California Senate Bill 610

Water Supply Assessment
for
Majestic Chino Heritage

Prepared for
The City of Chino
Public Works Department, Water Utility

by:

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March 13, 2019

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City of Chino
Water Supply Assessment
Majestic Chino Heritage Project

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ACRONYMS and ABBREVIATIONS

AB	Assembly Bill
ACT	Urban Water Management Planning Act of 1983
AF	Acre Feet
AFY	Acre Feet per Year
AWPF	Advanced Water Purification Facilities
BSY	Basin Safe Yield
BMP	Best Management Practices
CA	California
CALFED	California and Federal Bay-Delta Program
CALSIM	California Water Allocation and Reservoir Operations Model
CBW	Chino Basin Watermaster
CBWCD	Chino Basin Water Conservation District
CCF	Hundred Cubic Feet
CCWRF	Carbon Canyon Water Reclamation Facility
CDA	Chino Basin Desalter Authority
CEQA	California Environmental Quality Act
CII	Commercial, Industrial and Institutional
CIM	California Institution for Men, Chino
CIMIS	California Irrigation Management Information System
CIP	Capital Improvement Program
CPD	Chino Parcel Delivery
CPTP	Coastal Pumping Transfer Program
CRA	Colorado River Aqueduct
CUWCC	California Urban Water Conservation Council
CDPH	California Department of Public Health
CVP	Central Valley Project
DBP	Disinfection Byproducts
DDW	Division of Drinking Water
DMM	Demand Management Measure
DWR	Department of Water Resources
DYY	Dry Year Yield
EIR	Environmental Impact Report
EOC	Emergency Operations Center
EPA	Environmental Protection Agency
ETo	Evapotranspiration
gpd	Gallons Per Day
gpf	Gallons Per Flush
gpm	Gallons Per Minute
IAWP	Interim Agricultural Water Program
IEUA	Inland Empire Utilities Agency
IRP	Integrated Resources Plan
IRWM	Integrated Regional Water Management
JCSD	Jurupa Community Services District
JPA	Joint Powers Agreement
LRP	Local Resources Program
MAF	Million Acre Feet
Max	Maximum
MCL	Maximum Contaminant Level
MGD	Million Gallons per Day
mg/L	Milligrams Per Liter

Min	Minimum
MOU	Memorandum of Understanding
MWD	Metropolitan Water District of Southern California
MZ	Management Zone
OBMP	Optimum Basin Management Program
OCWD	Orange County Water District
QSA	Quantification Settlement Agreement
RP	Regional Plant
RWIP	Recycled Water Implementation Plan
RWQCB	Regional Water Quality Control Board
SARI	Santa Ana Regional Interceptor
SAWPA	Santa Ana Watershed Project Authority
SB	Senate Bill
SBSC	San Bernardino Supreme Court
SBCFCD	San Bernardino County Flood Control District
SCADA	Supervisory Control and Data Acquisition
SCIWP	Southern California Integrated Watershed Program
SWP	State Water Project
SWRCB	State Water Resources Control Board
TDS	Total Dissolved Solids
TIN	Total Inorganic Nitrogen
TMDL	Total Maximum Daily Load
TVMWD	Three Valleys Municipal Water District
USBR	U.S. Bureau of Reclamation
UWMP	Urban Water Management Plan
VOC	Volatile Organic Compounds
WMWD	Western Municipal Water District
WFA	Water Facilities Authority
WMP	Water Master Plan
WSA	Water Supply Assessment
WSDM	Water Surplus and Drought Management
WSMP	Water System Master Plan
WTP	Water Treatment Plant

EXECUTIVE SUMMARY

A California Environmental Quality Act (CEQA) report is being prepared on behalf of the City of Chino (City) in support of the Majestic Chino Heritage (MCH or Project). The EIR includes an assessment of utilities, including water supply. Senate Bill 610 requires that a water supply assessment (WSA), based on specific criteria, be prepared to document the sufficiency of available water supply for the City and the Project. The WSA identifies water supply and reliability to the City and the Project both now and in the future.

The WSA is considered at a point in time when known future projects are considered. It is also understood that new and innovative programs and projects in concept are yet to be designed. Therefore, WSAs are a part of the ongoing planning efforts of the City to optimize its water resource program.

The WSA includes a discussion of the relevant legislation which requires the WSA; an overview of the proposed Project; analysis of water demands for the City's existing service area and the Project over a 20-plus year planning period; and an analysis of reliability of the City's water supplies. This WSA includes discussion of the potential impacts each agency that supplies water to the region has on the City, and concludes with a sufficiency analysis of water supply during normal, single-dry, and multiple dry years over a 20-plus year planning period.

Majestic Chino Heritage

The MCH site is located adjacent to the El Prado Golf Course generally bounded on the east by El Prado Channel on the south side by El Prado Golf Course, on the west side by Mountain Avenue, and on the north by Bickmore Avenue. The 96.94-acre site is within the City of Chino's designated Subarea 1. Much of the remaining historic uses of Subarea 1 and Subarea 2 (The Preserve) consist of agricultural and dairy operations. The proposed Project includes approximately 2,208,750 square feet of distribution/warehouse building space ('Light Industrial' land use designation).

Water Supply

As described in the City's 2015 Urban Water Management Plan (UWMP) update, the City of Chino relies on four sources for its long-term water supply -- City-produced local groundwater, imported water, desalted water, and recycled water.

- Groundwater is produced from the Chino Groundwater Basin (Basin). The Basin was adjudicated in 1978, which allocated water production rights to water producers. The City's current groundwater production right as a share of the Safe Yield of the Basin is 4,034 acre-feet per year (AFY). However, the City has the ability to obtain annual adjustments to its allocated production capability. Management of the Basin is accomplished by the Chino Basin Watermaster through implementation of its operating documents; including (1) the 1978 Chino Basin Judgment; (2) the Peace Agreement; and (3) the Optimum Basin Management Program (OBMP).

- Imported State Water Project (SWP) water is received from the Metropolitan Water District of Southern California (MWD) through the Inland Empire Utilities Agency (IEUA) and the Water Facilities Authority (WFA). The City's imported water deliveries are treated by the WFA at its Agua de Lejos Treatment Plant located in Upland, California.

The City is entitled to 5.9 percent of the treatment plant capacity which calculates to a current Chino entitlement of 5,353 AFY.

- Desalted water is received from the Chino Basin Desalter Authority's (CDA) Chino I Desalter. The City's allocation is 5,000 AFY.

- Recycled water is supplied to the City by IEUA through the Regional Recycled Water Distribution System. In Year 2015, the City provided approximately 7,993 AF of recycled water to industrial, landscape irrigation, and agricultural customers. The City's recycled water infrastructure is currently expanding due to the expansion of the IEUA's regional recycled water distribution system. However, recycled water demands are expected to decrease in the future upon conversion of agricultural lands to urban use.

Chino Groundwater Basin Safe Yield Re-determination

The Chino Groundwater Basin has been adjudicated and is subject to the terms and conditions of the January 27, 1978 SBSC Judgment (RCV 51010) which was restated in 2012 by that certain Restated Judgment (Judgment). Per the Judgment, the Safe Yield of Chino Basin is 140,000 acre feet per year. The Judgment requires that the Chino Basin Watermaster (CBW) conduct a redetermination of the Safe Yield of 140,000 acre feet after the first ten (10) years of operation of the physical solution. Under the Judgment, that redetermination was to have been completed in 2011 and is pending.

At this time, the final outcome of any court-ordered Safe Yield redetermination is unknown. However, based on available information, it is possible the Safe Yield may be reduced from the 140,000 acre-feet quantity that has been in-place since the time the Judgment was implemented in 1978. It is generally understood by the stakeholders that such a reduction would impact the annual shares of Operating Safe Yield allocated to the Appropriators, that overlying rights allocated to the Agricultural Pool and individual members of Non-Agricultural Pool would not be reduced, and that the respective amounts of reduction to the Appropriators would be restored, partially or fully, from any under-utilized overlying Agricultural Pool groundwater production rights, which currently are re-allocated to Appropriators on an annual basis. These under-utilized Agricultural Pool rights are the same rights that also satisfy requests for (but for the last several years only partially satisfied all requests) agricultural land use conversions and early transfers. Because the under-utilized Agricultural Pool rights would be first used to restore Appropriators' respective shares of Operating Safe Yield diminished by the reduction in the Safe Yield, the amount of under-utilized Agricultural Pool rights available to satisfy land use conversions and early transfers would be reduced to a level that would not totally satisfy the water demands of the land use conversion. Because all agricultural land in the City of Chino is undergoing urbanization, the City of Chino's reliance on land use conversions to satisfy the water needs of such urbanization would be adversely impacted by a reduction in the Safe Yield.

Water Demand

The City's total water demand in Year 2015 was approximately 21,426 acre-feet per year (AFY). The Project water demand was accounted for in the future demand estimate of the 2015 UWMP, and is estimated to be a total of 139,236 gallons per day or 156 AFY (120 AFY for indoor water use and 36 AFY for outdoor irrigation) for site uses. This represents an increase in demand on the City's potable (domestic) water system by 120 AFY. The Project will use recycled water for all outdoor landscape irrigation. Combined with the rest of Subarea 1 and

Subarea 2 (The Preserve) and College Park, that were also used in the UWMP projections, the City's total water demand is anticipated to increase to 27,196 AFY by 2040.

Demand and Supply Projections

Development of the proposed MCH project is expected to begin in 2019. The City of Chino will meet its future water demands, including the demands for the Project, from existing supply sources as well as sources that are currently in planning or under construction. Supplies of imported water and CDA water are expected to remain relatively stable throughout the forecast period. Continued water use reduction habits and increased City well production are anticipated to provide for the balance of needed supplies.

Upon ceasing the current dairy operations and full implementation of the MCH, groundwater rights of up to 2.0 AFY per acre of land converted to urban use may be made available by the City for the Project. Although the City is eligible for a maximum of 2.0 AFY per acre of land converted, the Watermaster will determine the amount of rights that is made available to the City.

The City has the opportunity to increase supply to meet demand through the following measures:

1. Production of groundwater based on Safe Yield limitations and replenishment;
2. Increasing imported water purchases if there is available WFA capacity;
3. Purchasing additional desalted water if more is produced than needed to satisfy requirements of other purchasers; and
4. Purchasing additional recycled water.

Collectively, these additional options may be used by the City of Chino in an effort to provide sufficient water supplies to satisfy demands now and into the future.

Analyses of normal, single-dry, and multiple-dry year scenarios also demonstrate the City's ability to supply water to meet demand until year 2040 in all hydrologic conditions based on the Watermaster's current Basin Safe Yield capacity.

Reliability

Reliability of future water supplies to the region is based on implementation of the OBMP, implementation of local agency programs, and combined efforts and programs among agencies, including all water retailers, and the Chino Basin Watermaster, IEUA, MWD, WFA, CDA, and the Chino Basin Water Conservation District.

Prevailing drought conditions throughout California and the Colorado River Basin, coupled with environmental issues affecting deliveries of SWP water through the Sacramento-San Joaquin Delta, have resulted in diminished imported surface water supplies to Southern California. MWD, the major importer of surface water to Southern California, has developed plans and programs to address drought conditions and its continuing ability to meet the water demands of its service area. MWD continually re-evaluates these plans and programs for effectiveness in consideration of changing conditions. The plans describe a progressive series of actions, including tapping into stored water reserves and, if necessary, reductions in deliveries.

SWP Reliability Update

DWR issued its 2017 State Water Project Final Delivery Capability Report. The report has been updated three times – in 2013, 2015 and 2017. The 2017 report utilizes 82 years of historic rainfall and snow history, along with projected consideration factors for climate change. The updated report projects deliveries of SWP water to have a 77 percent likelihood that more than 2,000 TAF of Table A water will be delivered annually. This compares to 74 percent likelihood in the 2015 Report.

Conclusion

The information included in this Water Supply Assessment is based on the City of Chino 2015 UWMP, which describes a program of water supply options within the City's diversified water supply portfolio that will satisfy the City's anticipated future water demands, including the Majestic Chino Heritage project.

