreement, the 1988 IID/MWD transfer has been fixed at 105 KAFY, starting in 2007.

* Reductions include conservation for 1988 IID/MWD Agreement Transfer, IID/SDCWA Transfer, AAC Lining (amount may vary); SDCWA Transfer Mitigation, additional MWD Transfer w/Salton Sea Restoration (amount may vary), and Misc. PPRs and allow for Conditional Interim Surplus Agreement Backfill (amount may vary). Amounts in this table are independent of increases and reductions as allowed under the Inadvertent Overrun and Payback Policy.

** Assumes SDCWA does not elect termination in year 35.

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

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[17] Information conveyed in this figure is from United States Bureau of Reclamation's Exhibit B of the Colorado River Delivery Agreement (CRWDA); however, IID has adjusted some information to reflect actual values through 2007, draft 2008 data, and provisional estimates for 2009. Years 2003 - 2007 have

Water Supply Sources[18]

Groundwater in the Imperial Unit is generally of poor quality and often unsuitable for domestic or irrigation use. Total dissolved solids (TDS) range from hundreds to more than 10,000 milligrams per liter (mg/l). Generally the groundwater's fluoride concentration is higher than recommended for drinking water, while its boron concentration exceeds that recommended for certain agricultural crops.

Surface water is dependent on inflow of water from the Colorado River, which is non-potable without treatment. There are three general categories of surface water in the Imperial Unit: freshwater, brackish water, and saline water. The freshwater (with TDS generally less than 1,000 ppm) includes Colorado River inflows conveyed by the All American Canal then to other canals and laterals within IID's service area. Brackish water (with TDS in the range of 1,000 to 4,000 ppm) can be found within the Alamo River, New River, and agricultural drains that discharge into these rivers or directly to the Salton Sea. The Alamo River derives nearly all of its flow from the irrigation water return flows (tailwater and tile water) in the Imperial Unit. The New River derives roughly 65 percent of its volume from irrigation water return flows from the Imperial Unit, with the remaining 35 percent derived from drainage that flows from the Mexicali Valley across the International Border. Saline water (with TDS above 4,000 ppm) makes up the Salton Sea as its salinity is approximately 44,000 ppm.[19]

IID serves as the regional water supplier by importing raw Colorado River water and delivering it to agricultural, municipal and industrial water users within its service area. The Imperial Dam is located 20 miles northeast of Yuma Arizona, and serves as IID's point of diversion from the Colorado River to the All American Canal. The All American Canal is an 82-mile long gravity flow canal that services the Imperial Valley via three main canals: East Highline, Central Main, and Westside Main. Through 1,668 miles of canals and laterals IID is able to deliver water throughout the Imperial Unit.

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been recalculated to account for actual IID/MWD transfer amounts. As a result, subsequent water accounting values referenced from other sources and used in this report may appear to be inconsistent with those values conveyed in this figure. MWD will provide CVWD 50,000 AFY of the 100,000 AFY starting in the year 2046. East Brawley Geothermal Development Project SB 610 Water Supply Assessment Review, pg. 7.

[18] Specific information in this section is from Imperial Irrigation District 2005 Annual Water Report, with the exception of the information about saline water as it relates to the Salton Sea.

[19] The salinity of the Salton Sea is from Salton Sea Salinity and Saline Water.

Existing Agricultural Water Service & Proposed Project Water Service / Conservation Options

Existing Agricultural Water Service

The CSC area is currently serviced by several canals over its collective 4,230 AC area as an agricultural land use. Below is a summary of canals and gates currently serving the collective project area, but broken down into the 3 site areas that comprise the CSC.

Mount Signal I

Wisteria: 10, 12, 13, 13 A, 14, 15, 19, 41, 43
Woodbine: 4 A, 4 B, 10;

Calexico I

Woodbine: 19, 20, 24, 24 A, 3, 4, 5 A, 5 B, 5 C, 5 D, 5 E, 11, 11 A, AAC 30, AAC 29

Calexico II

Wisteria: 32, 34 B, 35 A, 35, 42, 7, 7A, 8, 8 A, 9, 11, 11 A, 6, 56, 60

Construction Water Service

IID currently 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 construction of each of the three sites comprising the CSC.

