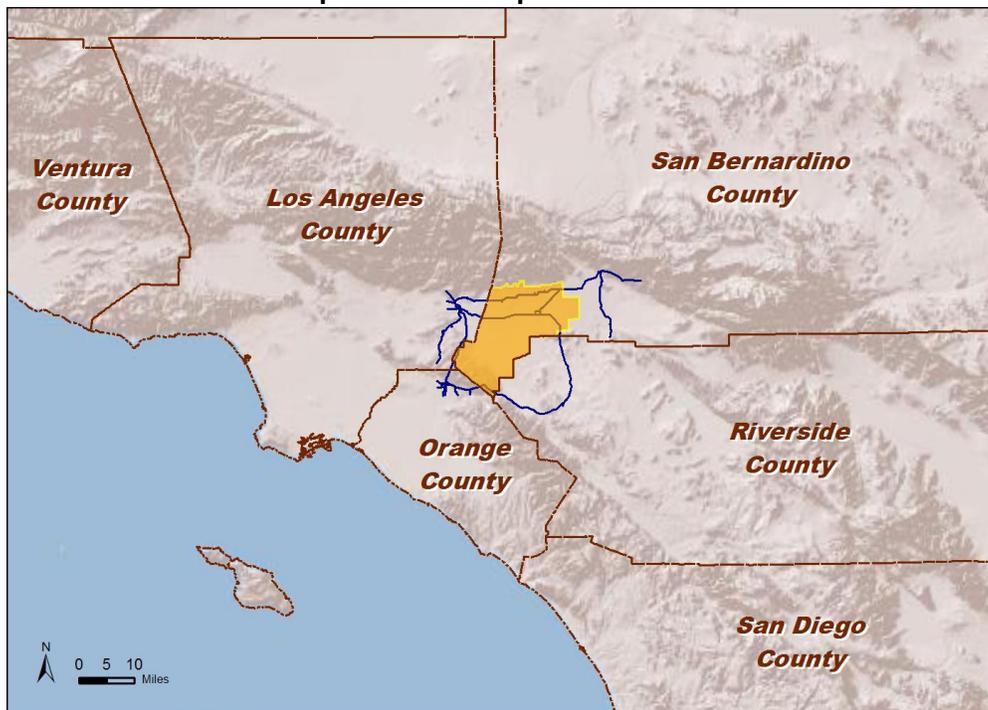


CHAPTER 1 – INTRODUCTION

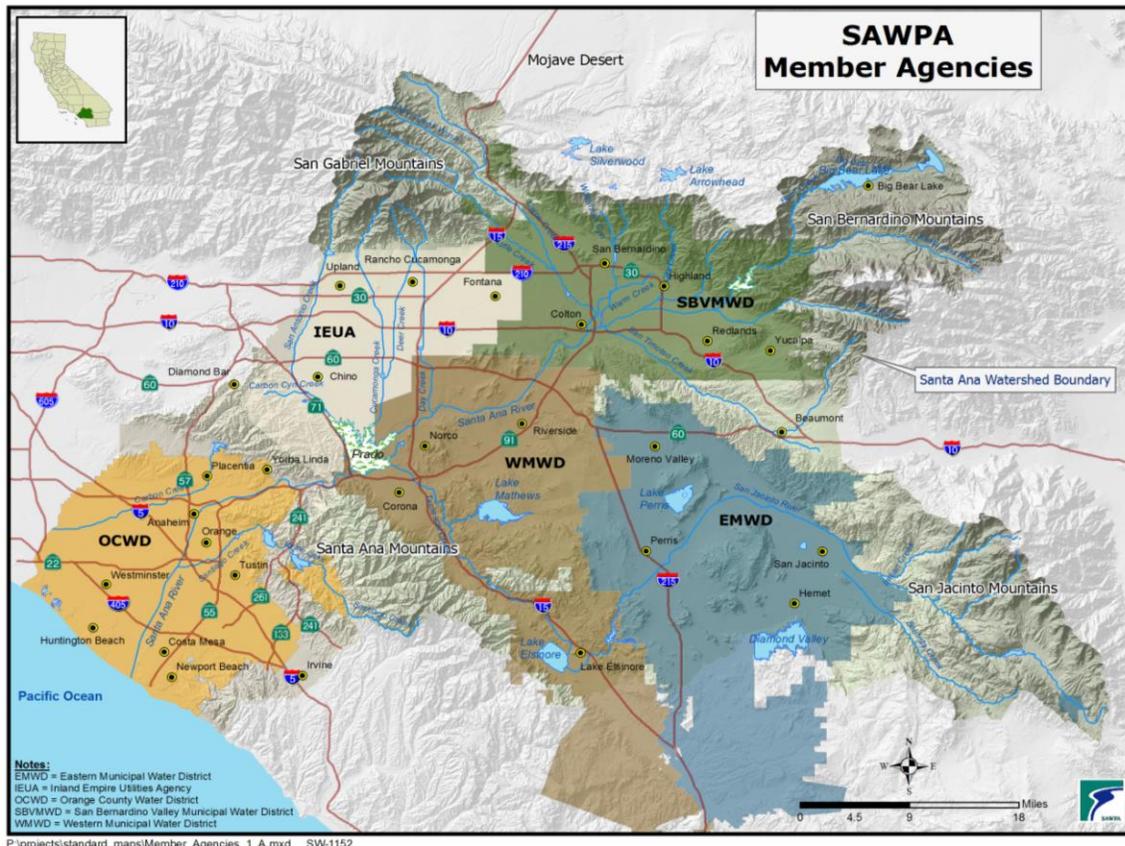
The Inland Empire Utilities Agency (IEUA) provides a number of services for the western portion of San Bernardino County (see Figure 1-1). Current services provided by IEUA include: production of recycled water; sewage collection and treatment; distribution of imported and recycled water supplies; co-composting of manure and municipal biosolids; desalinization of groundwater supplies; and disposal of non-reclaimable industrial wastewater and brine. The IEUA service area is located in the southwestern section of San Bernardino County in the Santa Ana River Watershed (see Figure 1-2). The 242 square mile service area encompasses the Chino Groundwater Basin, which consists of a relatively flat alluvial valley from east to west and slopes from north to south at a one to two percent grade. Valley elevation ranges from about 2,000 feet in the foothills below the San Gabriel Mountains to about 500 feet near Prado Dam.

Figure 1-1
Location Map of Inland Empire Utilities Service Area



The Santa Ana Watershed is the fastest growing area in the United States (current population of 5.3 million is projected to increase by 2 million over the next 25 years). Rapid urban growth will require careful water resources planning and management to ensure adequate water supplies and address water quality management problems.

**Figure 1-2
Santa Ana Watershed Boundary**



The 2010 Urban Water Management Plan (UWMP) was prepared by IEUA staff and describes a regional approach to the management of imported and local water supplies in the Chino Basin service area. The IEUA 2010 UWMP provides guidance to help local agencies to:

- Coordinate water use efficiency programs in a cost effective manner;
- Maximize the beneficial use of recycled water and stormwater and utilization of local groundwater supplies;
- Reduce the need for imported supplies from MWD;
- Coordinate the implementation of the Chino Basin Optimum Basin Management Plan (OBMP) to ensure efficient water resources management;
- Develop a “drought-proofing” and with emergency outage strategy for the region; and
- Provide an integrated and comprehensive strategy for water and wastewater infrastructure development consistent IEUA’s Ten-Year Capital Improvement Plan.

1.1 URBAN WATER MANAGEMENT PLANNING ACT

The IEUA 2010 Urban Water Management Plan (UWMP) has been prepared consistent with the State of California Water Code Sections 10610 through 10656, known as the Urban Water Management Planning Act (Act).

