CHAPTER 7
REGIONAL GROUNDWATER MANAGEMENT PROGRAMS

7.1 OVERVIEW

Groundwater storage and management within IEUA's service area is the foundation of the integrated water management strategy for the area. As described in Chapter 3, groundwater currently comprises about 60-70% of the current water supplies needed to meet urban water demand.

Groundwater is important both as a core supply and as a resource that can be tapped during dry years to meet the area's water needs. In collaboration with the Chino Basin Watermaster, agencies within IEUA's service area are implementing initiatives, including the Regional Groundwater Recharge Program, Chino Basin Desalter Program, and Dry Year Yield (DYY) Program. These initiatives will substantially increase the overall yield from the Chino Basin, especially during droughts, while improving the basin's water quality.

7.2 GROUNDWATER SOURCES

Chino Basin

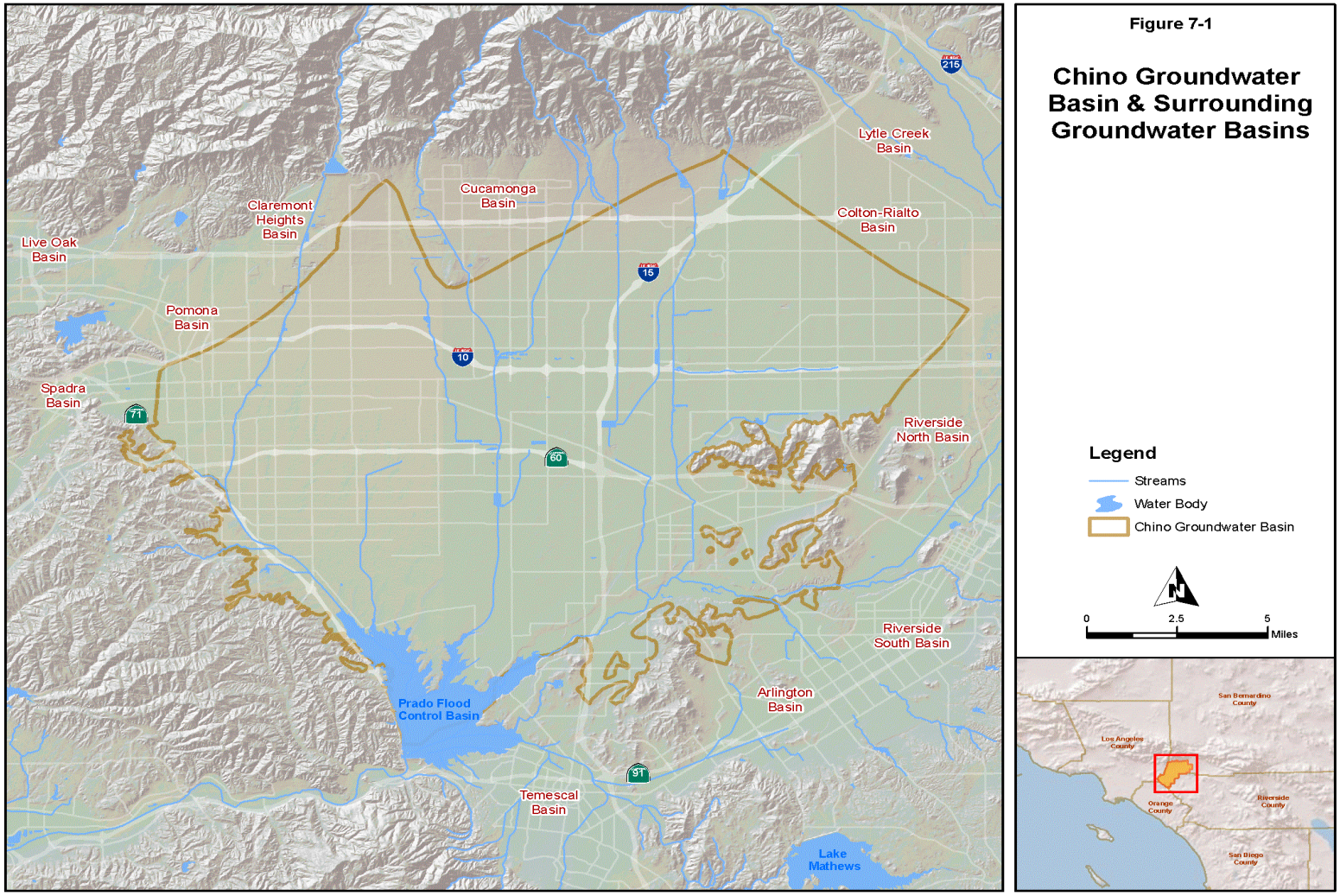
The majority of the groundwater used within IEUA's service area is pumped from the Chino Groundwater Basin, the largest groundwater basin in the Upper Santa Ana Watershed. It currently contains approximately 5 million acre-feet (AF) of water in storage and has an additional unused storage capacity of approximately 1 million AF. Figure 7-1 shows the location and boundaries of the Chino Groundwater Basin.

IEUA's service area covers about 70% of the Chino Groundwater Basin, as shown in Figure 1-2 (see Chapter 1). The water pumped to meet IEUA's service area urban water needs currently represents about 60-70% of the total production from the Chino Basin. As described in Chapter 3, the service area's estimated total groundwater production from the Chino Basin, including water from the desalters, was about 105,000 acre feet per year in 2010. By 2035, the total urban production during normal years (with desalters) is expected to reach 170,000 acre-feet per year.