Operational Water Service

IID has developed a Draft Integrated Water Resources Management Plan (IWRMP), see *Appendix D,* and currently has an Interim Water Supply Policy for Non-Agricultural Projects (IWSP), see *Appendix E*. The IWSP currently designates a total of 25,000 AFY for projects that will rely on a water supply from IID during the period of time before adoption of the Final IWRMP. Of the IWSP's 25,000 AFY, IID has only approved one (1) water supply agreement in the amount of 800 AFY for the Hudson Ranch I Project. IID recognizes having a remaining balance of IWSP water in the amount of 24,200 AFY, as noted in four (4) letters from IID to Jesse P. Silva dated August 16, 2011 *(Appendices F & G)* as well as in another letter dated September 1, 2011 *(Appendix H)*. Said remaining balance of IWSP water is more than the proposed annual operational quantity for CSC (See **Table 14).**

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.

Imperial Irrigation District Water Use and Demand

Demand for water in the Imperial Unit service area is divided into three basic categories: agricultural, municipal, and industrial. In 2009 IID delivered 2,350,793 acre-feet of water to the Imperial Unit, where 2,295,779 acre-feet or 97.66 percent of IID's flows in 2009 were to agricultural users.[20] The seven incorporated and three unincorporated urban areas within the Imperial Unit each divert water from IID's canal system to their water treatment facilities prior to individual water user distribution within their respective municipal areas. The primary industrial water users outside the urban areas are geothermal plants, Holly Sugar Corporation, chemical and fertilizer producers, a state prison, and a U.S. Naval Air Facility.

IID is a raw water retailer and a domestic raw water wholesaler, and does not supply potable drinking water. In addition to supplying large agricultural operations with raw water, IID provides raw water to small acreage and service pipe connections, some of which are rural homes without an alternative water source. In these instances, IID has complied with state and federal Safe Drinking Water Acts (SDWA) through an exclusionary process unique to irrigation districts. IID ensures that all rural water users (with indoor uses of canal water) also have a source of water delivered to their property for cooking and drinking purposes from a California Department of Health Services Approved Provider.

IID's delivered water quantities are operational summaries of uses that may include agricultural, small acreage, municipal, industrial, and some losses. Additional water not accounted for in these numbers may include unmeasured deliveries such as service pipes, temporary construction, and miscellaneous uses as well as operational and system losses. There is no available data from one source that completely distinguishes between these uses of raw water. Water distribution systems lose water during distribution for several reasons, where specific water distribution losses depend on the type of distribution system. A piped water distribution system can lose water due to pipe failures or leaks. Open channels, ponds, reservoirs, and water basins can lose water from seepage through the soil, surface evaporation, and plant consumption. IID has an open channel gravity flow water distribution system comprised of over 1,600 miles of laterals and main canals. Its water distribution system losses result from four major conditions: seepage, operational discharges, evaporation, and phreatophyte consumption.

The Consolidated Decree of the U.S. Supreme Court in Arizona v California requires the Secretary of the Interior to provide detailed and accurate records of diversions, return flows, and consumptive use of water diverted from the mainstream of the Colorado River below Lee Ferry (lower Colorado River). The Bureau of Reclamation provides these records annually in a report, "Compilation of Records in Accordance with Article V of the Decree of the Supreme Court of the United States in Arizona v California Dated March 9, 1964", generally referred to as "Decree Accounting Reports."

[20] Total and agricultural delivery quantities for 2009 were the most recent water distribution sums available from the IID, and were taken from the Imperial Irrigation District 2009 Annual Report, pg. 14.

Section 1: Water Availability during a Normal Year

In an effort to prepare this Water Supply Assessment in compliance with SB 610 by addressing water availability during a normal year, this section contains a breakdown of IID's water entitlement and use from 2003 through 2009 (years where USBR Decree Accounting data and IID Quantification Settlement Agreement (QSA) Annual Implementation Report data are available, since implementation of the QSA). IID is limited to 3,100,000 AFY for the term of the QSA. Since implementation of the QSA in 2003 IID has been in an overrun situation in years 2003, 2006 and 2007, and an underrun situation in years 2004, 2005, 2008, 2009 and 2010. Years 2003 – 2009 are assessed in Section 2: Expected Water Availability during Multiple Dry Years. See **Tables 3 and 4.**