Originally enacted in 1983, the Act requires that every urban water supplier (providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually) prepare and adopt an urban water management plan. The Act requires urban water suppliers to prepare plans that describe and evaluate reasonable and practical efficient water uses, recycling and conservation activities. These plans must be filed with the California Department of Water Resources every five years. The deadline for filing the 2010 plan is July 1, 2011. (IEUA adopted its last UWMP in December 2005).

Since 1983, many amendments have been added to the Act. These amendments require additional actions addressing urban water management plan preparation and consideration of such issues as metering, drought contingency planning, and water recycling. A copy of the most recent Urban Water Management Plan Act is included in Appendix A.

1.2 IEUA's 2010 URBAN WATER MANAGEMENT PLAN

The IEUA prepared a 2005 UWMP in compliance with the Act's 1990 amendment, which requires wholesale water providers to write such a document (the Agency has prepared UWMP's every five years since 1985). This 2010 UWMP is an update of IEUA's 2005 UWMP. It includes a number of significant changes in the region's water planning and management activities that have taken place in the last five years; the Chino Basin Recharge Master Plan Update (2010), the IEUA Long-Term Water Use Efficiency Plan (2010), the IEUA Drought Allocation Plan (2009), SAWPA's Integrated Regional Water Management Plan (2009), the Inland Empire Landscape Alliance (2008) and the IEUA Recycled Water Business Plan (2007).

IEUA's 2010 UWMP was prepared in consultation with the Metropolitan Water District of Southern California (MWD), the Santa Ana Watershed Project Authority (SAWPA), Chino Basin Watermaster (CBWM), Chino Basin Water Conservation District (CBWCD), Cucamonga Valley Water District, San Antonio Water Company, Fontana Water Company, Monte Vista Water District, the cities of Chino, Chino Hills, Montclair, Ontario, Rancho Cucamonga, and Upland, and the California Urban Water Conservation Council of which IEUA is a member.

The specific water management activities being undertaken by the IEUA service area retail water agencies are summarized in this UWMP. Detailed descriptions are documented in each retail agency UWMP. Information from this document will be available to all water agencies in the region to assist in the preparation of their UWMP.

1.3 DWR GUIDANCE

The Department of Water Resources (DWR) has provided detailed guidance to water districts in developing the 2010 Urban Water Management Plans. Appendix G is a copy of DWR's check list for preparing a UWMP in compliance with the water code. Additional information can be found on DWR's web page (www.water.ca.gov). IEUA staff followed the DWR guidelines and checklist in the development of this UWMP.

1.4 IEUA HISTORY AND SERVICE AREA

IEUA was formed as a municipal water district by popular vote of its residents in June 1950 to become a member agency of the Metropolitan Water District of Southern California for the purpose of importing water. Since its formation in 1950, the IEUA has significantly expanded its water and wastewater utility services. These include production of recycled water, distribution of imported and recycled water supplies, sewage treatment, co-composting of manure and municipal biosolids, desalinization of groundwater supplies and disposal of non-reclaimable industrial wastewater and brine.

IEUA serves the cities of Chino, Chino Hills, Ontario and Upland, as well as the Monte Vista Water District, the Cucamonga Valley Water District, the Fontana Water company and the San Antonio Water Company. Approximately 850,000 people reside in the Agency's service area. A five-member Board of Directors governs the Inland Empire Utilities Agency. Each Director is elected by division, Division 1 (Upland/Montclair); Division 2 (Ontario); Division 3 (Chino/Chino Hills); Division 4 (Fontana); Division 5 (Rancho Cucamonga), and serves a four-year term.

1.5 CLIMATE

IEUA's service area is located within the desert climate zone of Southern California. The region receives an average annual rainfall of about 15 inches. Monthly average temperatures range from a low of 67 degrees in January to a high of 95 degrees in July. Daily records show summer temperatures have been as high as 114 degrees. Table 1-1 shows monthly average Eto (Evapotranspiration), rainfall, and temperature within IEUA's service area.