Other Groundwater Basins

Local groundwater supplies from groundwater basins other than the Chino Groundwater Basin represent a significant source of water for some retail water agencies within IEUA's service area, including the City of Upland, Cucamonga Valley Water District, Fontana Water Company, and San Antonio Water Company. These other groundwater basins include the Claremont Heights, Live Oak, Pomona, and Spadra Basins located in Los Angeles County, the Riverside South and Temescal Basins located

Figure 7-1 Chino Groundwater Basin & Surrounding Groundwater Basins



in Riverside County; and the Colton-Rialto, Cucamonga, Lytle Creek, Bunker Hill, and Riverside North Basins located in San Bernardino County. Figure 7-1 shows the locations of the Chino and surrounding groundwater basins.

As described in Chapter 3, the normal year production from these basins is currently 63,000 acre-feet of which about 40,000 acre-feet per year is used within the IEUA's service area. Over the next two decades, no significant changes are forecasted for the average amount of water supply produced from these basins.

7.3 DESCRIPTION OF THE CHINO GROUNDWATER BASIN

The Chino Basin covers an area of about 235 square miles within the upper Santa Ana Watershed. A majority of the groundwater basin (70%) lies within San Bernardino County. The rest overlaps into Riverside County (20%) and Los Angeles County (10%). The Chino Basin is bounded by Cucamonga Basin and the San Gabriel Mountains to the north, the Temescal Basin to the south, Chino Hills and Puente Hills to the Southwest, San Jose Hills, Pomona and Claremont Basin on the northwest and the Rialto/Colton Basins on the east.

The Chino Basin comprises an alluvial valley that is relatively flat from east to west and slopes from north to south at a 1-2% grade. Valley elevation ranges from about 2,000 feet in the foothills below the San Gabriel Mountains to about 500 feet near Prado Dam.

The geology and hydrology of the basin have been extensively studied. The principal drainage for the Basin is the Santa Ana River. While considered a single groundwater basin from geologic and legal perspectives, the Chino Basin has been hydrologically subdivided into five management zones with three sub-basins. The management zones are shown in Figure 7-2.