Table 3: IID 2003 - 2009 Water Supply and Use (Acre-feet at Imperial Dam)							
	2003	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**
Priority 3a - Basic Entitlement (Cap)*	3,100,000	3,100,000	3,100,000	3,100,000	3,100,000	3,100,000	3,100,000
1988 IID/MWD Transfer	(105,130)	(101,900)	(101,940)	(101,160)	(105,000)	(105,000)	(105,000)
IID/SDCWA Transfer	(10,000)	(20,000)	(30,000)	(40,000)	(50,000)	(50,000)	(60,000)
Salton Sea Mitigation	Delayed till 2004	(15,000)	(15,000)	(20,000)	(50,000)	(26,085)	(30,158)
IID/CVWD Transfer						(4,000)	(8,000)
AAC Lining						(8,898)	(65,577)
Indian & Misc. PPRs	(11,500)	(11,500)	(11,500)	(11,500)	(11,500)	(11,500)	(11,126)
IID Exhibit C Payback		(44,179)	(25,897)	(37,154)	(34,831)		
Intentionally Created Surplus (ICS) Water				(1,000)			(12,000)
Inadvertent Overrun Payback (IOP) Water					(1,263)	(16,197)	
IID Consumptive User per USBR Decree Accounting Records	(2,978,223)	(2,743,909)	(2,756,846)	(2,909,680)	(2,872,754)	(2,825,116)	(2,566,713)
USBR Decree Accounting Report Overrun	6,886			18,914	6,358		
Underrun Reported by USBR		165,000 +/-	160,000 +/-			47,999 +-	237,767 +/-

* QSA Exhibit B, Column 3: IID Consumptive Use Amount at Imperial Dam.

Sources:

Compilation of Records in Accordance with Article V of the Decree of the Supreme Court of the United States in AZ vs. CA dated March 9, 1964 (Decree Accounting Reports), and consultation with Paul Matuska, USBR Lower Colorado River Office, Boulder City, NV.; & IID 2009 Annual QSA Implementation Report.

Section 2: Expected Water Availability during Multiple Dry Years

In an effort to prepare this Water Supply Assessment in compliance with SB 610 by addressing water availability during a single dry year and multiple dry years, the Compilation of Records in Accordance with Article V of the Supreme Court of the United States in Arizona v. California dated March 9, 1964 Calendar Years 1964 – 2010 has been used. Said compilation of records is incorporated into this report by way of reference.

IID's historical consumptive use of Colorado River water was the necessary type of data for use in determining single and multiple dry years of the Imperial Valley. More specifically, the breakdown of IID's water entitlement and use from 2003 through 2009 (years where USBR Decree Accounting data and IID QSA Annual Implementation Report data are available, since implementation of the QSA) are the most appropriate years to assess when determining Dry Years. Upon completion of review of said information it was apparent that 2006 had the largest overrun at 18,914 acre-feet. Since implementation of the QSA in 2003 overruns have occurred in years 2003, 2006 and 2007. There annual overages are 6,886, 18,914 and 6,358 acre-feet respectively as shown in **Table 4**. Since implementation of the QSA underruns have occurred in years 2004, 2005, 2008, 2009 and 2010.

Table 4: Single and Multiple Dry Years*

	Single Dry Year (2006)	Multiple Dry Years		
		2003	2006	2007
Overrun	18,914	6,886	18,914	6,358

*Overruns were taken directly from Table 4.

Supply Management during Supply Demand Imbalance[21]

Preceded by earlier versions of the Equitable Distribution Plan (EDP) the IID Board of Directors adopted Resolution No. 8-2009 on April 7, 2009. Said resolution approved the Regulations for Equitable Distribution Plan dated April 7, 2009 as well as its associated environmental compliance report. The following are incorporated into this report by way of reference and as appendices:

- *Appendix I: IID Resolution No. 8-2009;*
- *Appendix J: Environmental Compliance Report for Revised Regulations for Equitable Distribution, April 7, 2009; and*
- *Appendix K: IID Regulations for Equitable Distribution Revised April 7, 2009.*

[21] Information under this section regarding the Equitable Distribution Plan is from the Imperial Irrigation District Environmental Compliance Report for Revised Regulations for Equitable Distribution Plan, pg 1.