1.0 INTRODUCTION

A California Environmental Quality Act (CEQA) report is being prepared for the Majestic Chino Heritage project (MCH). The EIR includes an assessment of utilities, including water supply. Legislation implemented in 2002 (Senate Bill 610), requires that a water supply assessment (WSA), based on specific criteria, be prepared to document the sufficiency of available water supply for the City and the Project. The WSA identifies water supply and reliability to the City, now and into the future, and makes a determination regarding water supply sufficiency for the Project. The regional location of the Project is shown in **Exhibit 1**.

The Project site is located adjacent to the El Prado Golf Course generally bounded on the east by El Prado Channel on the south side by El Prado Golf Course, on the west side by Mountain Avenue, and on the north by Bickmore Avenue. The 96.94-acre site is within the City of Chino's designated Subarea 1. The Project site vicinity is shown in **Exhibit 2**. The proposed Project includes 2,082,750 square feet of distribution center operations.

The WSA is part of the ongoing planning efforts of the City to optimize its water resource program. The WSA includes a discussion of the Senate Bill 610 legislation, an overview of the proposed Project, and analysis of water supply and demand for the City's existing service area and the Project and other City development projects over a 20-year planning period. The WSA also includes an analysis of reliability of the City's water supplies and water quality, and concludes with an analysis describing water supply during normal, single-dry, and multiple dry years over a 20-plus year planning period.

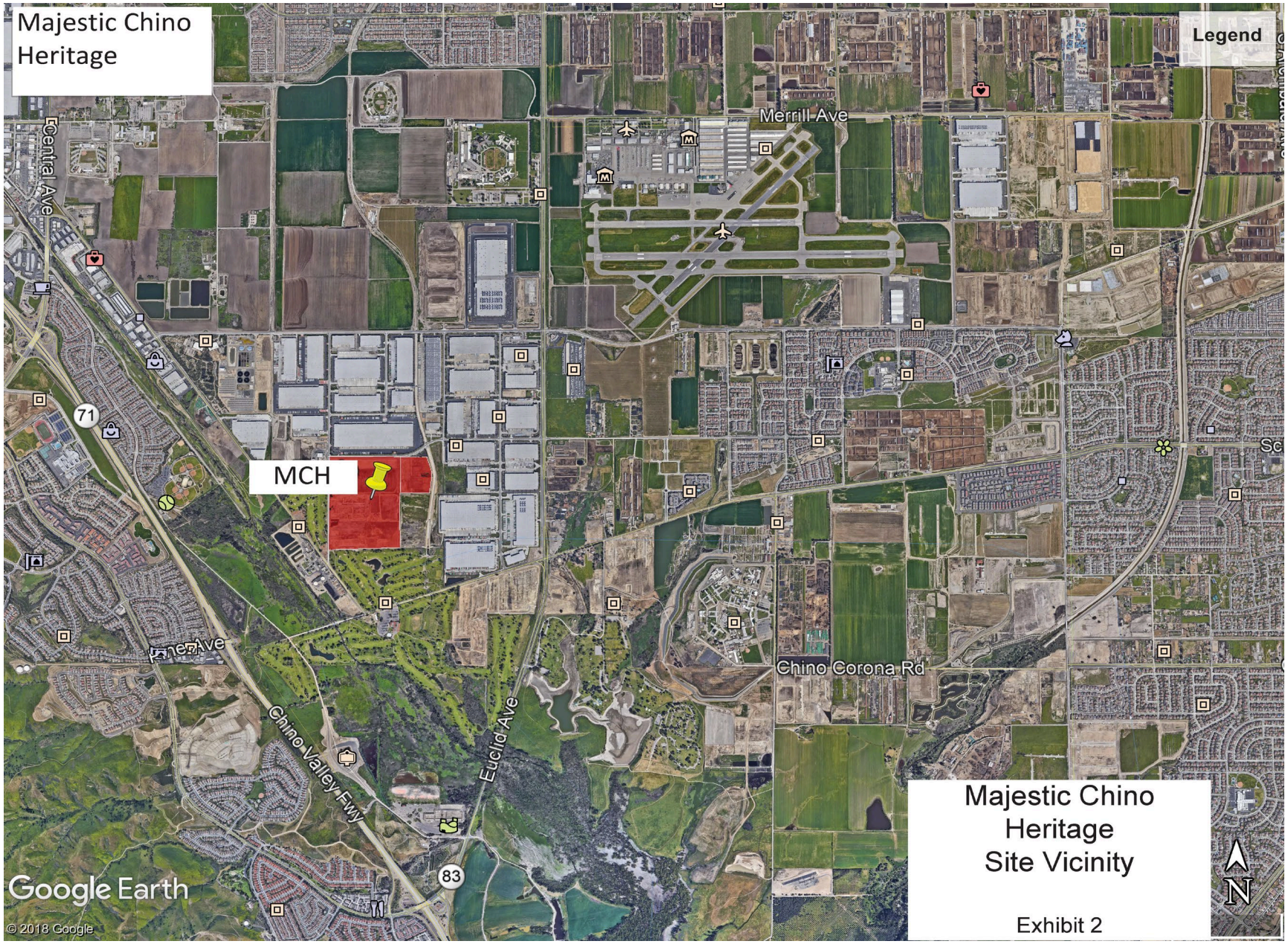
not to scale

October 2018 JN001CC1

Majestic Chino Heritage

Regional Vicinity

Exhibit 1


Majestic Chino Heritage
Legend
Merrill Ave
Central Ave
71
MCH
Chino Corona Rd
Euclid Ave
Chino Valley Fwy
83
Google Earth
© 2018 Google
Majestic Chino Heritage Site Vicinity
Exhibit 2
N

2.0 LEGISLATION

Due to the potential impact by the Majestic Chino Heritage project on current and future water supplies, the State of California, through SB 610, requires that a WSA be completed for the proposed development. The Project is proposed to include 2,082,750 square feet of light industrial building space on approximately 97 acres. As the Project occupies more than 40 acres of land and exceeds 650,000 square feet of floor area, preparation of a WSA is required to determine the sufficiency of water supply to the Project and the City's water customers, now and for a 20-year planning period. The following information outlines the requirements of SB 610.

2.1 SB 610 Water Supply Planning

Senate Bill (SB) 610 was implemented January 2002. SB 610 requires a development that qualifies as a "Project" under Water Code 10912 to be supported in CEQA documentation with a Water Supply Assessment report drafted to specifically identify the public water system that shall supply water to the project and analyze the availability and reliability of water supply to the development. The Water Supply Assessment is to include the following if applicable to the supply conditions:

1. Discussion with regard to whether the public water system's total projected water supplies available during normal, single dry, and multiple dry water years during a 20-year projection will meet the projected water demand associated with the proposed project, in addition to the public water system's existing and planned future uses.
2. Identification of existing water supply entitlements, water rights, or water service contracts secured by the purveying agency and water received in prior years pursuant to those entitlements, rights, and contracts.
3. Description of the quantities of water received in prior years by the public water system under the existing water supply entitlements, water rights or water service contracts.
4. Water supply entitlements, water rights or water service contracts shall be demonstrated by supporting documentation such as the following:
    a. Written contracts or other proof of entitlement to an identified water supply.
    b. Copies of capital outlay program for financing the delivery of a water supply that has been adopted by the public water system.
    c. Federal, state, and local permits for construction of necessary infrastructure associated with delivering the water supply.
    d. Any necessary regulatory approvals that are required in order to be able to convey or deliver the water supply.
5. Identification of other public water systems or water service contract holders that receive a water supply or have existing water supply entitlements, water rights, or water service contracts, to the same source of water as the public water system.
6. If groundwater is included for the supply for a proposed project, the following additional information is required:
    a. Description of groundwater basin(s) from which the proposed project will be supplied. Adjudicated basins must have a copy of the court order or decree adopted and a description of the amount of groundwater the public water system has the legal right to pump. For non-adjudicated basins, information on whether the DWR has identified the

basin as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current bulletin of DWR that characterizes the condition of the basin, and a detailed description of the efforts being undertaken in the basin to eliminate the long-term overdraft condition.

b. Description and analysis of the amount and location of groundwater pumped by the public water system for the past five (5) years from any groundwater basin from which the proposed project will be supplied. Analysis should be based on information that is reasonably available, including, but not limited to, historic use records.

c. Description and analysis of the amount and location of groundwater projected to be pumped by the public water system from any groundwater basin from which the proposed project will be supplied. Analysis should be based on information that is reasonably available, including, but not limited to, historic use records.

d. Analysis of sufficiency of the groundwater from the basin(s) from which the proposed project will be supplied.

7. The water supply assessment shall be included in any environmental document prepared for the project.

8. The assessment may include an evaluation of any information included in that environmental document. A determination shall be made whether the projected water supplies will be sufficient to satisfy the demands of the project, in addition to existing and planned future uses.

2.2 SBx7-7 and EO B-29-15

The Water Conservation Act of 2009 (SBx7-7) requires all California urban water agencies to set and meet certain demand reduction targets in order to assist the State in reducing urban water use by 20 percent by 2020. The Act also requires each agency to monitor its progress toward its targets. This was implemented for the purpose of meeting the mandate to reduce per capita urban water consumption by 20 percent statewide. SBx7-7 describes the overall process by which the City of Chino is to comply with the requirements. It specifically identifies methods for establishing urban water use targets. These requirements and the City of Chino's specific Compliance Plan are outlined in the 2010 UWMP.

The Governor issued a State of Emergency and Continued State of Emergency in 2014 in response to the persistent state-wide drought. Most recently, Executive Order B-29-15 was issued by the Governor in April 2015 which essentially increases the water use reduction goal to 25 percent as compared to 2013 usage throughout the State. The EO outlines specific water use reduction orders designed to heighten the urgency to reduce water consumption and facilitate the ability of local agencies to implement and enforce water conservation requirements. It facilitates funding for projects designed to increase local water supplies and improve water supply reliability. It also orders more frequent reporting and modifications to the State's Model Water Efficient Landscape Ordinance; mandates Agricultural water suppliers to prepare their Agricultural Water Management Plans by specific dates; and orders the State to coordinate their water conservation related goals with other State departments like Fish and Wildlife, Forestry and Fire Protection, and the Energy Commission.

Additionally, the State Water Resources Control Board on May 5, 2015, adopted regulations implementing Executive Order B-29-15. Under this SWRCB regulation the City of Chino is required to reduce its total potable water production by 24 percent for each month as compared to the amount used in the same month in 2013.