Figure 7-2
Chino Groundwater Basins with Management Zones

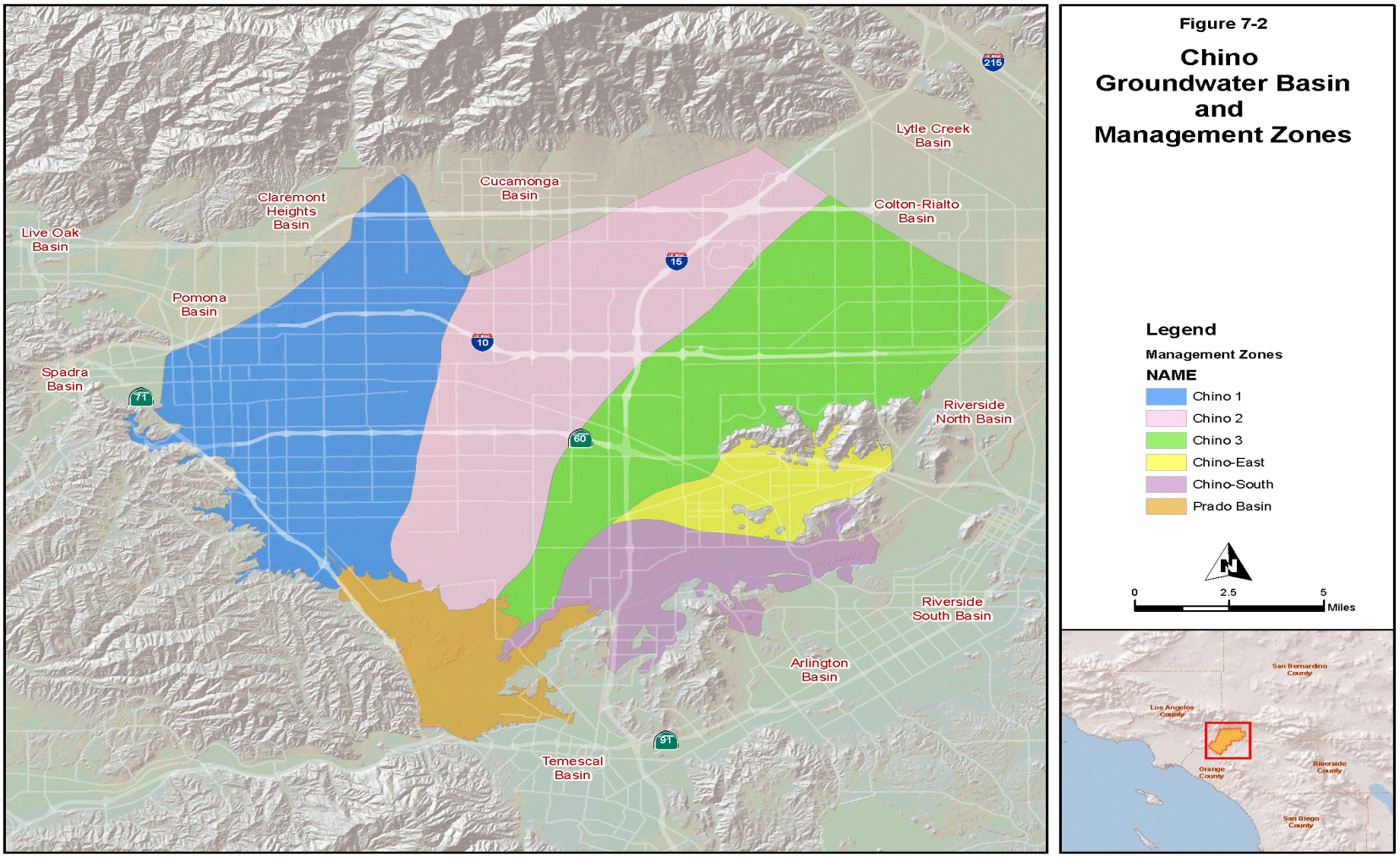
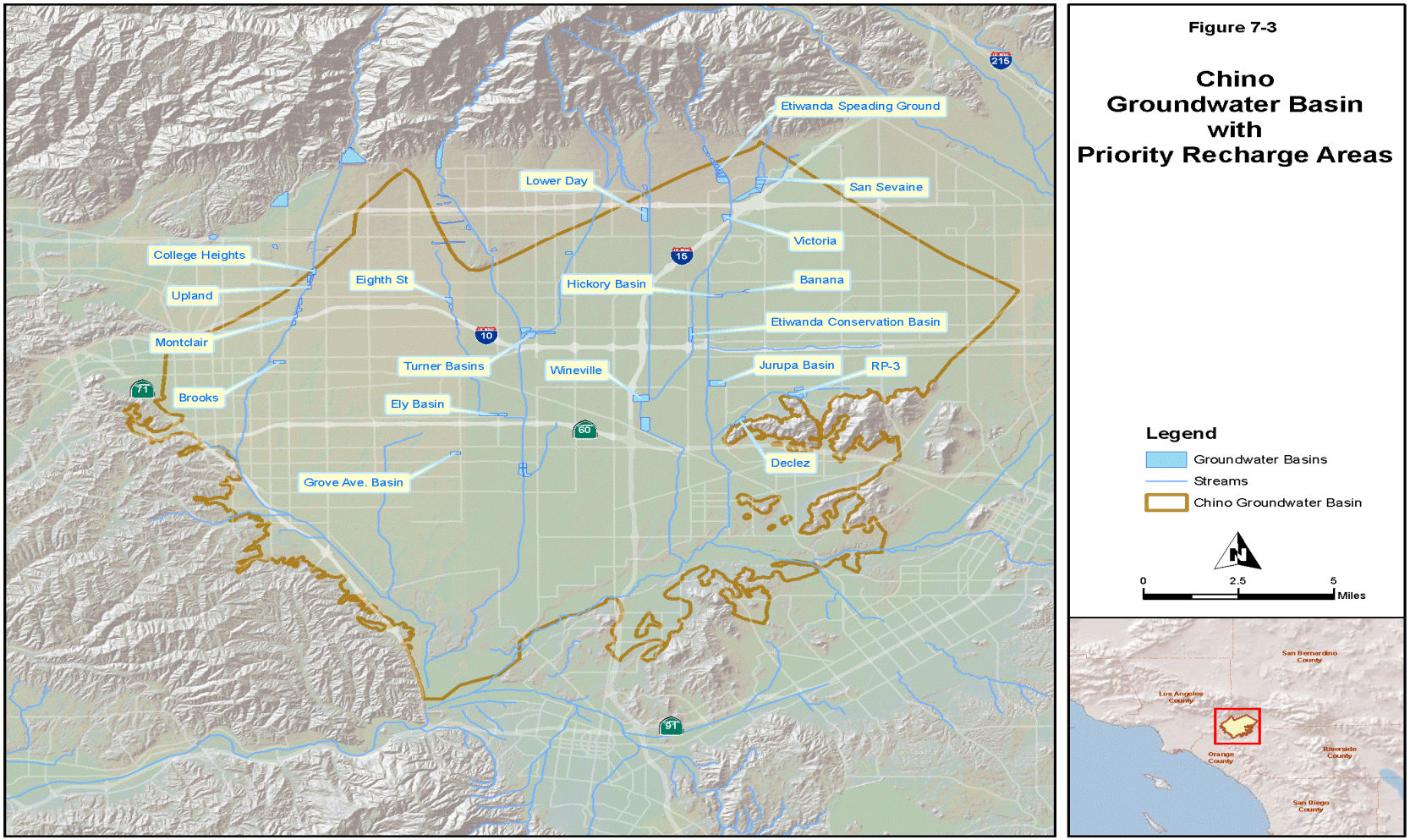


Figure 7-3
Chino Groundwater Basin with Priority Recharge Areas



7.4 MANAGEMENT OF THE CHINO GROUNDWATER BASIN

The Chino Basin Watermaster was established in 1978 by a Superior Court Judgment to administer the water rights for the Chino Groundwater Basin and address both water quality and other management issues. It is comprised of the major Chino Basin water users including cities, water districts, water companies, agricultural, commercial and private concerns.

Chino Basin Watermaster Mission:

"To Manage the Chino Groundwater Basin in the most beneficial manner and to equitably administer and enforce the provisions of the Chino Basin Watermaster Judgment"

Chino Basin Watermaster Appropriators:

Inland Empire Utilities Agency, and the Cities of Chino, Chino Hills, Norco, Pomona, and Upland, the Cucamonga Valley Water District, Jurupa Community Services District, Monte Vista Water District, and West Valley Water District, the Fontana Water Company, Fontana Union Water Company, Marygold Mutual Water Company, Monte Vista Irrigation Company, San Antonio Water Company, Santa Ana River Water Company, Southern California Water Company, and West End Consolidated Water Company, the Los Serranos Country Club, and San Bernardino County (Prado Shooting Park).