IID Water Conservation

To help reduce the probability of SDI from occurring IID has been and continues to work on water conservation measures. IID has a 2007 Water Conservation Plan consisting of Existing Water Conservation Measures. The three major classifications of the measures are the following:

- IID Water Conservation Programs and Projects;
- IID/MWD Conservation Programs and Projects; and
- IID QSA Programs and Projects

IID's 2007 Water Conservation Plan has been incorporated into this report by way of reference. Further, pages 37 - 42 of said plan are included as *Appendix L.*

In addition to the water conservation measures of IID 2007 Water Conservation Plan are those of the Draft IWRMP. The three major classifications of the measures of the Draft IWRMP are:

- Agricultural Water Use Efficiency and Conservation;
- Urban Water Use Efficiency/Conservation; and
- Renewable Energy Production Water Conservation

For detailed info on such measures refer to *Appendix D.*

Emergency Preparedness

The following is a brief description of IID operations and its mutual aid program with regard to emergency planning, which was taken from the IID website:

> "The Imperial Irrigation District (District) is a public owned utility district. The District is considered a special district in the eyes of the State of California and Federal Government. A special district has to meet the same requirements as a local city pertaining to emergency preparedness and emergency management.
>
> The District is required to go through the appropriate channels regarding mutual aid. In the event of a natural and or manmade disaster, the District would open its Emergency Operations Center (EOC) located at headquarters in Imperial, California. The District will then notify the Operational Area (OA), which is the Imperial County Office of Emergency Services located in Heber, California at the Imperial County Fire Department Station # 2.
>
> If the event called for mutual aid for the District, the District's EOC would request assistance from the OA. If the OA was unable to fulfill this request

> it would go to the next highest level, which would be the Regional Emergency Operations Center (REOC), located in Los Alamitos, California.
>
> In the event the REOC was unable to fill the request it would go to the State Operations Center (SOC) located in Sacramento, California. The SOC would fill the request or ask for federal assistance from the Federal Emergency Management Agency (FEMA) a sub - section of the Federal Department of Homeland Security (DHS)."[22]

In the case of an emergency IID is prepared to utilize its existing facilities to analyze whatever situation(s) maybe present, and administer the necessary procedure(s) to hopefully alleviate the problem. The following was taken from the IID website:

> "The District has a current EOC located at District Headquarters located in the Water Control Conference Room. The conference room can be converted into an active EOC within 30 minutes. The EOC has a back up generator in case of power failure, which is capable of running for 72 hours with out refueling. The EOC is equipped with phones, radios, computers, maps, etc."[23]

[22] Imperial Irrigation District Mutual Aid Program.
[23] Imperial Irrigation District Internal Preparedness.

Section 3: Water Availability for a 42-year Projection

In an effort to prepare this Water Supply Assessment in compliance with SB 610 by addressing water availability for a 42-year projection (life of CSC), this section assesses the water demand from forecasted population through 2054, and projected Imperial Unit water consumption through 2054. This method analyzes water availability from 2012 through and concurrent with the proposed construction and operational life of CSC. **Table 5** shows the forecasted populations that have been calculated using populations for 2000 and 2006 that were provided in the Imperial County General Plan. The method of calculation under the Population Projection component this report was used to calculate estimated populations for the particular years in **Table 5**. In 2012 the population is estimated to be 190,813 with a projected annual consumption of 53,435 AC-FT. In 2054 the population is estimated to be 360,409 with a projected annual consumption of 100,927 AC-FT.

Industrial water users have the 2nd highest priority for supply apportionment during the declaration of an SDI. Industrial use accounts for about 1 percent +/- of all Colorado River water used in the Imperial Unit, whereas agricultural use accounts for approximately 97 percent. Industrial water consumption in the Imperial Unit is considered to be minor when compared to total consumptive use. For these reasons it is foreseeable that adequate water supply should be available to service the forecasted population through 2054.