The principal drainage for the Chino Groundwater Basin is the Santa Ana River. It flows sixty-nine miles across the Santa Ana Watershed from its origin in the San Bernardino Mountains to the Pacific Ocean. The Santa Ana River enters the Basin at the Riverside Narrows and flows along the southern Chino boundary to the Prado Flood Control Reservoir where it is eventually discharged through the outlet at Prado Dam and ultimately to the Pacific Ocean. Year-round flow occurs along the entire reach of the Santa Ana River due to surface inflows at Riverside Narrows, discharges from municipal water recycling plants to the Santa Ana River, and rising groundwater.

**Table 1-1
IEUA Service Area Climate¹**

	Jan	Feb	Mar	Apr	May	June	
Standard Monthly Average Eto	2	2.28	3.43	4.62	4.99	6.04	
Average Rainfall (inches)	3.65	2.85	2.8	1.13	0.26	0.04	
Average Temperature (F°)	66.8	69.4	70.1	74.5	79.9	86.7	

	July	Aug	Sept	Oct	Nov	Dec	Annual
Standard Monthly Average Eto	6.98	6.97	5.27	3.96	2.65	2.06	51.25
Average Rainfall (inches)	0.01	0.11	0.34	0.34	1.72	2.07	15.32
Average Temperature (F°)	95	94.4	91.3	83	73.6	68.3	79.4

¹Data provided by NOAA and CIMIS websites

1.6 RETAIL WATER AGENCIES WITHIN IEUA SERVICE AREA

The IEUA service area overlies almost entirely the Chino Groundwater Basin composed of the cities of Chino, Chino Hills, Montclair, Upland, Ontario, Rancho Cucamonga and Fontana and unincorporated areas within San Bernardino County within IEUA’s boundaries. There are eight retail water agencies (Table 1-2) that provide water service to residents in the Agency’s service area. IEUA is a wholesale water agency and does not provide any retail sales to other agencies.

**Table 1-2
Water Agencies within IEUA Service Area**

City of Chino	The City of Chino serves water to approximately 72,000 residents of the city and some unincorporated areas in San Bernardino County.
City of Chino Hills	The City of Chino Hills provides water to approximately 79,000 residents of the City within its 46 square mile service area. The City service area also includes small portions of Chino and Pomona.
Cucamonga Valley Water District	Cucamonga Valley Water District is a retail agency that provides water to approximately 199,000 residents within a 47 square mile area comprised mainly of the City of Rancho Cucamonga. The District also provides water to small portions of the cities of Upland, Ontario, Fontana and unincorporated areas of San Bernardino County.
Fontana Water Company	Fontana Water Company is a retail investor-owned utility company that provides water to approximately 190,000 residents mainly in the City of Fontana, and also serves portions of the cities of Rancho Cucamonga and Rialto, outside the Agency service area.
Monte Vista Water District	Monte Vista Water District is a county water district founded in 1927 that provides retail water services to a population of 52,000 in the City of Montclair, portions of the City of Chino, and unincorporated areas of San Bernardino County between Chino, Ontario, and Pomona. The District is also a wholesale water supplier to the City of Chino Hills, providing up to 21 million gallons of water per day.
City of Ontario	The City of Ontario supplies water to approximately 175,000 residents of the City and some unincorporated areas of San Bernardino County. The City of Ontario also serves a small portion of the City of Rancho Cucamonga.
San Antonio Water Company	San Antonio Water Company is a retail investor-owned utility company that provides water to approximately 3,150 residents in the unincorporated area of the City of Upland.
City of Upland	The City of Upland encompasses 15 square miles and serves water to approximately 75,000 residents.

1.7 REGIONAL WATER AGENCY COORDINATION

There are many agencies involved in water management within the Chino Basin. IEUA is working in cooperation with each of these agencies to achieve water supply reliability, water quality and watershed management goals for the Santa Ana River Watershed and the Southern California region.

Metropolitan Water District of Southern California (MWD)

IEUA is a member of the Metropolitan Water District of Southern California (MWD). MWD is a public agency that provides supplemental imported water from Northern California (State Water Project) and the Colorado River to 26 member agencies located in the coastal plains of Los Angeles, Orange, Riverside, San Bernardino, San Diego and Ventura Counties. Nearly 90% of the population within these counties, about 19 million people, resides within MWD's 5,200 square mile service area. A map of MWD's service area is shown in Chapter 3, Figure 3-5.