Water quality with the groundwater basin also degraded significantly during this time, further compromising the yield from the basin. Historic sources of contamination include conventional point sources, such as leaky underground storage tanks and discharges from industrial and wastewater sources, as well as non-point sources such as land application of fertilizers, infiltration from dairy and other agricultural operations and urban runoff (see Chapter 10).

The 1978 Chino Basin Judgment resulted in the adjudication of the water rights within the Chino Basin. The average safe-yield for the Basin is 145,000 acre-feet per year. This water is allocated among three "pools" of users: the Overlying Agriculture Pool which includes dairy farmers and the State of California (82,800 acre-feet/year), the Overlying Non-Agricultural Pool which includes industrial users (7,350 acre-feet/year) and the Appropriative Pool for urban uses which includes water for municipalities and other government agencies (54,834 acre-feet/year). Table 7-1 and 7-2 provides a breakdown of those entities holding Chino Basin groundwater pumping rights for the Appropriative Pool and the Overlying Non-Agricultural Pool, respectively.

Table 7-1
Chino Groundwater Basin Appropriative Pool Rights[1]

Party	Appropriative Right (AF)	Share of Initial Operating Safe Yield (AF)	Percentage Share Of Operating Safe Yield
City of Chino	5,794.6	4.034.14	7.36
City of Chino Hills	3,033.2	2,111.66	3.85
City of Norco	289.5	201.79	0.37
City of Ontario	16,337.4	11,373.67	20.74
City of Pomona	16,110.5	11,215.75	20.45
City of Upland	4,097.2	2,852.47	5.20
Cucamonga Valley Water District	5,199.2	3,619.59	6.60
Jurupa Community Services District	2,960.7	2,061.21	3.76
Monte Vista County Water District	6,928.8	4,823.75	8.80
West Valley Water District	925.5	644.30	1.18
Fontana Union Water Company	9,188.3	6,392.00	11.66
Fontana Water Company	0.0	1.97	0.000
Los Serranos Country Club	0.0	0.0	0.0
Marygold Mutual Water Company	941.3	655.27	1.20
Monte Vista Irrigation Company	972.1	676.65	1.23
Nicholson Trust		4.000	0.001
San Antonio Water Company	2,164.5	1,506.84	2.75
Santa Ana River Water Company	1,869.3	1,301.214	2.37
Southern California Water Company	590.7	411.26	0.750
West End Consolidated Water Company	1,361.3	947.53	1.73
San Bernardino County (Shooting Park)	0.0	0.0	0.0
Arrowhead Mountain Springs Water Co.	0.0	0.0	0.0
City of Fontana	0.0	0.0	0.0
Niagara Bottling Company	0.0	0.0	0.0
Total	**78,764.10**	**54,835.03**	**100.000**

[1]Data from Chino Basin Watermaster 27th Annual Report (As of June 30, 2004)

Table 7-2
Chino Groundwater Basin Overlying Non-Agricultural Pool Rights

Party	Total Overlying Non-Ag Rights (AF)	Share of Safe Yield (Acre-Feet)
Ameron Steel Producers, Inc.	125	98.86
County of San Bernardino (Airport)	171	133.87
Vulcan Materials Company	406	317.84
CCG Ontario LLC	805	630.27
West Venture Development Co.	0	0
Southern California Edison Co	37	27.96
Reliant Energy, Etiwanda	1,219	954.54
Space Center, Mira Loma	133	104.12
Angelica Rental Service	24	18.79
Sunkist Growers, Inc.	2,393	1,873.40
Swan Lake Mobile Home Park	593	464.24
California Steel Industries	1,660	1,300
Praxair	546	427.45
General Electric Company	0	0
California Speedway	1,277	1,000
Loving Savior of the Hills Lutheran Church	0	0
Total	**9,389**	**7,350.34**

Source: Data from Chino Basin Watermaster 27th Annual Report (As of June 30, 2004)

Additional groundwater production (in excess of the safe yield) is permitted under the Judgment provided that the pumped water is replaced with replenishment water. In addition, groundwater is re-allocated to the Appropriative Pool for urban use from the Overlying Agricultural Pool when it is not pumped by the agricultural users. Over time, as agricultural production declines within the IEUA service area, the reallocation of groundwater to the Appropriative Pool is expected to increase (see Chapter 2, discussion of land use trends).

Management of the Chino Basin is now guided by the "Peace Agreement" of the Optimum Basin Management Program (OBMP) that was approved by the Chino Basin Watermaster and accepted by the Superior Court in 2000. The OBMP constitutes the integrated management plan for the Chino Basin. The goals of the OBMP are:

- **Enhance Basin Water Supplies**. This goal applies not only to local groundwater, but also to all sources of water available for the enhancement of the Chino Groundwater Basin including recharge of storm water runoff and recycled water, treatment and use of contaminated groundwater, reduction of groundwater outflow, and promotion of the direct use of recycled water

- **Protect and Enhance Water Quality.** This goal will be accomplished by implementing activities that capture and dispose of contaminated groundwater, treat contaminated groundwater for direct high-priority beneficial uses, and encourage better management of waste discharges that impact groundwater.

- **Enhance Management of the Basin.** This goal will be achieved by implementing activities that will lead to optimal management of the Chino Basin including optimization of local groundwater storage, development of conjunctive use programs, and encouragement of production patterns that optimize yield and beneficial use and development of alternative water supply sources that maximize availability of groundwater and minimize land subsidence; and,

- **Equitably Finance the OBMP**. This goal will establish an equitable financing plan that will spread the cost of OBMP implementation among the groundwater producers for each individual project required in the OBMP.