Table 5: Water Demand Based on Forecasted Population*

Year	Projected Population	Gallons per Year**	Acre-Feet***
2012	190,813	17,411,686,250	53,435
2022	231,193	21,096,361,250	64,742
2032	271,573	24,781,036,250	76,050
2042	311,953	28,465,711,250	87,358
2052	352,333	32,150,386,250	98,666
2054	360,409	32,887,321,250	100,927

*Water consumption levels are only for residential
**Gallons were based on 250 gallons per person per day multiplied by 365 days per year
***1 Acre-foot = approximately 325,851 gallons

Table 6 summarizes the projected water consumption for the Imperial Unit from 2012 through 2054, and uses information from **Figure 4** of this report.

Section 2: Expected Water Availability during Multiple Dry Years of this report covers Supply Management during Supply Demand Imbalance, IID Water Conservation, and Emergency Preparedness. Said components of this report support the notion that adequate water supply is available to service the Imperial Unit through 2054.

Table 6: Projected Imperial Unit Consumption, 2012-2054 (Ac-Ft at Imperial Dam)					
Year	**IID Priority 3a Quantified Amount**	**IID Reduction: Total Amount**	**IID Net Consumptive Use Amount** (Col 2 - Col 3)	**Total County Consumption***	**Beyond Projected Use****
2012	3,100,000	440,200	2,659,800	2,659,800	0
2022	3,100,000	470,200	2,629,800	2,629,800	0
2032	3,100,000	487,200	2,612,800	2,612,800	0
2042	3,100,000	487,200	2,612,800	2,612,800	0
2052	3,100,000	484,200	2,615,800	2,615,800	0
2054	3,100,000	484,200	2,615,800	2,615,800	0

*Based on IID QSA CRWDA obligation to reduce consumptive use in each year
**Beyond Projected Use for each year was calculated by subtracting the total county consumption from IID's Net Consumptive Use Amount, based on CRWDA Exhibit B, adjusted for updated IID/MWD Agreement for transfer of 105,000 acre-feet per year.

Section 4: Agricultural Consumption and Project Water Demands

This section summarizes estimated agricultural consumption for the CSC project area, as well as the estimated water demand for CSC during operation. Estimated Agricultural Consumption #1 is the annual water delivery average for the CSC project area based on 10 consecutive years (2001 - 2010) of delivery records from IID. Estimated Agricultural Consumption #2 uses the 2009 apportionment for agricultural lands in Imperial Valley to estimate the CSC project area agricultural water consumption. Project specific data was used to calculate the project's water consumption during construction and at build-out collectively ("operational"). A comparison of operational and estimated agricultural consumption is provided below.

Estimated Agricultural Consumption #1: Annual Water Delivery Average (2001 - 2010)[24]

The Existing Agricultural Water Service and Proposed Project Water Service / Conservation Options component of this WSA summarizes all canals and gates currently servicing the CSC project area. **Tables 7, 8, 9 and 10** take into consider all canals and gates servicing the CSC project area provide the annual average use.

Table 7: Mount Signal I Annual Water Delivery Average (2001-2010)	
10 Year Total	**Annual Average**
56,434.3 AC-FT	5,643.43 AC-FT

Source: IID

Table 8: Calexico I Annual Water Delivery Average (2001-2010)	
10 Year Total	**Annual Average**
75,168.5 AC-FT	7,516.85 AC-FT

Source: IID

Table 9: Calexico II Annual Water Delivery Average (2001-2010)	
10 Year Total	**Annual Average**
64,284.5 AC-FT	6,428.45 AC-FT

Source: IID

Table 10: CSC Project Area Annual Water Delivery Average (2001-2010)	
10 Year Total	**Annual Average**
195,887.3 AC-FT	19,588.73 AC-FT

Source: IID

[24] All data regarding historical water usage was provided by the Imperial Irrigation District.

Estimated Agricultural Consumption #2:
Estimated Water Usage as Agricultural Land

Estimated Agricultural Consumption #2 is the estimated water usage for the CSC project area based on the 2009 annual apportionment for agricultural lands in Imperial Valley, which is 5.25 acre-feet per acre and from IID Regulations of Equitable Distribution Plan Revised April 7, 2009.

To establish the estimated annual agricultural water usage for the CSC project area and its individual sites, 5.25 acre-feet per acre has been multiplied by the CSC project area and the individual site areas as follows.