3.0 Majestic Chino Heritage (MCH)

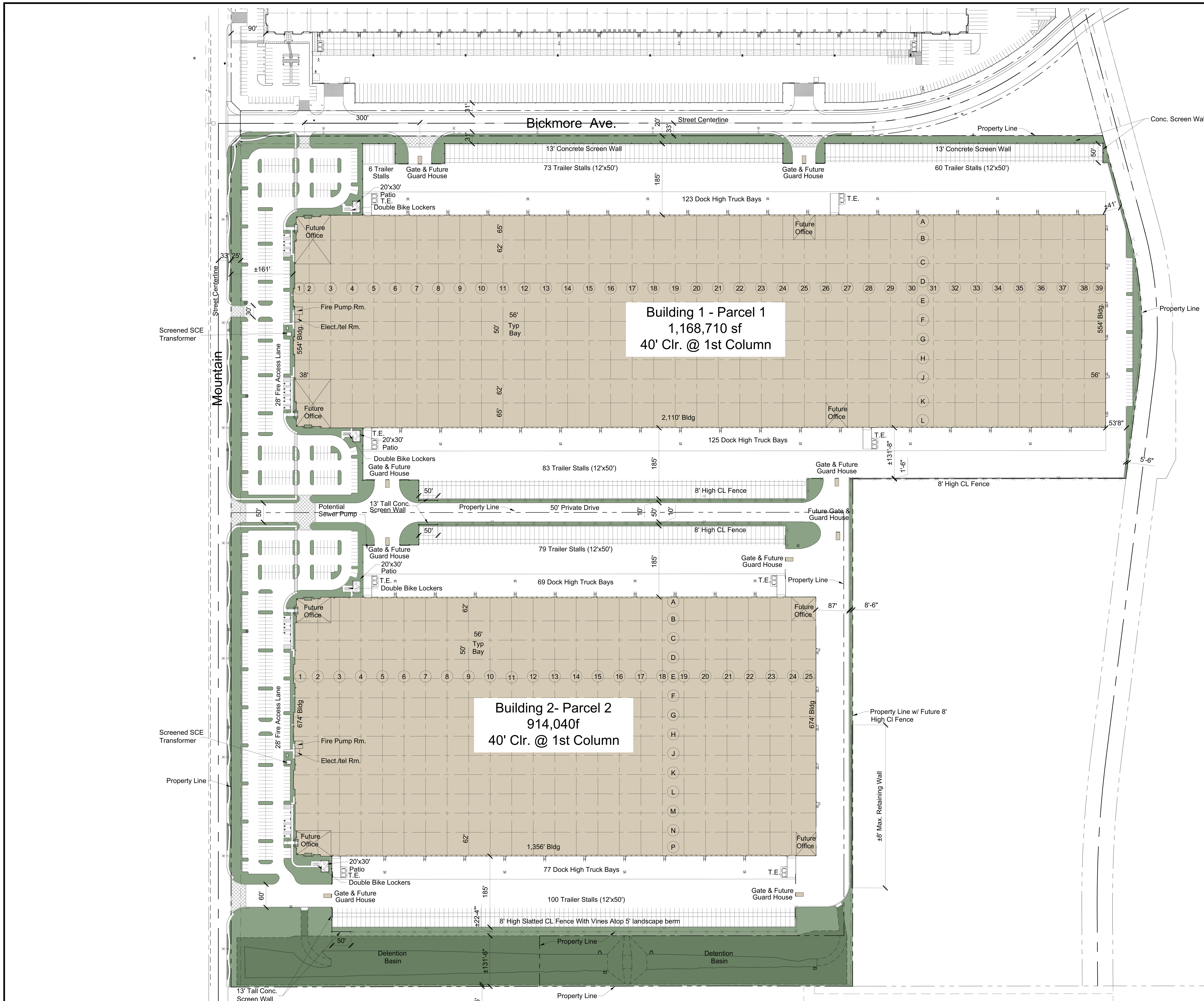
3.1 Project Description

The proposed Majestic Chino Heritage project (MCH) is proposed as a distribution center (Light Industrial) with warehouse type uses and with planned building floor area totaling approximately 2,082,750 square feet in the southern area of the City of Chino, California. It is located in the northern portion of Chino's Subarea 1 adjacent to the El Prado Golf Course north of the intersection of El Prado Road and Pine Avenue. The Project is scheduled to begin construction in 2019. The Project area and building square-footage are outlined in Table 3.1-1, and the site plan is shown in **Exhibit 3**.

Table 3.1-1 summarizes the proposed land uses of the MCH Project.

Table 3.1-1 Project Land Use Summary

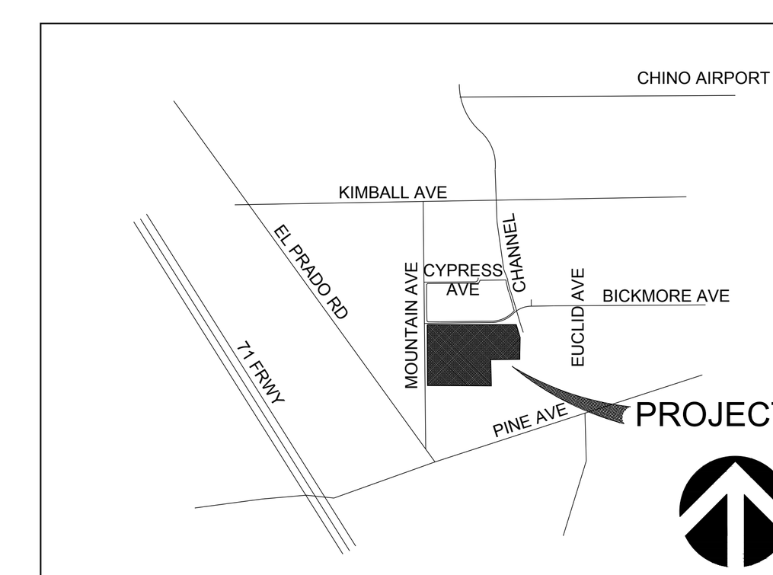
Parcel	Land Use	Area (acres)	Building Area (SF)
N/A	Distribution, Light Industrial, irrigation	96.94	2,082,750



SHEET INDEX	
SHEET NO.	DESCRIPTION
A1.0	TITLE SHEET
A1.1	ENLARGED PARTIAL SITE PLANS
A1.2	SCREEN WALL LOCATION PLAN
A2.0	OVERALL FLOOR PLANS
A2.1	BLDG. 1 - SOUTHWEST ENLARGED FLOOR PLAN
A2.2	BLDG. 1 - NORTHWEST ENLARGED FLOOR PLAN
A2.3	BLDG. 2 - NORTHWEST ENLARGED FLOOR PLAN
A2.4	BLDG. 2 - SOUTHWEST ENLARGED FLOOR PLAN
A2.5	BLDG. 2 - SOUTHEAST ENLARGED FLOOR PLAN
A2.6	BLDG. 2 - NORTHEAST ENLARGED FLOOR PLAN
A3.0	BLDG. 1 - OVERALL BUILDING ELEVATIONS
A3.1	BLDG. 1 - ELEVATIONS
A3.2	BLDG. 1 - ELEVATIONS
A3.3	BLDG. 1 - ELEVATIONS
A4.0	BLDG. 2 - OVERALL BUILDING ELEVATIONS
A4.1	BLDG. 2 - ELEVATIONS
A4.2	BLDG. 2 - ELEVATIONS
A4.3	BLDG. 2 - ELEVATIONS
A5.0	PARTIAL ENLARGED ELEVATIONS
A5.1	PARTIAL ENLARGED ELEVATIONS
A6.0	CONCRETE SCREEN WALL ELEVATIONS
	CIVIL
SHEET 1	CONCEPT GRADING PLAN
SHEET 2	CONCEPT UTILITY PLAN
	TENTATIVE PARCEL MAP
SHEET 1	TITLE SHEET
SHEET 2	MAP SHEET
SHEET 3	MAP SHEET
	LANDSCAPE
L-1	OVERALL LANDSCAPE PLAN
L-2	ENLARGED LANDSCAPE PLAN - SW QUADRANT
L-3	ENLARGED LANDSCAPE PLAN - NW QUADRANT
L-4	ENLARGED LANDSCAPE PLAN - NE QUADRANT
L-5	ENLARGED LANDSCAPE PLAN - SE QUADRANT

PROJECT SUMMARY (REFER TO TABLE FOR ACTUAL VALUES)

EXISTING ZONING . . . . AG (GENERAL AGRICULTURAL)
PROPOSED ZONING . . . . M2 (GENERAL AGRICULTURAL)
LOT AREA, MINIMUM . . . . 1 ACRE
LOT WIDTH, MINIMUM . . . . 200 FEET
LOT DEPTH, MINIMUM . . . . 200 FEET
LANDSCAPE COVERAGE, MINIMUM 10%
OFF-STREET PARKING AND LOADING
OFFICE . . . . 1 / 250 SF
WAREHOUSE . . . . 1 / 1,000 SF @ 1ST 20,000 SF
1/ 2,000 SF @ @ 2ND 20,000 SF
1 / 4,000 SF @ OVER 40,000 SF
BUILDING SETBACKS, MINIMUM
FRONT . . . . .25 FEET + 1 FT. / FT. OVER 25 FT.
REAR . . . . .0 FEET + 1 FT. / FT. OVER 25 FT.
INTERIOR SIDE . . . . .0 FEET + 1 FT. / FT. OVER 25 FT.
STREET SIDE . . . . 25 FEET + 1 FT. / FT. OVER 25 FT.
LOT COVERAGE, MAXIMUM 50%
FLOOR AREA RATIO (FAR) 0.6
BUILDING HEIGHT, MAXIMUM
STORIES . . . . N/A (PROPOSED = 52 FT.)
FEET . . . . N/A (PROPOSED = 52 FT.)



VICINITY MAP

PROJECT SUMMARY

	Site Area Net (Acres)	Bldg 1st Floor Area (SF)	Bldg Coverage (%)	Proposed Office Area (SF)	Proposed Warehouse Area (SF)	Bldg. Future Mezz. Area	Landscape Area (SF)	Landscape Coverage (%) (10% Required)	Dock Doors Possible (9'x10')	Trailer Parking (12'x50')	Enclosed Bike Lockers (5%)	Car Parking Required (2% Office & 1.5% Mezz Office)	Total Car Parking Provided (9'x19' U.N.O.)	Accessible Parking Stalls Req. (2%)	Accessible Parking Stalls Provided	FE, VP, CP, EV Parking Req./Provided (8%)	Future EV Charging Spaces Req./Provided (6%)
Parcel 1 - Building 1 & 1/2 Private Rd. & basin	54.21	1,168,710	49.50%	21,000	1,147,710	5,000	257,465	10.90%	248	222	21	411	411	8	10	33	25
Parcel 2 - Building 2 & 1/2 Private Rd. & Basin	42.74	914,040	49.10%	21,000	893,040	5,000	243,698	13.09%	146	184	17	347	349	7	8	28	21
Total	96.94	2,082,750	49.32%	42,000	2,040,750	10,000	501,162	11.87%	394	406	38	758	760	15	18	61	46

100 0 100 200
SCALE IN FEET (1" = 100')

SITE PLAN A SCALE: 1" = 100'-0" Exhibit 3

REVISIONS

COMMERCE CONSTRUCTION CO., L.P.
13191 Crossroads Parkway North
Sixth Floor
City of Industry, California 91746-3497
Telephone: (562) 699-0453
License No. 723302

OVERALL SITE PLAN
BUILDINGS NO. 1 & 2
MAJESTIC CHINO HERITAGE
CHINO, CA.

Drawing Plot Bar
0" 1"
Use this plot bar to confirm drawing has not been reduced or enlarged from original. If this plot bar is not exactly 1 inch long the physical size of drawing has changed.

DRAWN BY DATE
SDG 11-27-2018

CCC JOB NO.
6720

SHEET NO.
A1.0

M:\Sketches\6720 Mountain & Bickmore\6720-ex-28.1 - 2nd Planning Submittal-Front Parking-Alt 05.dwg

3.2 Majestic Chino Heritage Water Demands

Table 3.2-1 calculates the total and net water demand of the Project.

Table 3.2-1 Majestic Chino Heritage Water Demand Estimate

Land Use	Bldg SF	Project Site Acreage [1]			Indoor Water Demand Factor [2]	Outdoor Water Demand Factor [2]	Indoor Water Demand	Outdoor Water Demand
		total	Bldg, Parking, other	Irrig.				
Building 1 Distribution (IND-L)	1,168,710	51.0	48.7	2.3	1,250 gpd/ac	2,900 gpd/ac	60,892 gpd	6,720 gpd
Building 2 Distribution (IND-L)	914,040	45.9	37.3	8.6	1,250 gpd/ac	2,900 gpd/ac	46,604 gpd	25,020 gpd
Total	2,082,750	96.9		-	-	-	107,496 gpd [3]	31,740 gpd [4]

[1] Based on Project Site Plan provided by Commerce Construction. Water demand is estimated using General Light Industrial/Warehouse land use classification.

[2] Based on usage factors in the City's 2004 Master Plan Update.

[3] Represents additional demand on City's potable (domestic) w ater sources.

[4] Represents additional demand on City's recycled (non-domestic) w ater sources.

Total average MCH water demand is estimated at approximately, 139,236 gpd (97 gpm or 156 AFY). The proposed Project water demand would be supplied by City sources. Therefore, the proposed increased water demands on the City's potable water system would be 107,496 gpd (120 AFY), and the increased irrigation demands would be 31,740 gpd (36 AFY) on the City's recycled water system. Although the site does not demand water under current conditions, the site historically used private on-site groundwater wells to support dairy operations. MCH project construction is planned for 2019.

As discussed in the next section, water rights will be converted to the City in accordance with agricultural land conversion to urban use. The City is eligible for a maximum of up to 2.0 AFY for every acre of land converted to urban use. Ultimately, the Watermaster will determine the amount of rights made available to the City.

4.0 CITY OF CHINO WATER DEMAND AND SUPPLIES

The City of Chino Water Utility serves water to an area of approximately 29.5 square miles. Portions of the City extend beyond the westerly and northwesterly boundary of the City's water service area which are served by other water purveyors, including the Monte Vista Water District. The City's water service area, including the new development areas (i.e., Subareas 1 and 2) is shown in **Exhibit 4**.