The OBMP has nine program elements as follows:

Program Element 1 – Develop and Implement Comprehensive Monitoring Program
The purpose is to increase the quantity and accuracy of information collected regarding surface and groundwater quality, groundwater levels, water use, land subsidence, and other pertinent parameters related to water resources in the basin. These monitoring data will be combined with historic data by the Chino Basin Watermaster for ongoing evaluation of basin conditions, assessment of the effectiveness of the various other components of the OBMP, and future update of the OBMP as appropriate.

Program Element 2 – Develop and Implement Comprehensive Recharge Program
The purpose of this program element is to create a comprehensive program to ensure that the locations of recharge basins (for stormwater and recycled water recharge) are effective enough to maximize groundwater production and decrease outflow to the Santa Ana River.

Program Element 3 – Develop and Implement Water Supply Plan for the Impaired Areas of the Basin
The purpose of this program element is to implement a basin-wide water supply plan which integrates the use of groundwater and imported supplemental water with continued pumping from the impaired areas of the basin. This includes the treatment (desalting) of degraded groundwater for future municipal water supply or other beneficial uses as appropriate.

Program Element 4 – Develop and Implement Comprehensive Groundwater Management Plan for Management Zone 1
The creation of a long-term groundwater management plan will address the continuing problem of subsidence and fissuring in Management Zone 1 so that it is reduced to tolerable levels or completely stopped.

Program Element 5 - Develop and Implement Regional Supplemental Water Program

This program element works to increase the use of stormwater, imported and recycled water (both directly and for groundwater recharge) to sustain, and potentially increase, the yield of the basin while maximizing the use of all available water resources in the basin.

Program Element 6 – Develop and Implement Cooperative Programs with the Regional Water Quality Control Board, Santa Ana Region (Regional Board) and Other Agencies to Improve Basin Management

Due to limited resources available to the Regional Board, the Chino Basin Watermaster will form a water quality committee to review water quality conditions in the Basin and develop (with the Regional Board staff) cooperative strategies and plans to improve water quality in the Basin.

Program Element 7 – Develop and Implement Salt Management Program

Salt management activities include developing a salt management assessment methodology. This methodology will be used to assess, in part, the ongoing effectiveness of the various OBMP components in improving and preserving groundwater quality for long-term beneficial use.

Program Element 8 – Develop and Implement Groundwater Storage Management Program

Storage management will address and protect space in the groundwater basin for storage by all the overlying interests in the basin.

Program Element 9 – Develop and Implement Conjunctive-Use Programs

A conjunctive use program will provide opportunities for both in-basin and outside interests to utilize the large storage space in the groundwater basin toward maximizing local (in-basin) and regional water supplies.

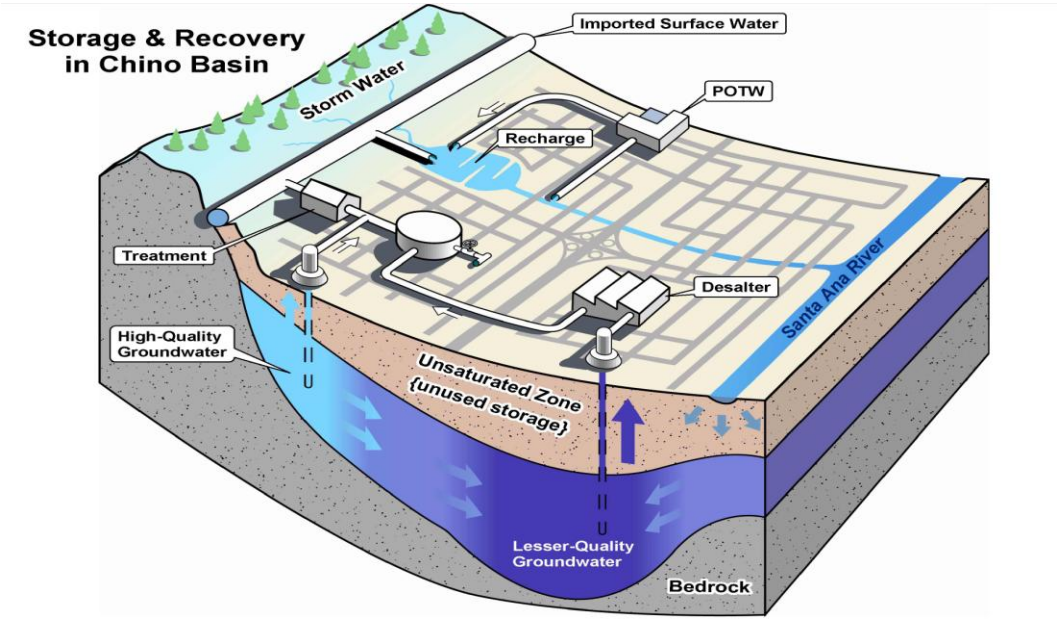
A report on the status of the implementation of the Chino Basin OBMP, entitled "State of the Basin Report," is provided every two years by the Chino Basin Watermaster (to view this report, please visit Chino Basin Watermaster on the web at www.cbwm.org).