As a water wholesaler, MWD has no retail customers. It distributes treated and untreated imported water from the Colorado River and northern California (SWP) to its member agencies. MWD provides an average of 50% of the municipal, industrial and agricultural water used within its service area. The remaining 50% comes from local wells, local surface water, recycling, and from the City of Los Angeles' aqueduct in the eastern Sierra Nevada.

MWD prepares its own Regional Urban Water Management Plan (RUWMP). IEUA's 2010 UWMP was developed with the information provided from MWD's 2010 RUWMP (November 2010).

Finally, MWD currently provides financial support for local water projects and water conservation project implemented by its member agencies that contribute to an increase in the reliable regional water supplies available to the region.

MWD sponsors the Local Resources Program (LRP), established in June 1998, to encourage recovered groundwater projects and the construction of recycled water projects. (It replaces the longstanding Local Projects Program (LPP) and the Groundwater Recovery Program (GRP), originally established in 1982 and 1991, respectively.) IEUA currently receives financial contribution from MWD for the following programs:

- **Local Resources Program (LRP)** – Local agencies may receive up to a maximum of \$250 per acre-foot of firm yield for groundwater recovery projects that treat contaminated groundwater and produce clean water. MWD funds local projects that seek to identify the best way to meet the region's need and provide the greatest return on investment.
- **Local Projects Program (LPP)** – MWD currently provides a financial contribution of \$154 for each new acre-foot of water developed from local water recycling that replaces a demand on MWD's system.

- **Public Sector Program (PSP)** – MWD recently completed a program that contributed up to \$250 per acre-foot for retrofits of existing potable connections to recycled water connections.
- **Conservation Credits Program** – MWD pays the lesser of one-half the program cost or the equivalent of \$195 per acre-foot of water saved through conservation. A variation of this policy provides funding for programs that document water savings.

MWD also provides financial and technical assistance to its member agencies for implementing the water conservation measures, known as Best Management Practices (BMP’s), contained in the Urban Water Conservation Best Management Practices Memorandum of Understanding. The Conservation Credits Program was established in 1988. IEUA currently receives financial contribution from MWD for the following conservation programs:

<p>1. Commercial and Multi-family Save-A-Buck</p>	<p>MWD provides rebates from \$30 to \$3,120 for water saving technologies for indoor and outdoor water use.</p>
<p>2. Residential SoCal Water Smart Program</p>	<p>MWD sponsors a region-wide program that offers single family residents rebates for high efficiency toilets and washers, weather based irrigation controllers, rotating nozzles, and synthetic turf.</p>
<p>3. Enhanced Conservation Program</p>	<p>The Enhanced Conservation Program provides funding directly to MWD member agencies to encourage new and creative approaches to implement urban water conservation.</p>
<p>4. California Friendly Landscape Irrigation Efficiency Training</p>	<p>MWD offers classroom and online training to professional landscapers and the residential community.</p>
<p>5. Community Partnering Program</p>	<p>MWD provides co-sponsorships to support water-related and education community projects, programs, and events.</p>

<p>6. Innovative Conservation Program</p>	<p>The Innovative Conservation Program provides funding for research and development of new and creative ways to conserve water. The participants include public agencies, individuals and organizations.</p>
<p>7. California Friendly Model Homes for New Construction</p>	<p>MWD offers financial incentives to builders who incorporate California Friendly features into new Southern California homes, which include appliances and irrigation devices.</p>
<p>8. Public Sector Program Phase I</p>	<p>MWD provided up-front funding to increase water use efficiency at public facilities through indoor/outdoor water audits, enhanced device incentives, and recycled water hook-ups. Phase II is currently suspended.</p>
<p>9. Water Savings Performance Program</p>	<p>MWD provides incentives for customized water process and irrigation system improvements for both large landscape water use efficiency and industrial process improvements.</p>
<p>10. Pilot Turf Removal Program</p>	<p>Modeled after IEUA's Water Wise Landscape Rebate Program, this program is currently suspended due to the State economic crisis. May in the future provide \$1 per square foot of turf removed for residential and CII customers to assist them in reducing outdoor irrigation.</p>