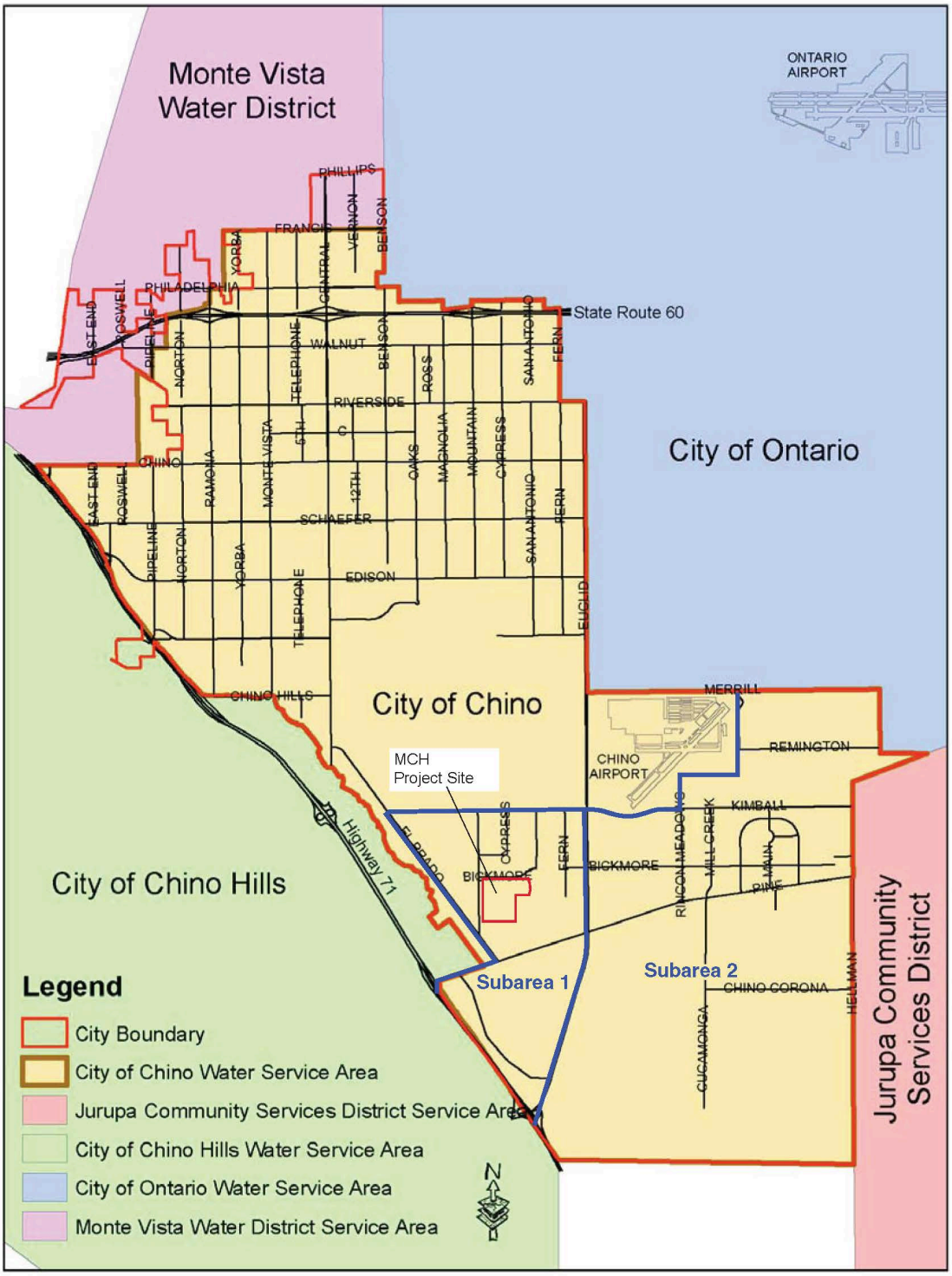
4.1 Overview of Supply and Demand

In Year 2015 the City purchased and produced 13,433 AF of domestic water from the city wells (44%), CDA (37%), and WFA (19%). The City also provided 7,993 AF of recycled water (purchased from IEUA) to industrial, landscape irrigation and agricultural customers. Recycled water supplies have stabilized in recent years. Agricultural land uses are expected to decrease as agricultural conversion takes place throughout southern Chino. Planned improvements will increase the efficient and reliable use of each water source. Each of the sources of water for the City is more fully discussed in Section 4.2.

The City currently obtains water from the following primary water sources: (1) groundwater from the Chino Groundwater Basin managed by the Chino Basin Watermaster; (2) imported State Water Project (SWP) water from the MWD through the Inland Empire Utilities Agency (IEUA); (3) desalted groundwater from the Chino Basin Desalter Authority (CDA); and (4) recycled water supplied by IEUA. The City owns six reservoirs with a combined storage capacity of 19.75 million gallons, 16 groundwater wells with future plans for rehabilitation of existing wells and several new wells for enhanced production, one imported water connection to the Water Facilities Authority (WFA) Agua de Lejos Water Treatment Plant, an ion-exchange treatment plant, two booster pump stations, two CDA water connections, emergency connections with adjacent water purveyors, potable water pipelines, and recycled water pipelines. A description of the City's wells can be found in Table 4.2-2 in Section 4.2.

4.1.1 Growth Rate

The City's 2015 UWMP includes an analysis of the City's anticipated growth rate. The 2015 service area population was approximately 73,683. The population is expected to increase to over 97,863 by 2040. Table 4.1-1 shows the projected service area population for the City. The increase population projected by the 2015 UWMP was based on normal growth rates as projected by regional planning agencies, including Southern California Association of Governments (SCAG) and the scheduled development of the remainder of the City's Subareas 1 and 2, College Park and Rancho Miramonte development (formerly Edgewater Communities).



Source: City of Chino, 2015 Urban Water Management Plan.

Majestic Chino Heritage

City of Chino Water Service Area Including Subareas 1 and 2

Exhibit 4

10/25/18 JN 001CC1 CMC

Table 4.1-1 City of Chino Service Area Population

Year	2015	2020	2025	2030	2035	2040
City of Chino Water Service Area Population	73,683	78,463	84,596	90,730	96,863	97,863

Source: City of Chino 2015 UWMP

4.1.2 Water Demand

The City's total water demand (including recycled water) in Year 2015 was approximately 21,426 acre-feet per year. The Project water demand was accounted for in the future demand estimate of the 2015 UWMP, and is estimated to be a total of 139,236 gallons per day or 156 AFY (120 AFY for indoor water use and 36 AFY for outdoor irrigation) for proposed site uses. The Project will use recycled water for all outdoor landscape irrigation. Combined with the rest of Subareas 1 and 2, and College Park, the land of which was all included in the UWMP projections, the City's total water demand (including recycled water) is anticipated to increase to 27,196 AFY by 2040.

4.1.3 Demand and Supply Comparison

Table 4.1-2 shows the demand and supply data for Year 2015 and projected water demand and supply for the City of Chino, including additional demand the Project will require through 2040. This represents a 20-year minimum planning period as required by Senate Bill 610.

Demand and supply projections consider land use, in addition to water development programs and projects. A supply surplus is indicated demonstrating a sufficient water supply for the City and the Project for the next 20+ years based on the Chino Basin Watermaster's current Basin Safe Yield of 140,000 AFY.

Table 4.1-2 Projected Water Demand and Supply for City of Chino

	(AFY)	Projected (AFY)				
	2015	2020	2025	2030	2035	2040
DEMAND [1]						
Potable	13,433	17,262	18,696	20,058	20,945	23,355
Recycled	7,993	5,791	4,127	3,810	3,826	3,841
TOTAL WATER DEMAND	**21,426**	**23,053**	**22,823**	**23,868**	**24,771**	**27,196**
SUPPLY [2]						
Local - Groundwater Production Rights (AFY)	13,394	15,421	15,421	15,421	15,421	15,421
Local - Desalter Water	5,000	5,000	5,000	5,000	5,000	5,000
Import WFA/ IEUA	5,353	5,353	5,353	5,353	5,353	5,353
Total Potable Supply	23,747	25,774	25,774	25,774	25,774	25,774
Total Recycled Supply	7,993	5,791	4,127	3,810	3,826	3,841
TOTAL WATER SUPPLY	**31,740**	**31,565**	**29,901**	**29,584**	**29,600**	**29,615**
POTABLE WATER SUPPLY SURPLUS	10,314	8,512	7,078	5,716	4,829	2,419

[1] City of Chino 2015 UWMP, Table 4-3.
[2] City of Chino 2015 UWMP, Table 6-9.

The analysis shows that groundwater supplies will slightly increase, and desalted and imported water supplies will remain stable. It also shows the City's recycled water for irrigation will decrease due to the conversion of irrigated agricultural lands to urban uses. The availability of recycled water from IEUA is expected to remain constant, or increase; therefore, the City will continue to evaluate other opportunities to use recycled water to further reduce dependence on its potable water sources.

The City of Chino has the opportunity to increase supply as needed to meet demand through additional production of groundwater based on Safe Yield limitations. Also, the City may purchase additional desalted water if more is produced than needed to satisfy requirements of other purchasers.

Reliability of future water supplies to the region is enhanced through continued implementation of the Optimum Basin Management Program (discussed in Section 4.2 below), implementation of local agency programs, and combined efforts and programs among member and cooperative agencies, including all water retailers, and the Chino Basin Watermaster, IEUA, MWD, Santa Ana Regional Water Quality Control Board, Santa Ana Watershed Project Authority, and the Chino Basin Water Conservation District. The Water Utility manages agreements and contracts with these agencies and continually monitors activities, projects and programs to optimize the City's water supply.

The following sections discuss each of the water sources for the City of Chino. Reliability of each of these sources is discussed in Section 5.

4.2 Groundwater

4.2.1 Chino Groundwater Basin

The City receives groundwater from the Chino Groundwater Basin, one of the largest basins in southern California, which is managed by Chino Basin Watermaster. The Chino Basin Watermaster is guided by the provisions of the Chino Basin adjudication and subsequent agreements between the parties to the Judgment. These agreements provide for groundwater production rights that are not fully utilized by the Basin's agricultural interests to be transferred to municipal water purveyors via two methods; agricultural land use conversion and early transfer.

The Chino Basin Watermaster prepares an Assessment Package each year to determine the assessments for each groundwater producer based on production from the prior fiscal year. Table 4.2-1 describes the City's annual groundwater production right corresponding to FY 16/17 based on the Basin Safe Yield of 140,000 AFY.

Table 4.2-1 City of Chino Total Annual Groundwater Production Right (AF) – BSY=140,000 AFY

	Production Year 2016/17
Early Transfer	2,413
Land Use Conversion	8,456
Difference of Potential for Reallocation vs. Net	(918)
Sub-Total	**9,951**
Assigned Water Rights	4,034
Carry Over from previous year	4,034
Previous Years Reconciliation	0
Sub-Total	**8,068**
Total Production Right	**18,019**

Source: Chino Basin Watermaster, Final 2016/17 Assessment Package.

4.2.2 Groundwater Management

The Chino Basin Watermaster was established in 1978 by a judgment entered by the Superior Court of California. The Judgment required that the Watermaster develop a management plan for the Chino Groundwater Basin that meets water quality and water quantity objectives for the region.

The Watermaster is guided by the provisions of the Chino Basin adjudication and subsequent agreements between the parties to the Judgment. These agreements provide for groundwater production rights that are not fully utilized by the Basin's agricultural interests to be transferred to municipal water purveyors via two methods; agricultural land use conversion and early transfer. Four primary documents govern the adjudication and management of the Chino Basin: (1) the 1978 Chino Basin Judgment, (2) the Peace Agreement, (3) the OBMP, and (4) the Peace II Agreement. The following discusses each of these documents as they pertain to basin management and the City of Chino water supply from groundwater.

The City's current assigned water production right, based on a share of Safe Yield, is 4,034 AFY from the Chino Groundwater Basin. Additional production allocations are received from annual entitlements of Early Transfers and Land Use Conversions, although they are subject to availability. Additional groundwater may also be available via the Dry Year Yield (DYY) program for the Chino Basin in partnership with the Chino Basin Watermaster, IEUA, and MWD. The DYY program is anticipated to reduce summertime peaking, deliver SWP supplies, control MWD surface water deliveries during future droughts/emergencies, and allow MWD to export stored water for other member agencies.