- Assumptions Used:
  1. Average annual agricultural water consumption = 5.25 acre-feet per acre
  2. Project area specific to each scenario

- Annual Water Usage for Mount Signal I:
  1. 5.25 acre-feet per year x 1,430 +/- acres
  2. **7,507.5 +/- acre-feet**

- Annual Water Usage for Calexico I:
  1. 5.25 acre-feet per year x 1,330 +/- acres
  2. **6,982.5 acre-feet**

- Annual Water Usage for Calexico II:
  1. 5.25 acre-feet per year x 1,470 +/- acres
  2. **7,717.5 +/- acre-feet**

- Annual Water Usage for the CSC project area:
  1. 5.25 acre-feet per year x 4,230 +/- acres
  2. **22,207.5 +/- acre-feet**

Project Operational Water Usage

The following tables summarize annual project operational water use based on the information in the Project Description component of this WSA. Each site is projected to have a forty year life, with construction of each site commencing approximately 1 year after another. **Table 14** factors in the proposed water use for all three sites.

Table 11: Mount Signal I Annual Operational Use (6 Month Construction Window)			
Project Years	Construction (AC-FT) 1,430 AC +/-	Operational (AC-FT) 1,430 AC +/-	Total (AC-FT) 1,430 AC +/-
2012	2,200 +/-	215 +/-*	2,415 +/-
2013 → 2052	N/A	430 +/-	430 +/-

*Projected to use half of estimated annual usage due to 6 months of operation first year.

Table 12: Calexico I Annual Operational Use (6 Month Construction Window / Phase)					
Project Years	Construction (AC-FT)		Operational (AC-FT)		Total (AC-FT) 1,330 AC +/-
	Phase A 720 AC +/-	Phase B 610 AC +/-	Phase A 720 AC +/-	Phase B 610 AC +/-	
2013	500 +/-	500 +/-	232 +/-	N/A	1,232 +/-
2014 → 2053	N/A	N/A	232 +/-	198 +/-	430 +/-

Table 13: Calexico II Annual Operational Use (6 Month Construction Window / Phase)					
Project Years	Construction (AC-FT)		Operational (AC-FT)		Total (AC-FT) 1,470 AC +/-
	Phase A 940 AC +/-	Phase B 530 AC +/-	Phase A 940 AC +/-	Phase B 530 AC +/-	
2014	500 +/-	500 +/-	288 +/-	N/A	1,288 +/-
2015 → 2054	N/A	N/A	288 +/-	162 +/-	450 +/-

Table 14: CSC Annual Operational Use {3 Sites Collectively}	
Project Years	Total Annual Use
2012	2,415 AC-FT +/-
2013	1,662 AC-FT +/-
2014	2,148 AC-FT +/-
2015 → 2054	1,310 AFY +/-

Agricultural & Operational Comparison - Mount Signal I

Table 15: Use Per 2009 Apportionment & Operational Comparison - Mt. Signal I					
	Agricultural	1st Year		2nd Year Through Life of Project	
		Use	Decrease*	Use	Decrease*
Annual Use	7,508 AC-FT +/-	2,415 AC-FT +/-	67.83%	430 AFY +/-	94.27%

*The Decrease columns represent the percentage decrease in water use as a result of the project.

Table 16: Delivery Average (2001-2010) & Operational Comparison - Mt. Signal I					
	Agricultural	1st Year		2nd Year Through Life of Project	
		Use	Decrease*	Use	Decrease*
Annual Use	5,643 AC-FT +/-	2,415 AC-FT +/-	57.20%	430 AFY +/-	92.38%

*The Decrease columns represent the percentage decrease in water use as a result of the project.

Agricultural & Operational Comparison - Calexico I

Table 17: Use Per 2009 Apportionment & Operational Comparison - Calexico I					
	Agricultural	1st Year		2nd Year Through Life of Project	
		Use	Decrease*	Use	Decrease*
Annual Use	6,983 AC-FT +/-	1,232 AC-FT +/-	82.36%	430 AFY +/-	93.84%

*The Decrease columns represent the percentage decrease in water use as a result of the project.

Table 18: Delivery Average (2001-2010) & Operational Comparison - Calexico I					
	Agricultural	1st Year		2nd Year Through Life of Project	
		Use	Decrease*	Use	Decrease*
Annual Use	7,517 AC-FT +/-	1,232 AC-FT +/	83.62%	430 AFY +/-	94.28%

*The Decrease columns represent the percentage decrease in water use as a result of the project.