Santa Ana Watershed Project Authority

IEUA is a member of the Santa Ana Watershed Project Authority (SAWPA). Formed in 1972, SAWPA is a joint powers agency that coordinates regional planning within the Santa Ana Watershed to address water quality and supply improvements. SAWPA is comprised of the five major water supply and wastewater management agencies within the Santa Ana Watershed: Inland Empire Utilities Agency, Eastern Municipal Water District, Orange County Water District, San Bernardino Valley Municipal Water District and Western Municipal Water District.

Since the early 1970's, SAWPA has played a key role in the development and update of the Regional Basin Plan for the Santa Ana Regional Water Quality Control Board. SAWPA conducts water-related investigations and planning studies, and builds facilities needed for regional water supply, wastewater treatment, or water quality remediation. Current studies include the Chino Basin Water Resources Management Study, the Colton-Riverside Conjunctive Use Project, an investigation of water quality in Lake Elsinore, and studies on the nitrogen and organic carbon levels in the Prado Basin.

SAWPA administers the State Water Bond Act (Prop. 13) funds, approved in March, 2000, for the development of water quality and improvement projects within the Watershed. This Bond Measure provides significant funding for the construction of new water supply and treatment infrastructure within the region. Out of the \$235 million approved for the Santa Ana River Watershed, the Chino Basin has received approximately \$87 million for the construction of groundwater desalters, groundwater recharge facilities, and new wells.

In early 2009, SAWPA completed a new integrated water management plan for the region known as "One Water One Watershed," or OWOW. Part of the impetus for starting the OWOW planning process was the passage of Proposition 84 by the California voters in 2006. Proposition 84 allocated \$1 billion to regions with qualifying integrated watershed plans. The OWOW plan provides the basis for seeking Proposition 84 grant funds from DWR and will help to address the significant water supply crisis which has arisen throughout the state. The goal of OWOW is a sustainable watershed that is drought-proofed, salt-balanced, and supports economic and environmental vitality.

Chino Basin Watermaster

IEUA is a member of the Chino Basin Watermaster Board of Directors. The Chino Basin Watermaster (Watermaster) was established in 1978, by a judgment entered by the Superior Court of California. The Judgment requires that the Watermaster develop a management plan for the Chino Groundwater Basin that meets water quality and water quantity objectives for the region.

In 1998, the Watermaster developed an integrated set of water management goals and actions for the Basin. Known as the Optimum Basin Management Program (OBMP), this document describes nine program elements to meet the water quality and local production objectives in the Chino Groundwater Basin (See Chapter 7 – Groundwater Management Programs). The OBMP encourages the increased use of local supplies to help "drought proof" the Chino Basin.

In July 2000, the Watermaster adopted the "Peace Agreement" that ended over 15 years of litigation within the Chino Basin. The Peace Agreement outlined the schedule and actions for implementing the OBMP.