4.2.3 Adjudication – 1978 Judgment

In 1978, the Superior Court of the State of California entered a judgment that adjudicated the water rights of the Chino Basin, and imposed a physical solution, which is the heart of the Judgment.

According to the Judgment, there are significant imported water supplies available to supplement the native Safe Yield of the Basin. Therefore, the purpose of the physical solution was to establish a legal and practical means for making the maximum reasonable beneficial use of the waters of the Chino Basin by providing the optimum economic, long-term, conjunctive utilization of surface waters, ground waters and supplemental water, to meet the requirements of water users having rights in or dependence on the Chino Basin. A fundamental premise of the physical solution was that all water users dependent on the Chino Basin would be allowed to pump sufficient waters to meet their needs. To the extent that a water producer's pumping exceeds its share of the Safe Yield, the water producer has the obligation to provide for replenishment of the Basin for the amount of production exceeding its rights.

The Watermaster, as an extension of the court, manages the Basin in accordance with the provisions of the Judgment. An Assessment Package is produced by the Watermaster on an annual basis, which describes the rights and abilities to which appropriators are entitled according to the provisions of the Judgment.

4.2.4 Water Rights – 1978 Judgment

Three operating pools were established by the 1978 Judgment for Watermaster administration: the Overlying Agricultural Pool, the Overlying Non-Agricultural Pool, and the Appropriative Pool. Rights to the Safe Yield of the Chino Basin were allocated to each operating pool. According to the Judgment, the Safe Yield of the Chino Basin is 140,000 AFY. However, the court ordered Watermaster to re-evaluate the Safe Yield, and that re-evaluation is in progress. Preliminary results indicate it is possible the Safe Yield may be reduced. Safe Yield is defined as the long-term average annual quantity of groundwater (excluding replenishment water or stored water but including return flow to the Basin from the use of replenishment or storage water), which can be produced from the Basin under cultural conditions of a particular year without causing an undesirable result.

Overlying right is defined as the appurtenant right of an owner of lands overlying the Chino Basin to produce water from the Basin for overlying beneficial use on such lands. Appropriative right is defined as the annual production right of a producer from the Chino Basin other than pursuant to an overlying right.

Aggregate preserved overlying rights in the Safe Yield for agricultural pool use, including the rights of the State of California, total 82,800 AFY, or 414,000 AF in any five consecutive years.

Overlying rights for non-agricultural pool use total 7,366 AFY. In accordance with the provisions of the Chino Basin Watermaster process, when land converts from agricultural use to non-agricultural use, the purveyor that will supply water to the converted land may apply for additional groundwater production credit; i.e., Agricultural Land Use Conversion.

Appropriative rights allocated by the Judgment include rights by prescription and are entitled under the physical solution to share in the remaining Safe Yield, after satisfaction of overlying rights. Operating Safe Yield is defined as the amount of groundwater that the Watermaster shall determine can be produced from the Chino Basin by the Appropriative Pool parties free of replenishment obligation under the physical solution. Any subsequent change in the Safe Yield would debit or credit the Appropriative Pool. The City's current share of the Operating Safe Yield is 7.357 percent or 4,034 AFY.

4.2.5 Reallocation of Water Rights

According to the Judgment, in any five years that any portion of the share of Safe Yield allocated to the Overlying Agricultural Pool is not produced, that water is available for reallocation to the Appropriative Pool. Priority of that water is first to supplement water available from Operating Safe Yield to compensate for any reduction in the Safe Yield after the tenth year of operation (1988), conversion claims, and then for supplement to the Operating Safe Yield without regard to reductions in Safe Yield.

Appropriative rights and corresponding shares of Operating Safe Yield may be assigned or may be leased or licensed to another appropriator, as approved by the Watermaster.

4.2.6 Overdraft - 1978 Judgment

In adopting the Operating Safe Yield for any year, the Watermaster is limited to 200,000 acre-feet of accumulated overdraft, and in no event shall the Operating Safe Yield for all pools in any year be less than the Appropriative Pool's share of Safe Yield or exceed the Appropriative Pool's share of Safe Yield by more than 10,000 AF.

4.2.7 Groundwater Replenishment – 1978 Judgment

Overdraft is defined as a condition wherein the total annual production from the Basin exceeds the Safe Yield. The 1978 Judgment stated that the Chino Basin, since at least as far back as 1953, was in a condition of overdraft. The Watermaster reports that the Safe Yield of the Basin could be reduced unless certain actions are taken. These actions are to occur through the implementation of the Optimum Basin Management Program (OBMP). The State of the Basin Report also states that the Judgment allows a 5,000 AFY overdraft of Chino Basin through 2017.

The Watermaster levies an annual Replenishment Assessment in an amount sufficient to purchase replenishment water to replace production during the preceding year, which exceeds the Safe Yield.

In any year that the City may elect to produce groundwater in-excess of its available production rights (due to declining yield of the Basin or any other reason) to satisfy its needs, the City would incur a replenishment obligation. That obligation, along with all other similar replenishment obligations, would be tracked by the Watermaster as part of its responsibility to obtain water to meet all replenishment obligations, and issue annual assessments accordingly.

The Judgment provides that "Watermaster shall levy and collect assessments in each year,

pursuant to the respective pooling plans, in amounts sufficient to purchase replenishment water to replace production by any pool during the preceding year which exceeds the pool's allocated share of Safe Yield in the case of the overlying pools, or Operating Safe Yield in the case of the Appropriative Pool. It is anticipated that supplemental water for replenishment of Chino Basin may be available at different rates to the various pools to meet their replenishment obligations. If such is the case, each pool will be assessed only that amount necessary for the cost of replenishment water to that pool, at the rate available to the pool, to meet its replenishment obligation."

Supplemental water may be used to recharge the Basin either directly by spreading and percolating or injecting the water into the Basin, or indirectly by delivering the water for use in lieu of production and use of Safe Yield or Operating Safe Yield. Supplemental water may be obtained from any available source including recycled water, State water, local import, and Colorado River supplies.

The Judgment also provides that "Watermaster shall seek to obtain the best available quality of supplemental water at the most reasonable cost for recharge in the Basin."

Much of the available natural surface water runoff in the Santa Ana River Watershed is captured and recharged to the groundwater aquifers. A system of flood control channels and percolation basins have been developed to increase the recharge capacity of the Basin. The groundwater recharge program is planned to be expanded in the future.

4.2.8 Groundwater Replenishment – Recycled Water

IEUA has primary responsibility for production and delivery of recycled water to Chino Basin facilities for recharge. Direct use of recycled water has priority over recharge deliveries.

The Chino Basin Recycled Water Groundwater Project, developed by the Chino Basin Water Conservation District (CBWCD), IEUA, San Bernardino County Flood Control District (SBCFCD), and the Chino Basin Watermaster, includes redevelopment and modification of the existing Chino Basin groundwater recharge facilities. Historically, these basins have been used primarily for flood control, and as part of the OBMP, the recharge basins will help "drought-proof" the Chino Basin as they will be enhanced to capture storm water and provide for greater ability to store imported water in the Chino Basin.

The Recycled Water Groundwater Recharge Program is being implemented in two phases to reduce dependence on imported water that may not be available in the future. Phase 1 will recharge up to 44,000 AFY of storm water, recycled water and imported water within the upper portion of the Chino Basin. This will include recharging up to 20 percent recycled water, or about 8,000 AFY. Phase 2 is an expansion of Phase 1.

4.2.9 Carryover – 1978 Judgment

Any Appropriator who produces less than its assigned share of Operating Safe Yield may carry such unexercised right forward for use in subsequent years. The first water used in any such subsequent year is to be an exercise of that carryover right. If the aggregate carryover of any appropriator exceeds its share of Operating Safe Yield, it is eligible for storage.

4.2.10 Groundwater Storage Capacity – 1978 Judgment

The Judgment states that a substantial amount of available groundwater storage capacity exists in Chino Basin, which is not utilized for storage or regulation of Basin waters. The Basin stores approximately 5 MAF of groundwater and has the capability of storing an additional 1 MAF. Chino Basin reservoir capacity can appropriately be utilized for storage and conjunctive use of supplemental water with Basin waters. Any person or public entity may make reasonable beneficial use of the available groundwater storage capacity for storage of supplemental water, with allocation preference of storage capacity to the needs and requirements of the lands overlying the Basin and the owners of rights in the Basin.

4.2.11 Peace Agreement

Adopted in July 2000 and amended in 2004, the "Peace Agreement" amended the 1978 Chino Basin Judgment for a term of 30 years. The Peace Agreement facilitates the implementation of the Optimum Basin Management Plan (OBMP). The Peace Agreement amended the judgment in three areas:

- Members of the Overlying Non-Agricultural Pool have the right to transfer or lease their quantified production rights within the same pool or to the Watermaster in conformance with specified procedures.
- Any appropriator who provides water service to overlying rights to the extent necessary to provide water service to overlying lands.
- For the term of the Peace Agreement, in any year in which sufficient unallocated Safe Yield from Overlying Agricultural Pool is available for conversion claims, the Watermaster can allocate each appropriator with a conversion claim, 2.0 AF of unallocated Safe Yield water for each converted acre approved.

4.2.12 Overdraft – Peace Agreement

Individual producers do not currently have a limit on how much they can over-produce; however, they are assessed an amount to replenish the Basin for all overproduction. Producers generally develop annual demand projections that assist in making arrangements with other appropriators for pre-purchase of replenishment water through transfers and other agreements. This allows the Watermaster to optimize planning within the OBMP.

The Watermaster is responsible to conduct recharge and replenishment of the Basin. As part of its ongoing efforts to manage the basin so that ground water producers may pump groundwater in sufficient quantities to meet their needs, the Watermaster committed per the Peace Agreement to conduct physical recharge of supplemental water of 6,500 AFY in one or more of the areas known as Montclair, Brooks, and Upland spreading facilities (Management Zone 1 – MZ1). If the cumulative total of 32,500 AF of recharge has not been accomplished at the end of the five years, then recharge will continue at the same annual rate until 32,500 AF has been reached. The prescribed recharge of 32,500 AF was accomplished.

4.2.13 In-Lieu of Groundwater Production

Recharging the Basin may be accomplished either directly by spreading and percolating or injecting the water into the Basin, or indirectly by delivering the water for use in lieu of groundwater production and use of Safe Yield or operating Safe Yield.

In lieu areas are designated by the Watermaster. The Watermaster has designated the entire Chino Basin as an in-lieu area. Any member of the Appropriative Pool, who is willing to abstain for any reason from producing any portion of its share of operating Safe Yield in any year, may offer the unproduced water to the Watermaster. The Watermaster then may purchase the unproduced groundwater, in place of spreading replenishment water.

4.2.14 Storage and Recovery – Peace Agreement Local Storage

Local storage is protected and each party has the right to store its un-produced carry-over water in the Basin. Water held in storage is transferable, but storage capacity is not. Parties may continue to produce the actual quantity of water held in its storage account, subject only to the loss provisions. Rate of loss from local storage was zero percent until 2005. At that time, the Watermaster recalculated the rate of loss based on the best available scientific information. Hydraulic control has since been achieved (February 2016) and the current Storage Loss of 0.07 percent is deducted annually from local storage accounts. According to the Chino Basin Watermaster 2016-17 Production Year Assessment Package, the City's total stored water reserves (including Excess Carryover) were approximately 87,497 AF.

4.2.15 Storage and Recovery Program

As part of regional Storage and Recovery activities, a conjunctive use program (called Dry Year Yield) for the Chino Basin was developed. The program provides for MWD to store water in the Chino Basin. During periods of drought, when imported water is not in sufficient supply to meet all demands, MWD directs Chino Basin retail agencies to decrease their imported water use, and make-up the supply by producing groundwater from MWD's groundwater storage account (designed for 100,000 AF) based on agreements with MWD's DYY account. The DYY Program completed a full cycle in 2011, with Chino Basin benefitting from those facilities. This program is an example of storage programs that are necessary to optimize Basin storage and supplies, and reduce demand on imported water supplies.

4.2.16 Transfers – Peace Agreement

Transfers must have the approval of the Watermaster. Transfers include the assignment, lease, or sale of a right to produce water to another producer within the Chino Basin or to another person or entity for use outside the Basin whether the transfer is temporary or permanent. Lease of water rights are also permissible to allow producers to make up for the lessee's over-production.