Agricultural & Operational Comparison - Calexico II

Table 19: Use Per 2009 Apportionment & Operational Comparison - Calexico II					
	Agricultural	1st Year		2nd Year Through Life of Project	
		Use	Decrease*	Use	Decrease*
Annual Use	7,718 AC-FT +/-	1,288 AC-FT +/-	83.31%	450 AFY +/-	94.17%

*The Decrease columns represent the percentage decrease in water use as a result of the project.

Table 20: Delivery Average (2001-2010) & Operational Comparison - Calexico II					
	Agricultural	1st Year		2nd Year Through Life of Project	
		Use	Decrease*	Use	Decrease*
Annual Use	6,428 AC-FT +/-	1,288 AC-FT +/-	79.96%	450 AFY +/-	93.00%

*The Decrease columns represent the percentage decrease in water use as a result of the project.

Agricultural & Operational Comparison - CSC

Table 21: Use Per 2009 Apportionment & Operational Comparison - CSC									
	Ag.	2012		2013		2014		2015 → 2054	
		Use	%*	Use	%*	Use	%*	Use	%*
Annual Use	22,208 AC-FT	2,415 AC-FT	89.13	1,662 AC-FT	92.52	2,148 AC-FT	90.33	1,310 AFY	94.10

*The % columns represent the percentage decrease in water use as a result of CSC.

Table 22: Delivery Average (2001-2010) & Operational Comparison - CSC									
	Ag.	2012		2013		2014		2015 → 2054	
		Use	%*	Use	%*	Use	%*	Use	%*
Annual Use	19,589 AC-FT	2,415 AC-FT	87.67	1,662 AC-FT	91.52	2,148 AC-FT	89.03	1,310 AFY	93.31

*The % columns represent the percentage decrease in water use as a result of CSC.

Section 5: Foreseeable Planned Demands to be served by IID

In an effort to prepare this Water Supply Assessment in compliance with SB 610 by addressing foreseeable planned water demands to be served by IID, this section assesses projected Imperial Unit water consumption through 2054. **Table 23** (same as Table 6 under Section 3) summarizes projected water consumption by Imperial Unit users from 2012 through 2054. It uses information from **Figure 4** of this report.

Table 23: Projected Imperial Unit Consumption, 2012-2054 (AF at Imperial Dam)

Year	IID Priority 3a Quantified Amount	IID Reduction: Total Amount	IID Net Consumptive Use Amount (Col 2 - Col 3)	Total County Consumption*	Beyond Projected Use**
2012	3,100,000	440,200	2,659,800	2,659,800	0
2022	3,100,000	470,200	2,629,800	2,629,800	0
2032	3,100,000	487,200	2,612,800	2,612,800	0
2042	3,100,000	487,200	2,612,800	2,612,800	0
2052	3,100,000	484,200	2,615,800	2,615,800	0
2054	3,100,000	484,200	2,615,800	2,615,800	0

*Based on IID QSA CRWDA obligation to reduce consumptive use in each year

**Beyond Projected Use for each year was calculated by subtracting the total county consumption from IID's Net Consumptive Use Amount, based on CRWDA Exhibit B, adjusted for updated IID/MWD Agreement for transfer of 105,000 acre-feet per year.

Findings

1. IID serves as the regional water supplier, importing raw Colorado River water and delivering it, untreated, to agricultural, municipal, and industrial water users within its Service Area.

2. IID is a raw water retailer and a domestic raw water wholesaler, and does not supply potable drinking water.

3. In 2009 IID delivered 2,350,793 acre-feet of water to the Imperial Unit, where 2,295,779 acre-feet or 97.66 percent of IID's flows in 2009 were to agricultural users.

4. As urban growth continues in Imperial County agricultural water use may decline due to the transfer of water consumption to other land uses.

5. In the case of a Supply Demand Imbalance, IID's Equitable Distribution Plan gives water delivery priority to municipal and industrial users over agricultural users.

6. Historically, IID has never been denied the right to use the amount of water it has requested for agricultural purposes and other beneficial uses.