7.5 CHINO BASIN GROUNDWATER STORAGE AND RECOVERY PROGRAMS

Since the Chino Basin Judgment was implemented in 1978, total groundwater storage in the Chino Basin has stabilized. Current groundwater production from the Chino Basin (total urban and agricultural production inside and outside the IEUA service area) is 145,000 acre-feet per year. By limiting annual water production to a safe yield level, but still allowing agencies to over pump as needed (provided replenishment water is later purchased and restored to the basin), the local agencies have alleviated overdraft concerns. Through improved management such as hydraulic control (Figure 7-4) of the

groundwater basin, the Chino Basin Watermaster oversees a basin capable of storing 500,000 AF consistent with the PEIR for the OBMP (July 2000).

Figure 7-4
Storage and Recovery in the Chino Basin



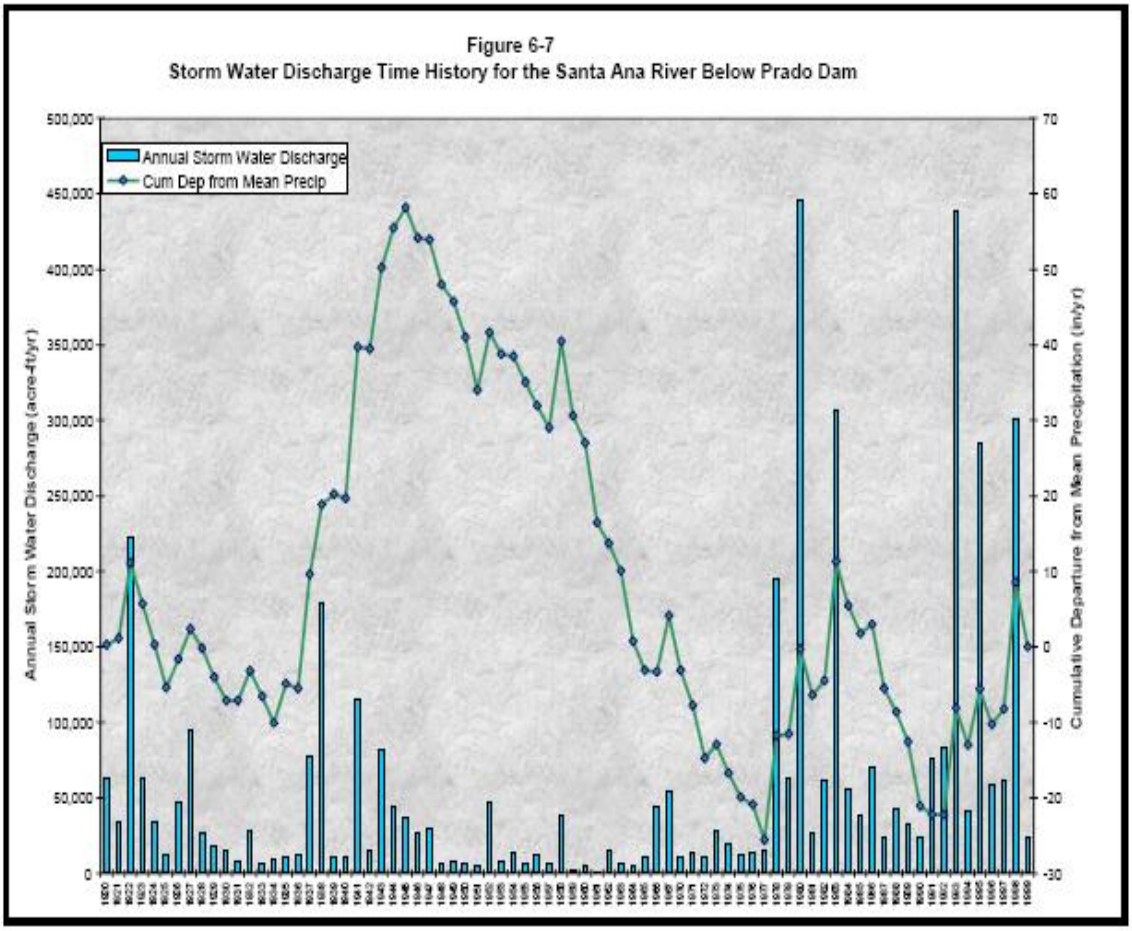
Chino Basin Groundwater Recharge

To enhance groundwater storage, Chino Basin Watermaster has developed a Groundwater Recharge Master Plan (2001) that identified sources of recharge water and the improvements needed in recharge facilities to ensure capture and percolation of this water.

Studies conducted by the Chino Basin Watermaster identified the potential for increasing annual groundwater recharge capacity by over 100,000 AF per year from a combination of improved storm water capture, recycled water and imported water.

Capture of storm water has been identified as a top priority by the Chino Basin Watermaster. Increasing the yield of the Basin with this high quality source of water will improve groundwater quality and increase the assimilative capacity of the Basin. Studies indicate that, as a result of increasing urbanization and the construction of flood control facilities that expedite the conveyance of storm water to the Santa Ana River, the Chino Basin is losing an average of 40,000 AF per year of the storm water that historically recharged the groundwater aquifer. The dramatic increase in runoff from the basin over time can be seen in Figure 7-5. Improvements to the flood control facilities plus modifications to the recharge basins could result in the capture of approximately 23,000 AF per year.

Figure 7-5
Chino Basin Storm Runoff



The second priority for recharge is the use of the high quality recycled water produced at IEUA's wastewater treatment facilities. Over 60,000 acre-feet of recycled water is currently produced and there is approximately 20,000 acre-feet of capacity in the Chino Basin to be recharged. In 2005, the Santa Ana Regional Water Quality Control Board issued the permit for the use of recycled water for groundwater recharge. This is the first permit for indirect potable reuse in California that received unanimous local and statewide support. In 2007, the permit was updated to include additional recharge sites. In 2009, the permit was amended to increase the averaging period used for compliance to 120 months and to allow groundwater underflow to be used as diluent in the computation of the running average Recycled Water Contribution.