Overlying Non-Agricultural Pool members have the right to transfer or lease within the pool, and the right to transfer to the Watermaster for the purpose of replenishment for a desalter or for a storage and recovery program.

4.2.17 Early Transfer

An "early transfer" means the reallocation of Safe Yield not produced by the Overlying Agricultural Pool to the Appropriative Pool on an annual basis rather than according to the five-year increment described in the Judgment. The Early Transfer of not less than 32,800 AFY was the expected approximate amount of water not produced by the Agricultural Pool. Early transfer is to be the greater of 32,800 AF or 32,800 AF plus the actual quantity of water not produced in a given year after all the land use conversions are satisfied. Early transfer water is allocated among members of the Appropriative Pool in accordance with their pro-rata share of the initial Safe Yield. The City of Chino's share of the initial Safe Yield is 7.357 percent, yielding an Early Transfer of 2,413 AFY.

4.2.18 Land Use Conversion of Water Rights

With the effective date of the Peace Agreement (June 2000), the amount of water rights converted from agricultural land to urban use was changed from 2.6 AFY per acre with allocation between initial shares of Safe Yield and service provider to 2.0 AFY per acre, all of which is allocated upon conversion of the land to the Appropriative Pool member service provider. Upon conversion of water rights, the purveyor pledges the amount of water needed for the urban land use, and up to 2.0 AFY per acre of land will be made available. Although the City is eligible for a maximum of 2.0 AFY per acre of converted land, the Watermaster will determine the amount of rights that is made available to the City. Based on historical data in recent years, the City has applied for such additional rights and received approximately 65 percent of the 2.0 AFY per acre (1.3 AFY per acre of land).

Major developments in the City that represent significant land use conversions include several development projects within Subareas 1 and 2, including The Preserve, Rancho Miramonte (formerly Mill Creek), SRG Chino South Industrial Park, Watson, Majestic, and Majestic Chino Heritage, as well as College Park to the north. The Majestic Chino Heritage project includes 97 acres of development. Therefore, the estimated potential eligible land use conversion associated with MCH represents an estimated total of 194 AFY of water rights at buildout. The Preserve Specific Plan includes 2,652 acres of development; therefore, the estimated potential eligible land use conversions associated with it represent an estimated total of 5,304 AFY of potential eligible water rights at buildout. College Park has 719 acres of development, and represents up to 1,438 AFY of potential eligible water rights at buildout.

The Rancho Miramonte development project has 222.35 acres of development eligible for conversion to urban use, representing potential for an additional 444.7 AF, and the SRG Chino South Industrial Park consists of 127.7 acres of development, with 81 acres eligible for conversion to urban use for a total of 162 AF. Two other development projects include Watson Land Company's Watson Industrial Park located east of the Chino Airport, which consists of Phase I of 180 acres; and the Majestic at Southeast project, which is a 155-acre site. These are eligible for conversion to urban use. The total maximum water rights that the City will receive through the land use conversion process applied to these developments, when combined with the City's current share of water rights at 3,666 AFY under the Chino Basin Operating Safe Yield and an Early Transfer share of 2,413 AFY, are 15,421 AFY.

An Agricultural Pool member has the right to a voluntary agreement with an appropriator, which has a service area contiguous to or inclusive of the agricultural land, to provide the required water to the overlying land on behalf of the Ag Pool member. The appropriator is then entitled to a credit to off-set production to the extent it is serving the overlying land up to the amount of the historical maximum annual quantity previously used on that property. The credit is debited to the Ag Pool's collective production right.

Total potential reallocations from Early Transfers and Land Use Conversions are subject to availability. As shown in Table 4.2-1, in FY 2016/17, the City received an Early Transfer share of 2,413 AF and a Land Use Conversion amount of 8,456 AF. At the conclusion of production year 2016/17, the City's net Agricultural Pool Reallocation was 9,951 AF.

4.2.19 Optimum Basin Management Program for the Chino Basin

In 1998, the Chino Basin 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 Basin. The OBMP encourages the increased use of local supplies to help "drought proof" the Basin.

The OBMP is intended to formulate and implement a groundwater management program that will preserve and enhance the Safe Yield and the water quality of the Chino Basin. The Watermaster's goal is to make it possible for all groundwater users to produce water from the basin for beneficial uses at an affordable cost. The OBMP is intended to allow continued reliance on groundwater for beneficial use within the basin while minimizing demand for imported water, and to encourage beneficial use of the large available storage space in the aquifer system. OBMP actions are intended to benefit both local and regional water supply programs.

The effort to complete the OBMP for the Chino Basin was divided into two phases. The first phase culminated in the September 1999 submittal of the draft Phase 1 Report to the Court with continuing jurisdiction over the Basin groundwater resources. The second phase, including a programmatic EIR, was completed and adopted in July 2000, as the Implementation Plan.

Phase 1 of the OBMP defined the state of the Chino Groundwater Basin, established the goals and objectives concerning major issues identified by stakeholders, and affirmed a management plan for the achievement of the stated goals and objectives. Phase 2 of the OBMP is the Implementation Plan for the installation and operation of OBMP facilities. The major OBMP facilities include pipelines, groundwater treatment plants, recharge basins, pump stations, production wells, and monitoring devices.

The four primary OBMP management goals are to enhance basin water supplies, to protect and enhance water quality, to enhance management of the basin, and to equitably finance the OBMP.

The OBMP includes nine program elements that were developed during the Phase 1 OBMP Report that collectively will meet the goals of the OBMP. The scope of implementation of some of the programs have been combined since they overlap and have synergies between them. The program elements include developing and implementing each of the following:

Element 1 – Comprehensive Monitoring Program
Element 2 – Comprehensive Recharge Program
Element 3 – Water Supply Plan for the Impaired Areas of the Basin
Element 4 – Comprehensive Groundwater Management Plan for Management Zone 1
Element 5 – Regional Supplemental Water Program
Element 6 – Cooperative Programs With the Regional Water Quality Control Board, Santa Ana Region, and Other Agencies to Improve Basin Management
Element 7 – Salt Management Program
Element 8 – Groundwater Storage Management Program
Element 9 – Storage and Recovery Programs

4.2.20 Peace II Agreement

The "Peace II Agreement" is a set of measures proposed by Chino Basin Watermaster and approved by parties to the Chino Basin Judgment to supplement the OBMP Implementation Plan. Focus for the measures are placed on achieving hydraulic control (reduction of

groundwater discharge from the Chino North Management Zone to the Santa Ana River). To achieve hydraulic control, re-operation (controlled overdraft) of the groundwater basin is proposed. Groundwater would be withdrawn from Desalter facilities strategically to benefit the long-term reliability of the Basin. A corresponding replenishment obligation will be assigned to the various desalters consistent with the obligation for replenishment (already directed by the Judgment and Peace Agreement). But, 400,000 AF would be satisfied by authorized overdraft.

Hydraulic control of the Chino Basin was achieved February 2016. This effectively reduced reliance on imported water supply and loss of stored water from the basin. Hydraulic control through re-operation helps drought proof the basin by allowing for recharge of reclaimed water to supplement Basin storage.

The recommendations set forth in the Peace II Agreement consist of: 1) expansion of the desalter program to 40,000 acre-feet by 2012 with new well pumping located to best provide hydraulic control, 2) strategic reduction in groundwater storage with a controlled overdraft of up to 400,000 AF, 3) the added benefit of recharge using reclaimed water, and 4) the establishment of a new Recharge Master Plan to re-investigate and establish long-term operational objectives.

In FY 2009/10, the Watermaster provided updates to the Groundwater Recharge Master Plan in response to changes in demand, recharge capacity, Safe Yield, and other factors. Consistent with the Peace II Agreement, the Watermaster completed an update of the Master Plan for the Chino Basin in July 2010. The Watermaster prepared another update to the Groundwater Recharge Master Plan. The proposed Groundwater Recharge Master Plan identifies opportunities for enhanced storm water, recycled water, and imported water recharge including low impact development, new recharge projects and integrated storm water facilities.

4.2.21 Chino Groundwater Basin Safe Yield Re-determination

The Chino Groundwater Basin has been adjudicated and is subject to the terms and conditions of the January 27, 1978 SBSC Judgment (RCV 51010) which was restated in 2012 by that certain Restated Judgment (Judgment). Per the Judgment, the Safe Yield of Chino Basin is 140,000 acre feet per year. The Judgment requires that the Chino Basin Watermaster (CBW) conduct a redetermination of the Safe Yield of 140,000 acre feet after the first ten (10) years of operation of the physical solution. Under the Judgment, that redetermination was to have been completed in 2011 and is pending.

At this time, the final outcome of any court-ordered Safe Yield redetermination is unknown. However, based on available information, it is possible the Safe Yield may be reduced from the 140,000 acre-feet quantity that has been in-place since the time the Judgment was implemented in 1978. It is generally understood by the stakeholders that such a reduction would impact the annual shares of Operating Safe Yield allocated to the Appropriators, that overlying rights allocated to the Agricultural Pool and individual members of Non-Agricultural Pool would not be reduced, and that the respective amounts of reduction to the Appropriators would be restored, partially or fully, from any under-utilized overlying Agricultural Pool groundwater production rights, which currently are re-allocated to Appropriators on an annual basis. These under-utilized Agricultural Pool rights are the same rights that also satisfy requests for (but for the last several years, only partially satisfied all requests) agricultural land use conversions and early transfers. Because the under-utilized Agricultural Pool rights would be first used to restore Appropriators' respective shares of Operating Safe Yield diminished by the reduction in the Safe Yield, the amount of under-utilized Agricultural Pool rights available to satisfy land use conversions and early transfers would be reduced to a level that would not totally satisfy the

water demands of the land use conversion. Because all agricultural land in the City of Chino is undergoing urbanization, the City of Chino's reliance on land use conversions to satisfy the water needs of such urbanization would be adversely impacted by a reduction in the Safe Yield.

4.2.22 City of Chino Wells

Table 4.2-2 presents the City's current wells and associated capacities (2017).

Table 4.2-2 City of Chino Anticipated Groundwater Wells Status – 2017 (gpm)

Number	Max Well Capacity	Anticipated Capacity	Operational Status
3	0	0	Inactive; last observed capacity (1970's) was 600 gpm
4	900	0	Inactive due to high level of nitrate
5	1,300	1,090	Out of service
6	935	0	Inactive due to high level of perchlorate
7	0	0	Inactive; hydrogeological conditions contribute to the need to reconstruct well
9	2,300	2,285	Active
10	1,200	1,175	Active
11	1,900	1,900	Active
12	2,200	600	Active after re-equipping and blending with imported water
13	1,500	1500	Active
14	2,297	0	Inactive due to high level of perchlorate
15	Unknown	Unknown	Well has not been fully developed or equipped
16	1,025	600	Active; capacity is limited by the high level of nitrate
17	1,200	0	Constructed unequipped
18	1,200	1,200	Active
33	2,000	0	Active; pending an amended permit
Total	19,957	10,350	

Source: City staff correspondence, March 2018.

The City's Water System Master Plan includes recommendations for well improvements for system reliability and continued groundwater pumping. Improvements are discussed in Section 5.1.

Tables 4.2-3 and 4.2-4 provide the amount and location of groundwater pumped for the last several years and groundwater projections through the year 2040, respectively.

Table 4.2-3 City of Chino
Historic Groundwater Production from Chino Basin (AF) [1]

Well Number	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
4	356	479	807	739	780	478	709	85	0	0	0	0	0
5	550	231	326	282	620	1,260	36	781	573	908	1,071	0	0
6	273	528	897	1,110	837	992	892	1,201	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	-	-	-	-
9	75	1,677	2,701	2,913	2,535	610	2,154	1,663	2,772	1723	0	0	0
10	0	0	0	0	160	1,076	340	573	79	554	1,750	1,517	1,269
11	1,982	1,961	1.823	1,771	2,228	1,768,	1,922	2,134	2,092	2020	1,728	2,042	2,062
12	89	0	0	0	0	0	0	0	63	693	487	644	529
13	776	819	1,251	1,501	1,480	1,253	1,209	1,164	1,010	825	755	380	1,479
14	1,649	1,464	677	0	0	0	0	0	0	0	0	0	-
16	0	0	0	0	0	0	0	0	44	48	67	71	56
18	-	-	-	-	-	-	-	-	-	-	-	55	69
Total	5,750	7,159	8,482	8,316	8,640	7,437	7,262	7,601	6,633	6,771	5,858	4,709	5,464

[1] Source: Chino Parcel Delivery WSA draft, April 2018.