7. The 2003 Quantification Settlement Agreement (QSA) limits IID's consumptive use to 3,100,000 acre-feet per year for the term of the QSA, less transfers and other reductions (see Figure 4).

8. The 2009 annual apportionment for agricultural lands in Imperial Valley is 5.25 acre-feet per acre as per the Regulations of Equitable Distribution Plan Revised April 7, 2009.

9. The area that would be taken out of agricultural production as a result of CSC is estimated to use 22,207.5 AFY as farmland based on the calculation in Section 4 of this report, which uses a consumption rate of 5.25 acre-feet per acre per year. Based on the history of water delivered to the same area by IID from 2001 - 2010, on average the CSC project area has received 19,588.73 AFY. The applicant proposes to use 1,310 AFY for operation of CSC. When compared to agricultural water usage for the CSC project area the result is a decrease in usage at build-out during operation of 94.10% +/- and 93.31% +/- when compared to an agricultural consumption rate of 5.25 acre-feet per acre per year, and the average of IID's 10-year annual delivery history for the same area respectively. Section 4 of this report provides project vs agricultural water use comparisons for the individual sites comprising CSC, all of which show a decrease in water usage due to the project.

10. Industrial water users have the 2nd highest priority for supply apportionment during the declaration of an SDI. Industrial accounts for about 1% +/- of all Colorado River water used in the Imperial Unit, whereas agricultural use accounts for approximately 97 percent. Industrial water consumption in the Imperial Unit is minor when compared to total consumptive use.

Conclusion

This Water Supply Assessment has determined that IID's water supply in association with the IWSP is sufficient to meet project needs. Imperial Unit water availability has been assessed for a 42-year projection (2012 - 2054), which is concurrent with the proposed construction and operational life of CSC. Applicant seeks to utilize solely IID IWSP water to operate CSC. Since Industrial water users in the Imperial Unit have the 2nd highest apportionment priority for water supply available for equitable distribution during years of supply-demand-imbalance, the project's water supply from IID is considered to be reliable.

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 only approved one (1) water supply agreement in the amount of 800 AFY for the Hudson Ranch I Project. IID recognizes having a remaining balance of IWSP water in the amount of 24,200 AFY, as noted in four (4) letters from IID to Jesse P. Silva dated August 16, 2011 *(Appendices F & G)* as well as in another letter dated September 1, 2011 *(Appendix H)*. The IWSP will be the source of water for CSC unless and until such time as policies and projects perhaps in association with the Final IWRMP are implemented and available so that the applicant may begin to acquire raw water from IID through the Final IWRMP or other means.

This Water Supply Assessment has determined that IID has adequate polices, programs and projects in place to provide water to agricultural, commercial, industrial and municipal users in the Imperial Unit. Adequate supply is currently available as well as during normal water years. IID's EDP is considered to be sufficient to manage water supply during multiple dry water years. Conservation plans and measures are available to reduce the probability of an SDI from occurring. Adequate agreements, plans and policies are in place that enable the Imperial Unit water supply to be considered reliable through the life of the project. Foreseeable planned demands for the source of water for CSC have been noted in this Water Supply Assessment.

The area that would be taken out of agricultural production as a result of CSC is estimated to use 22,207.5 AFY as farmland based on the calculation in Section 4 of this report, which uses a consumption rate of 5.25 acre-feet per acre per year. Based on the history of water delivered to the same area by IID from 2001 - 2010, on average the CSC project area has received 19,588.73 AFY. The applicant proposes to use 1,310 AFY for operation of CSC. When compared to agricultural water usage for the CSC project area the result is a decrease in usage at build-out during operation of 94.10% +/- and 93.31% +/- when compared to an agricultural consumption rate of 5.25 acre-feet per acre per year, and the average of IID's 10-year annual delivery history for the same area respectively. Section 4 of this report provides project vs agricultural water use comparisons for the individual sites comprising CSC, all of which show a decrease in water usage due to the project.

Acronyms

AAC	All American Canal
AF	Acre-Foot or Acre-feet
AFY	Acre-Feet per Year
CEQA	California Environmental Quality Act
CSF II	Calipatria Solar Farm II
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
IID	Imperial Irrigation District
IWRMP	Interim 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	Quantification Settlement Agreement
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

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