The third priority for recharge is the use of imported water supplies. The Groundwater Recharge Master Plan identifies opportunities to use these supplies during wet years when surplus water is available.

In 2002, the Chino Basin Watermaster, Chino Basin Water Conservation District, San Bernardino County Flood Control District, and IEUA formed a partnership to implement

the Chino Basin Groundwater Recharge Master Plan. Titled the Chino Basin Facilities Improvement Project (CBFIP), this award-winning $40 million construction program within IEUA's service area resulted in the modification of 18 existing recharge sites and the construction of one additional facility. Recharge basin improvements included the modification of inlet and outlet structures, placement of rubber dams to facilitate diversion of stormwater, earthwork to improve water percolation, and the construction of pump stations, conveyance facilities and turnouts from IEUA's Regional Recycled Water Distribution System and MWD's Foothill Feeder.

In 2009, IEUA and CBWM implemented Phase 2 of the CBFIP utilizing $11 millions to added additional imported water turnout capacity, drilling monitoring wells, heightening and harden conservation berms, and adding new automated control structures to several recharge sites.

Table 7-3 – Chino Basin Potential Water Recharge Capacities				
Basin Name	**Storm Water**	**Imported Water**	**Recycled Water**	**Total Recharge Capacity (AFY)**
Pre-Existing Recharge Basins				
Ely Basin	870	1,160	870	**2,900**
Phase I Recharge Project Basins				
Banana Basin	870	1,160	870	**2,900**
Declez Basin	1,040	1,390	1,040	**3,470**
Etiwanda Ponds	0	0	0	**0**
Hickory Basin	870	1,160	870	**2,900**
Jurupa Basin	0	0	0	**0**
RP-3 Basin	1,210	1,620	1,210	**4,040**
Turner Basin	1,040	1,390	1,040	**3,470**
Subtotal Phase I:	***5,030***	***6,720***	***5,030***	***16,780***
Phase II Recharge Project Basins				
7th & 8th Street Basins	870	1,160	870	**2,900**
Etiwanda Basins	1,210	1,620	1,210	**4,040**
Lower Day Basin	1560	2,080	1,560	**5,200**
Management Zone 1:				
Brooks Street Basin	870	1,160	870	**2,900**
College Heights Basin	2600	6,070	0	**8,670**
Montclair Basins Nos. 1-4	6,940	16,190	0	**23,130**
Upland Basin	3,470	8,090	0	**11,560**
San Sevaine Nos. 1-5	8,670	11,560	8,670	**28,900**
Victoria Basin	1,040	1,390	1,040	**3,470**
Subtotal Phase II:	***27,230***	***49,320***	***14,220***	***90,770***
Total All Program Basins:	**33,130**	**57,200**	**20,120**	**110,450**

Consistent with the goals of the OBMP, additional recharge facilities may be developed by the Chino Basin Watermaster in the future. Regional implementation of stormwater Best Management Practices in new land developments will also improve recharge opportunities by encouraging local infiltration and reducing the amount of water lost from the groundwater basin. These practices will assist local communities in implementing the Stormwater Management Program Permit issued by the Santa Ana Regional Water Quality Control Board to San Bernardino County in 2005 and with future Total Maximum Daily Load (TMDL) requirements.

Groundwater production levels identified in Chapter 3 will require groundwater recharge and replenishment to sustain the groundwater supply. Table 7-4 shows the projected potential for recharge and replenishment sources and quantities.

Table 7-4
Actual and Projected Chino Basin Groundwater Recharge

Source	2005	2010	2015	2020	2025	2030	2035
Stormwater	12,940	14,141	12,000	12,000	12,000	12,000	12,000
Recycled Water	1,303	7,210	20,000	21,000	21,000	21,000	21,000
Imported Water	34,567	5,001	30,000	30,000	30,000	30,000	30,000
Total	**48,810**	**26,352**	**62,000**	**63,000**	**63,000**	**63,000**	**63,000**

Hydraulic Control/Groundwater Desalination

As more water is recharged in the upper alluvial fans of the Chino Basin, groundwater production in the lower portion of the basin needs to be managed to ensure that Chino groundwater is not lost to the Santa Ana River and that poor quality water in the lower portion of the Chino Basin does not reach downstream basins. To retain hydraulic control, desalter facilities have been constructed (operated by the Chino Basin Desalter Authority) at the down-gradient end of the Chino Basin, near the Santa Ana River. The current capacity of the desalter facilities is 27,600 AFY and an expansion is currently underway to increase the capacity to 40,000 AFY. The expansion is expected to be complete by 2012.

Chino Basin Watermaster, IEUA, Orange County Water District and the Santa Ana Regional Water Quality Control Board developed a hydraulic control monitoring program in 2005 to characterize the relationship of the Santa Ana River and the Chino Basin. Hydraulic control monitoring wells have been constructed and the monitoring program initiated. Information from this monitoring program is used to adaptively manage the Chino Basin storage and recovery programs.

Chino Basin Maximum Benefit Plan/Basin Plan Amendment

To ensure that water quality within the groundwater basin is protected while storage and recovery of groundwater supplies increases, the Chino Basin Watermaster, IEUA and other water agencies have worked with the Santa Ana Regional Water Quality Control Board to develop an approved Maximum Benefit Plan. This plan specifies water quality objectives for the Chino Basin and the actions that will be taken to mitigate total dissolved solids (TDS) and nitrate loadings to the groundwater basin resulting from the augmented recharge program. This plan was adopted as a 2004 Basin Plan Amendment by the Regional Board and has been approved by the California Water Resources Control Board.