Table 4.2-4 City of Chino
25-Year Projection - Groundwater Pumping from the Chino Basin (AF) [1]

2020	2025	2030	2035	2040
6,909	8,343	9,705	10,592	13,002

[1] Based on City of Chino 2015 UWMP, Table 6-9, and adjusting groundwater figures by Table 7-2 "difference".

4.3 Imported Water (Surface Water) – Water Facilities Authority

The City receives its imported water through the Water Facilities Authority (WFA). The WFA Agua de Lejos Treatment Plant is located in Upland, and receives surface water from the SWP. The water is purchased from MWD through IEUA.

MWD's Rialto Branch of the Foothill Feeder delivers SWP water to the WFA Agua de Lejos Water Treatment Plant for treatment. The Agua de Lejos Water Treatment Plant is permitted to treat 81 MGD of SWP water. The actual quantity of treated water has ranged from 12 MGD in the winter months to as high as 70 MGD during the summer. WFA water enters the City's potable water distribution system at Benson Avenue and State Street. The regional water management strategy within WFA's service area is to maximize the use of local water supplies

and minimize the need for additional imported water, especially during dry years and other emergencies when imported water is less reliable. With the continuing investment in the development of regional facilities that will maximize the availability of local supplies, including groundwater recharge, desalting, recycled water and water use efficiency programs, local water supplies are expected to meet nearly 80 percent of the water needs within the City's service area. The overall need for full service imported water is expected to remain at approximately the same level of demand compared to recent years.

The City is entitled to 5.9 percent of the WFA Agua de Lejos Plant capacity (5,353 AFY or 4.78 MGD). However, the City has historically taken up to 7.0 percent of the capacity (6,385 AFY or 5.7 MGD). Table 4.3-1 shows historical imported water production from 2004 through 2017.

Table 4.3-1 – City of Chino
Historic Annual Imported Water Production (AF) [1]

WFA	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Imported Water	4,837	4,457	3,622	2,579	2,602	2,637	3,245	4,394	3,600	2,397	3,669	3,415

[1] Source: Chino Parcel Delivery WSA draft, April 2018.

The City may take delivery of more than its entitlement when other WFA members are not taking delivery of their full entitlements. Historically, there has always been unused capacity and Chino has always had an opportunity to meet water quality standards and demands through additional WFA imported water. With the investment in local water supplies there is no expected increase in imported water deliveries for Chino for the 2015 UWMP planning horizon.

4.4 Recycled Water

Water recycling involves the treatment of wastewater to create a high quality, safe source of water for outdoor irrigation, industrial and groundwater recharge uses. Water recycling is a critical component of the water resources management strategy for the region. The City relies on the Regional Recycled Water Distribution System operated by IEUA for its recycled water supply. Development and expansion of the regional system is critical to meeting the City's anticipated demands for recycled water. Development of the local recycled water distribution lines within the City is a partnership between the City, IEUA, and developers.

Reuse of highly treated tertiary water is available to meet the growing water demands of the IEUA service area. Recycled water will provide a dependable local supply of water as well as reduce the likelihood of water rationing during droughts. In addition, the use of recycled water for groundwater recharge is an integral part of the OBMP. Region-wide implementation of recycled water projects is vital to the protection and enhancement of the Safe Yield and water quality of the Chino Groundwater Basin.

4.4.1 IEUA Regional Wastewater Treatment Plants

IEUA operates four regional wastewater treatment plants: Regional Plant No.1 (RP-1), RP-4, RP-5, and the Carbon Canyon Water Reclamation Facility (CCWRF). Each treatment plant produces tertiary treated recycled water in compliance with California's Title 22 regulations and exceeds the stringent public health standards. IEUA's goal is to use as much recycled water for local beneficial direct use as is economically practical and for replenishment of the Chino Basin.

According to IEUA's 2015 UWMP, treated wastewater available from IEUA's four regional facilities was 56,784 AF in 2015 with 60 percent usage, or 33,419 AF, of which approximately 10,840 AF was used for groundwater recharge. With future expansions to the treatment plants, IEUA estimates availability and usage to increase to approximately 83,000 AF and 68,000 AF, respectively, by Year 2040. The difference between supply and usage is discharged to the Santa Ana River in accordance with the minimum discharge commitment of the 1969 Santa Ana River Judgment.

IEUA provides wastewater service to seven contracting agencies, including the cities of Chino, Chino Hills, Fontana, Montclair, Ontario, and Upland, and the Cucamonga Valley Water District. Additional sources of recycled water used within IEUA's service area include the Upland Hills Water Reclamation Plant (operated by the City of Upland) and the CIM Water Reclamation Plant (operated by the California Institution for Men at Chino).

4.4.2 Recycled Water for Regional Direct Use and Groundwater Recharge

Recycled water used for groundwater recharge is blended with MWD's imported SWP supplies and local storm water, consistent with the water quality requirements of the Chino Basin Watermaster's OBMP, Santa Ana Regional Water Quality Control Board's Basin Plan and the SWRCB Division of Drinking Water (DDW).

Depending on basin specific measurements and up-gradient groundwater migration data, the blending ratio will be calculated to achieve up to 50 percent with all other sources of water as determined by DDW over a 10-year period. Additional facilities, including development/modifications of new groundwater recharge basins, and installation of additional pumping capacity, will be needed to achieve the long-term water recycling goals for the region. As more and more direct use customers are connected, groundwater recharge will be operated to ensure availability for direct reuse.

Development of local recycled water facilities will be key to expanding the direct use of recycled water. Direct uses include irrigation for landscaping, industrial process and cooling, and recreational uses, including decorative fountains. All future direct use by landscape and industrial customers will be given priority service over recharge deliveries. Recharge will be credited based upon the annual flow contributions for all contracting agencies on a pro-rata basis.

4.4.3 Recycled Water Use in the City of Chino

The City recognizes the potential uses of recycled water in its community, such as landscape irrigation, parks, industrial and other uses, and works with IEUA to develop the needed recycled water infrastructure to support use of recycled water.

In 2015, the City provided 7,993 AFY of recycled water from the IEUA Regional Recycled Water System to landscape irrigation, agricultural irrigation, industrial customers, and construction customers. Projected ultimate use of recycled water in the City is estimated to decrease with the conversion of irrigated agricultural lands to urban uses. Recycled water use is conservatively expected to decrease due to the land use conversions by approximately 50 percent in the 2015 UWMP planning horizon, as shown in Table 4.4-1.

Table 4.4-1 Projected Recycled Water Use within the City of Chino (AF)

	2015	2020	2025	2030	2035	2040
Total Recycled Water Use	7,993	5,791	4,129	3,810	3,826	3,841

Source: City of Chino 2015 UWMP, Tables 6-8 and 6-9.

By Year 2040, approximately 83,000 AFY of recycled water is expected to be available within the IEUA service area from the Regional Plants. IEUA estimates total recycled water usage of 68,000 AFY by 2040, which includes Chino's estimated usage. This demonstrates that available recycled water supply is projected to meet, or exceed, demand in all hydrologic conditions.

4.5 Desalted Water

The Chino Groundwater Basin is the water source for the Chino Basin Desalter Authority (CDA). Since August 2000, the Chino I Desalter produced approximately 8.4 MGD of potable water until its expansion in 2006 increasing capacity to 12.7 MGD. Facilities consist of approximately 14 groundwater wells located within the southern portion of the Chino Groundwater Basin, a central water treatment plant (WTP), and pipelines to deliver water from the wells to the WTP and from the WTP to the water retailers (cities of Chino, Chino Hills, Ontario, and the Jurupa Community Services District/City of Norco). In 2006, the CDA constructed a new Chino II Desalter in Mira Loma, CA. The Chino II Desalter has a treatment capacity of approximately 11,200 AFY and is supplied by 8 additional wells.

The Western Municipal Water District (WMWD) joined the CDA in November 2008, triggering expansion of the Chino II Desalter (known as the Phase 3 Desalter Project) by 10.5 MGD (11,800 AFY). The water supply for the new expansion of the Chino II Desalter is planned to be produced from a new set of wells known as the Chino Creek Well Field (CCWF) plus other wells as needed in order to produce the requisite amount of raw groundwater supply for treatment. The CCWF consists of five (5) recently drilled production wells located in the southwest area of the Chino Basin. The location of these new wells is critical to the attainment of hydraulic control of the Chino Basin.

Since the desalters are supplied from groundwater wells, the amount of water produced by the desalters is subject to replenishment by the Watermaster to prevent overdrafting. The Watermaster has identified a hierarchy of water sources/supplies for replenishment purposes. Replenishment water is provided from the following: (1) the Watermaster Desalter Replenishment account; (2) new yield of the Basin; (3) Safe Yield of the Basin; and (4) additional replenishment water purchased by the Watermaster.

The Chino I and II Desalters managed by the CDA is operated in accordance with the following: (1) "take-or-pay" agreements with the purchasers of the water; (2) an agreement with MWD to reduce the cost of the water produced by the Desalters; and (3) an agreement with the Watermaster regarding replenishment obligations for operating the Desalters. Since the desalters are supplied from the Chino Groundwater Basin, the amount of groundwater produced is subject to replenishment by the Watermaster to prevent overdrafting. The Watermaster has identified a hierarchy of water sources/supplies for replenishment purposes. Replenishment water is provided from the following: (1) the Watermaster Desalter Replenishment account; (2) new yield of the Basin; (3) Safe Yield of the Basin; and (4) additional replenishment water purchased by the Watermaster.

The City of Chino entered into a contract in 1996 committing to purchase a minimum of 3,000 AFY on a "take or pay" contractual basis. Expansion of the Desalter increased the City's flow allocation and commitment to 5,000 AFY.

The contract allows the City of Chino to obtain additional product water if the Chino Basin Desalter Authority is capable of producing more Product Water than is necessary to satisfy the requirements of the purchasers. The City is entitled to purchase a minimum proportionate share of additional Product Water. Under this contract, Chino is also entitled to unused Product Water if it remains available after offered to all purchasers up to their respective percentages. Chino also has the opportunity to negotiate the purchase of contracted desalted water with purchasers that are constrained by the "take-or-pay" obligation, but have optimized other sources of local water and do not need to take their full entitlement.

The CDA originally contracted to provide a combined total of 9,200 AFY of product water from the Chino I Desalter to Jurupa Community Service District (JCSD) and the cites of Chino, Chino Hills, and Norco. The Chino I Desalter Expansion added 5,000 AFY of potable water available for use. The resultant total of 14,200 AFY was allocated between the cities of Chino, Chino Hills, Norco and Ontario, and the JCSD and the Santa Ana River Water Company. With an additional 10,400 AFY of contracts associated with Chino II desalter, CDA is currently contracted to provide a combined total of 24,600 AFY of product water, and upon completion of the Phase III expansion contract, contract amounts would increase to a total of 35,200 AFY.

5.0 RELIABILITY OF WATER SUPPLIES

The City's water supply portfolio includes groundwater from the Chino Basin, desalted water delivered through the CDA, imported water delivered through the WFA, and recycled water delivered through IEUA. The City has met historical water demands with these supplies, including demands during average, single-dry, and multiple-dry year scenarios.

The City has been able to meet all demands with its existing water supply portfolio, even through periods of single and multiple-dry years. As previously discussed, the City's primary water supply source is groundwater pumped from the Chino Basin by City and CDA wells. The Chino Basin is managed by the Watermaster and is considered to be a reliable supply source, even during periods of drought. The IEUA/WFA 2015 Plan projects that both the WFA imported water supply and the IEUA recycled water supply will be 100 percent reliable even through periods of drought. Consequently, the percent of average supply available during single and multiple-dry years is projected to be 100 percent. Demands, and/or desalter replenishment obligations, may also be met by withdrawals from groundwater storage. As of June 30, 2015, the City's total stored water reserves were in excess of 80,000 AF.

5.1 City of Chino Supply and Distribution

The City's water system is expanding as a result of the facilities (e.g. pipelines, wells, storage tanks) that are necessary to supply water to new developed areas such as The Preserve, College Park, Rancho Miramonte development (formerly Mill Creek), SRG Chino South Industrial Park, Watson Industrial Park, and Majestic at Southwest.