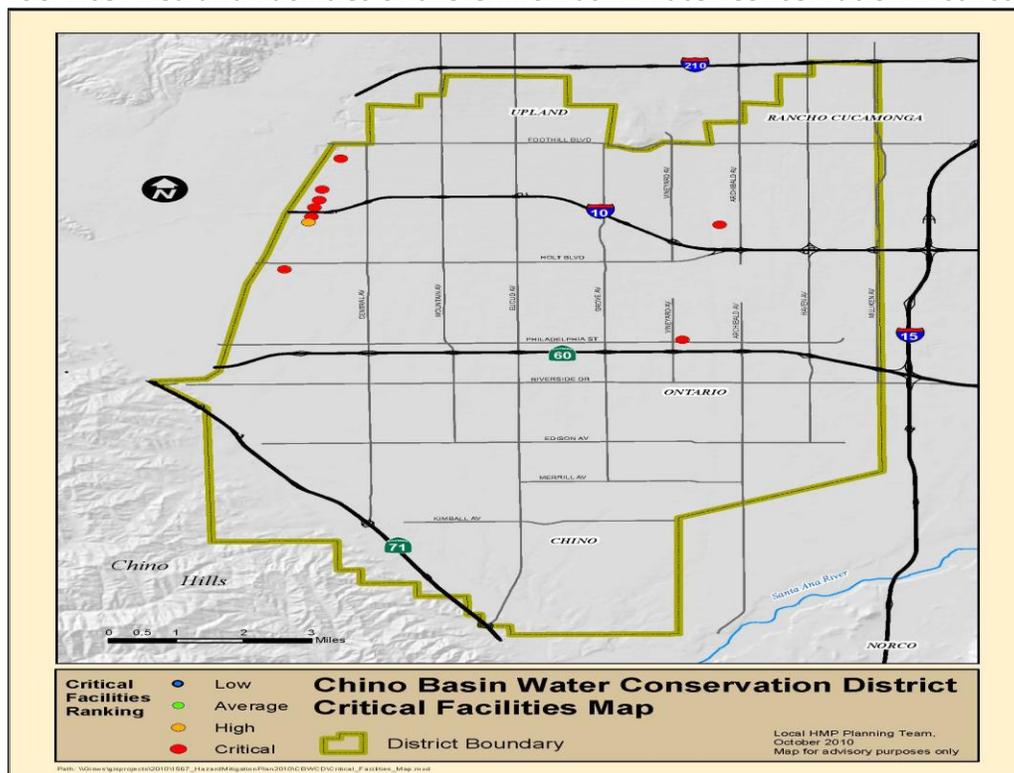
In December 2007, the Watermaster adopted the “Peace II Agreement” which redefines the future programs and actions required to implement the OBMP, based on the past nine years of experience and accomplishments in implementing the OBMP.

Throughout 2009 – 2010, the Watermaster updated the Groundwater Recharge Master Plan in response to changes in demand, recharge capacity, safe yield, and other factors. The Watermaster was required, consistent with the Peace II Agreement and court deadline, to prepare an update of the Master Plan for the Chino Basin by July 2010. The updated Groundwater Recharge Master Plan includes an assessment of safe yield changes and a revised safe yield projection as well as identified opportunities for enhanced storm water, recycled water and imported water recharge (including low impact development, new recharge projects and integrated storm water and supplement water facilities).

Chino Basin Water Conservation District

The Chino Basin Water Conservation District (CBWCD) was established in 1949, to protect and replenish the Chino Groundwater Basin with rainfall and stormwater runoff from the San Gabriel Mountains. CBWCD uses an extensive system of percolation ponds and spreading grounds to augment the natural capacity of the region to capture runoff for the recharge of the groundwater basin. CBWCD also promotes water conservation through public education programs. IEUA works closely with the Chino Basin Water Conservation District. Figure 1-3 is a map of the Conservation District service area.

Figure 1-3
Service Area and Facilities of the Chino Basin Water Conservation District



Santa Ana Regional Water Quality Control Board

The Santa Ana Regional Water Quality Control Board (SARWQCB) is responsible for the development and enforcement of water quality objectives to meet the requirements of the Federal Clean Water Act, California Porter-Cologne Act, and the National Pollution Discharge Elimination System (NPDES).

In 1975, the SARWQCB completed the Water Quality Control Plan (Plan) for the Upper portion of the Santa Ana Watershed. The plan outlined specific water quality management actions to address water quality and salt (total dissolved solids) build up within the Chino Groundwater Basin. These included the construction of a large well field and desalters in the lower part of the Basin to extract and treat poor quality water, the construction of a pipeline to export brines from the upper Basin to the ocean; and the use of large volumes of low TDS water for groundwater recharge.