Groundwater Quality Programs

TDS Effluent Elimination *– IEUA will limit the volume-weighted average TDS concentration in its effluent to less than or equal to 550 mg/L by using low TDS source water supply for potable uses, selective desalting of either source water and/or recycled water, and minimizing the TDS waste increment.*

Salinity Management *- IEUA and the Chino Basin producers will use best efforts to enact ordinances and development requirements that minimize the TDS waste increment (the average TDS increase that occurs through indoor uses and numerically equal to the average TDS concentration in recycled water minus the average TDS concentration in the source water supply).*

TIN Effluent Elimination *- IEUA will reduce the TIN (Total Inorganic Nitrogen) concentration in its recycled water such that it will produce a recycled water effluent with a 12-month average TIN of 8 mg/L or less.*

Desalter Construction *– Chino Basin Watermaster and IUEA will initiate planning for expansion of the Chino Basin desalting program called out in the OBMP in 2004 and have a plan completed and adopted by the Court in 2005.*

Maintenance of Hydraulic Control *– Chino Basin Watermaster and IEUA have proposed that the TDS and nitrate-nitrogen objectives in the Chino North management zone be established based on maximum benefit and not on antidegradation. One of the criteria required by the RWQCB that must be satisfied to establish objectives based on maximum benefit is to demonstrate that raising the TDS objective to 420 milligrams per liter (mg/L) and the nitrate-nitrogen objective to 5mg/L will not adversely impact the quality of the Santa Ana River or downstream beneficial uses. Demonstrating hydraulic control will show that downstream beneficial uses are not impaired by management activities in the Chino North management zone.*

Conjunctive Use/Dry Year Yield

Conjunctive use describes the coordinated operation of surface water storage and use, groundwater storage and use, and conveyance facilities to meet water management objectives. There are three primary components to a conjunctive management program. The first is to recharge groundwater when surface water is available to increase groundwater in storage. This can be accomplished by reducing groundwater use and substituting it with surface water, allowing natural recharge to increase groundwater (often called in-lieu recharge) or by augmenting recharge with supplemental supplies. The second component is to switch to groundwater use in dry years when surface water is scarce. The third component is to have an ongoing monitoring program to evaluate and allow water mangers to respond to changes in groundwater, surface water or environmental conditions that could exceed management objectives or impact other water users.

The Chino Basin Watermaster is working in partnership with the Metropolitan Water District of Southern California (MWD) to develop regional conjunctive use programs that will store supplemental water for MWD and other agencies that have the capability of delivering surplus water for storage in the Chino Groundwater Basin. Under these programs, surplus water during wet periods would be banked and then withdrawn at a

later time (either directly or through an in-lieu program). Under the OBMP, Watermaster has identified the potential to store and recover up to 500,000 acre feet in the Chino Basin.

In 2004, the Chino Basin Watermaster, Three Valleys Municipal Water District, and IEUA executed the Dry Year Yield Program (DYY) with MWD. The eight appropriators participating with MWD in the program are the Cities of Chino, Chino Hills, Ontario, Upland and Pomona and the Cucamonga Valley Water District, Monte Vista Water District, and Jurupa Community Services District.

The DYY Phase I will develop facilities to pump 33,000 AFY during a dry year utilizing the 100,000 AF storage account. The participants will be required to reduce (shift) their imported water usage by a predetermined amount during a dry year (see Table 7-5). Each participating agency has a specific shift obligation that, when added together, will provide Metropolitan with a total of 33,000 acre-feet of dry year yield.

Table 7-5
Participating Agencies DYY Shift Obligations

Local Retail Agency	DYY Program Shift Obligation (AFY)
City of Chino	1,159
City of Chino Hills	1,448
Cucamonga Valley Water District	11,353
Jurupa Community Services District(1)	2,000
Monte Vista Water District	3,963
City of Ontario	8,076
City of Pomona(1)	2,000
City of Upland	3,001
Total	**33,000**

Notes:
(1) Agencies not within the IEUA service area.

The DYY program will produce multiple benefits. This program will help meet Basin Plan water quality objectives by delivering State Water Project supplies to the Chino Basin through the East Branch/Rialto Pipeline, minimize the need for MWD surface water deliveries during future droughts and emergencies and enhance the flexibility of MWD's operations. Facilities needed to support the DYY program included the construction of new wells and well head (ion exchange) water quality treatment.

In 2008, IEUA completed a CEQA document for a proposed expansion of the DYY program. The expansion would include increased the storage account to 150,000 AF and help fund construction of the additional facilities required. These facilities include new wells, ion exchange treatment and aquifer storage and recovery (ASR) wells.

7.6 WATER TRANSFERS

Water transfers are a water management concept with great potential for helping to alleviate water shortages in our service area and the Santa Ana River Basin. The concept is that two agencies, one willing seller of water and one willing buyer, can enter into an exchange agreement that is mutually beneficial from a water management point of view. Water transfers allow an agency to "move" water from one service area to another, even when the two agencies are not connected by any pipelines.

The Chino Basin is expected to prove a valuable resource for water transfers because of its ability to be a storage facility for water. The Chino Basin has storage capability of up to 6 million acre feet.

As water management tool, water transfers can be quite effective during periods of severe drought or emergencies. Water transfers can take multiple forms to increase local reliability among agencies.