Since 1975, a brine line (previously known as the Santa Ana River Interceptor or [SARI] line, now known as the Inland Empire Brine Line [IEBL]) has been built and is in operation. In addition, two groundwater desalting plants (Chino I and II) are in place. The 2000 Optimum Basin Management Plan by the Chino Basin Watermaster has been developed to meet the requirements of the 1975 plan.

Chino Basin Desalter Authority

The Chino Basin Desalter Authority (CDA) is a Joint Powers Authority consisting of the cities of Chino, Chino Hills, Norco and Ontario, the Jurupa Community Services District, the Santa Ana River Water Company, Western Municipal Water District and IEUA. The CDA operates and manages the Chino Desalter I and II. These desalter facilities consist of groundwater wells and associated raw water pipelines, treatment facilities, pumps and water distribution pipelines. Treatment facilities include treatment for volatile organic compounds, ion exchange and reverse osmosis. Each of the seven retail water entities has entered into agreements to purchase desalter water.

Water Facilities Authority

The Water Facilities Authority (WFA) is a Joint Power Agency consisting of the cities of Chino, Chino Hills, Ontario and Upland and the Monte Vista Water District. The WFA purchases State Project Water from IEUA and it is delivered through the eastern branch of the California Aqueduct via MWD. The WFA treats this water at the Agua De Lejos Treatment Plant located in Upland. Treatment processes include flocculation and sedimentation, filtration, effluent distribution, and solids handling and waste wash-water processing. Chlorine is used in several of these processes for disinfection, taste and odor control, algae control, and color control.

San Bernardino County Flood Control District

The San Bernardino County Flood Control District (SBCFCD) is partnering with IEUA, Chino Basin Watermaster and Chino Basin Water Conservation District in implementation of the Chino Basin Groundwater Recharge Master Plan. The implementation is known as Chino Basin Facilities Improvement Program (CBFIP). The CBFIP includes modifications to several SBCFCD

basins and flood control channels including the installation of five rubber dams and three drop inlet diversion structures to divert imported, storm and recycled water to 18 groundwater recharge sites.

1.8 COORDINATING ACTIONS

As required by amendments to the Urban Water Management Planning Act, water suppliers are required to send notifications to all cities and counties in the suppliers' service area that the Urban Water Management Plan is being updated and that they are invited to provide comments during the update process. In March 2011, IEUA sent out notices to the County of San Bernardino and the seven cities in the IEUA service area. Copies of the notifications are included in Appendix E.

IEUA is required to coordinate UWMP preparation with local and regional agencies by soliciting their input during the planning process for each UWMP. Table 1-3 provides a list of local and regional agencies and their level of involvement in preparation of this UWMP.

IEUA's 2010 UWMP is the result of integrating multiple local and regional planning documents from IEUA, Metropolitan Water District, Santa Ana Watershed Project Authority, Chino Basin Watermaster, and water supply plans from each of the local retail water agencies.

**Table 1-3
Regional Agencies Involved In IEUA 2010 UWMP Preparation**

	Participated in UWMP Development	Commented on UWMP Draft	Attended Public Meetings	Contacted for Assistance	Received Copy of Draft UWMP	Sent Notice of Intention to Adopt
MWDSC	X			X	X	X
City of Chino	X	X		X	X	X
City of Chino Hills	X			X	X	X
City of Fontana	X				X	X
City of Montclair	X				X	X
City of Ontario	X	X		X	X	X
City of Upland	X			X	X	X
City of Rancho Cucamonga	X				X	X
Cucamonga Valley Water District	X	X		X	X	X
Monte Vista Water District	X	X		X	X	X
Fontana Water Company	X			X	X	X
San Antonio Water Company	X			X	X	X
Santa Ana Watershed	X			X	X	X

Project Authority						
Santa Ana Regional Water Quality Board					X	X
County of San Bernardino					X	X
Water Federation Authority	X			X	X	X
Chino Basin Water Master	X			X	X	X
Chino Basin Water Conservation District	X			X	X	X