The City currently utilizes SWRCB-DDW approved treatment and blending plans to meet drinking water standards. The City has completed construction of the Eastside Water Treatment Facility (EWTF). The EWTF is a 3,500 gallons-per-minute (gpm) ion exchange water treatment plant which treats water produced from Wells 13 and 18 (currently impacted with elevated nitrate concentrations). In addition, the City recently completed development of a new well. The water produced from the new well is also treated at the EWTF. These new facilities enhance system reliability and redundancy. The City's approach to system management provides for redundant infrastructure, resulting in more available capacity than demand, and multiple sources of available supply.

5.2 Chino Basin Watermaster

As required by the Court, the Chino Basin Watermaster prepares semiannual reports that describe implementation of the OBMP and provide information on each OBMP program element and their implementation status.

5.2.1 Groundwater Level Monitoring

The City's primary source of water supply is groundwater produced from the Chino Basin. The Chino Basin is adjudicated and managed by the Watermaster to maintain groundwater levels. The City has been able to produce groundwater from the Chino Basin, even during periods of drought. With continued management of the Chino Basin to maintain groundwater elevations, the Chino Basin is considered to be a reliable future source of supply and may be used to offset any potential future reductions of WFA supply.

5.2.2 Dry Year Yield Program

The DYY Program is the first step in a phased plan to develop and implement a comprehensive conjunctive use program to allow maximum use of imported water available during wet years and stored groundwater in the Chino Basin during dry years allowing MWD to utilize the Chino Basin for dry year storage of up to 100,000 AF of surplus imported water. Imported water deliveries to participants would increase during wet or normal years, and demands could be satisfied from the stored water during dry years while minimizing the need for imported water.

The storage and recovery activities of this conjunctive use of the Chino Basin are a critical component of the Dry Year Yield program. The program provides for MWD to store water in the Chino Basin. During periods of drought, when imported water is not in sufficient supply to meet all demands, MWD directs Chino Basin retail agencies to decrease their imported water use and make-up the supply by producing groundwater from MWD's groundwater storage account. MWD can provide up to 100,000 AF of stored water in the Chino Basin based on agreements with MWD's DYY account. The DYY Program completed a full cycle in April 2011, with Chino Basin benefitting from those facilities, and MWD having filled the account and subsequently drawing it down over three years. This program is an example of how demands on the Chino Basin can optimize its use and reduce demand on imported water supplies.

5.2.3 Land Subsidence Monitoring

Land subsidence is a current groundwater issue in the Chino Basin. Land subsidence can occur in areas where underlying fine-grained sediment layers (silt and/or clay) are dewatered over a long period of time allowing these layers to compress. According to the Phase I OBMP Report, subsidence and ground fissuring has been documented in portions of the City. An area underlying a portion of the City experienced ground fissuring as early as 1973, and an accelerated occurrence of subsidence ensued after 1991. A common cause of ground fissuring within alluvial basins is the removal of subsurface fluids resulting in compaction of poorly consolidated aquifer materials and land subsidence.

Remote sensing studies of subsidence were conducted for the City in 1999 to further analyze the location and relative magnitude of subsidence in MZ-1. It was concluded that the cause of this subsidence was declining groundwater levels below a critical elevation, resulting from groundwater production from deep wells in the area. (The City does not operate any deep wells in the affected area.)

The Watermaster has developed a ground-level monitoring program that includes multiple tools to evaluate subsidence. The Watermaster's ground-level monitoring program includes the monitoring of piezometric levels, aquifer-system deformation, vertical ground-surface deformation, and horizontal ground-surface deformation. It appears that the abatement of land subsidence in MZ-1 is related to the recovery of piezometric levels that has resulted from decreased deep zone pumping. The Watermaster-recommended groundwater elevations and pumping constraints designed to prevent further subsidence have not caused any reduction in groundwater supplies.

5.3 State Water Project (SWP)

5.3.1 SWP Reliability Update

The reliability of the SWP impacts MWD's member agencies' abilities to plan for future growth and supply. In January 2010, the DWR Bay-Delta Office published a report specifically

addressing the reliability of the SWP. The report provides information on the reliability of the SWP to deliver water to its contractors assuming historical precipitation patterns. The report has been updated three times – in 2013, 2015 and 2017. The 2017 DCR uses the following assumptions to model current conditions: existing facilities; hydrologic inflows to the model based on 82 years of historical inflows (1922 through 2003); current regulatory and operational constraints; and contractor demands at maximum Table A amounts. The updated report projects deliveries of SWP imported water to have a 77 percent likelihood that more than 2,000 TAF of Table A water will be delivered annually. This compares to 74 percent likelihood in the 2015 Report.

5.3.2 Imported Water Supply Constraints

The City of Chino is a sub agency of the IEUA. Other retail water service agencies located within the IEUA service area include the City of Chino Hills, Cucamonga County Water District, Fontana Water Company, Monte Vista Water District, City of Ontario, and the City of Upland. Through the IEUA, the City purchases imported water from the WFA. The WFA source water is supplied through the SWP, which has varying annual allocations depending on hydrologic conditions in Northern California. The IEUA/WFA 2015 Plan states that the projected imported water supply reliability for the WFA is 100 percent during normal year, single-dry year, and multiple-dry year scenarios. However, MWD periodically performs maintenance on its distribution system, which potentially impacts the availability of imported water to the WFA. In the event of a reduction of WFA supply to the City, the City may shift to groundwater supplies to satisfy potable demands.

5.4 Recycled Water

The IEUA/WFA 2015 UWMP projects that IEUA recycled water supply will be 100 percent reliable even during periods of drought. IEUA has wholesale responsibility for production and delivery of recycled water to its service area overlying the Chino Basin. According to the Chino Basin Judgment maximum beneficial use of recycled water shall be given priority by the Watermaster and the direct use of recycled water to satisfy demands has received priority over deliveries of recycled water for recharge.

5.4.1 Recycled Water for Direct Use

Recycled water is becoming an increasingly important source of local water for the region due to its effect on reducing potable water supplies, and its drought-tolerant characteristics. During multiple dry years, reliability of recycled water is largely unaffected. It is projected that during multiple dry years, utilization of recycled water for direct irrigation will increase over normal usage due to increased irrigation needs.

In the Chino region, the majority of recycled water is used for irrigation. Future recycled water use can increase by establishing distribution piping in new developments, retrofitting existing landscaped areas and constructing recycled water pumping stations and transmission mains to reach areas far from the treatment plants. The City is considering expansion of the recycled water distribution system to northern portions of the City. The expansion of the City's recycled water distribution system would serve to partially maintain recycled water demands by replacing the expected loss of agricultural demand (due to development) with the conversion of potable landscape irrigation customers in the northern portion of the City.

To optimize the use of recycled water, cost/benefit analyses must be performed to evaluate the feasibility of recycled water system projects in comparison to alternative water supply options.

The technical and economic feasibility of serving recycled water depends on the identification of end users in conjunction with the construction of additional facilities and availability of recycled water supply.

The City will continue to perform cost/benefit analyses for recycled water projects, and seek creative solutions and a balance to recycled water use, in coordination with IEUA. These include solutions for funding, regulatory requirements, institutional arrangements and public acceptance.

5.4.2 Recycled Water for Groundwater Recharge

The Chino Basin Recycled Water Groundwater Recharge Program (GRP) was developed and jointly sponsored by the CBWCD, IEUA, San Bernardino County Flood Control District (SBCFCD), and the Chino Basin Watermaster. The GRP is a comprehensive water supply program to enhance water supply reliability and improve groundwater quality throughout the Chino Basin by increasing the recharge of stormwater, imported water, and recycled water. The GRP includes redevelopment and modification of the existing Chino Basin groundwater recharge facilities. These basins have been used primarily for flood control. And, as part of the OBMP, the recharge basins will help “drought-proof” the Chino Basin.

5.5 Water Quality Effect on Water Management Strategies and Supply Reliability

Although the City has met historical water demands with available supplies, the proportional mix of supplies utilized have shifted in response to water source constraints, sometimes impacted by water quality. The City works collaboratively with the Chino Basin Watermaster, WFA, IEUA, and CDA to achieve the highest quality of water and to ensure reliability of water supplies. The identified water quality issues facing the City include TDS, nitrate, VOCs, 1,2,3 Trichloropropane (1,2,3 TCP), and perchlorate. A variety of water management strategies are implemented or planned for implementation by the City as discussed below.

5.5.1 Groundwater Quality Constraints

The City conducts routine monitoring of required constituents to meet SWRCB-DDW standards and provides an annual water quality report to its customers, known as the Consumer Confidence Report. The identified water quality issues potentially impacting the City’s untreated groundwater sources include total dissolved solids (TDS), nitrate, volatile organic compounds (VOCs), 1,2,3 TCP and perchlorate. The City currently utilizes SWRCB-DDW approved treatment and blending plans to meet drinking water standards. The City has completed construction of the Eastside Water Treatment Facility (EWTF). The EWTF is a 3,500 gallons-per-minute (gpm) ion exchange water treatment plant which treats water produced from Wells 13 and 18 (currently impacted with elevated nitrate concentrations). In addition, the City recently completed development of a new well. The water produced from the new well is also treated at the EWTF. These new facilities enhance system reliability and redundancy.

5.5.2 Groundwater Quality Monitoring and the GRP

As part of OBMP Program Element 1, the Watermaster conducts a water quality monitoring program that relies on the cooperation of municipal producers and other government agencies to supply groundwater quality data. Watermaster supplements these data with data obtained through its own sampling and analysis program. Groundwater monitoring is also conducted by private and public entities as part of contaminant cleanup activities. These programs consist of networks of monitoring wells designed specifically to delineate and characterize the extent of the

responsible party's contamination. The following is a summary of the historical contamination monitoring and cleanup sites in the Chino Basin:

- Chino Airport Plume: Constituent of Concern – VOCs RWQCB Cleanup and Abatement Order 90-134
- California Institution for Men Plume: Constituent of Concern – VOCs Voluntary Cleanup Monitoring
- General Electric Flatiron Facility Plume: Constituent of Concern – VOCs Voluntary Cleanup Monitoring
- General Electric Test Cell Facility Plume: Constituent of Concern – VOCs Voluntary Cleanup Monitoring
- Kaiser Steel Fontana Site Plume: Constituent of Concern – TDS/TOC Settlement Agreement to Mitigate
- Milliken Sanitary Landfill Plume Constituent of Concern – VOCs RWQCB Cleanup and Abatement Order 81-003
- Upland Sanitary Landfill Plume Constituent of Concern – VOCs RWQCB Cleanup and Abatement Order 98-99-07

South Archibald Plume (formerly referred to as Ontario Airport Plume) Constituent of Concern – VOC Plume south of Airport Voluntary Investigation and Monitoring by Responsible Parties

Stringfellow National Priorities List Site Plume Constituent of Concern – VOCs, Perchlorate, NDMA, Heavy Metals Subject to four USEPA Records of Decision Starting in 1999, and the Comprehensive Monitoring Program initiated the systematic sampling of private water supply wells south of State Route 60 in Chino Basin. Over a three year period, Watermaster developed a baseline data set. This program has 111 private water supply wells, and about half of these wells are sampled bi-annually in the southern portion of the Basin. Sampling is conducted for the following water quality analyses:

- All groundwater samples are analyzed for general mineral and general physical parameters.
- Wells within or near the two VOC plumes south of Ontario and Chino Airports are being analyzed for VOCs, in addition to the general mineral and general physical parameters.
- All private wells in the key program are being analyzed for Perchlorate because of its widespread occurrence in the recent sampling program, and the concerns expressed by appropriators faced with expensive treatment costs for Perchlorate- contaminated wells.

The Watermaster's annual State of the Basin Reports detail Basin management and monitoring including General Hydrologic Conditions, Basin Production and Recharge, Groundwater Levels, Groundwater Quality, and Ground Level Monitoring (for subsidence issues). The Watermaster continues to update its understanding of contaminants of concern in various plumes, and the extent of their migration.

The Chino Basin Recycled Water Groundwater Recharge Program (GRP) was developed and jointly sponsored by the CBWCD, IEUA, San Bernardino County Flood Control District (SBCFCD), and the Chino Basin Watermaster. The GRP is a comprehensive water supply program to enhance water supply reliability and improve groundwater quality throughout the

Chino Basin by increasing the recharge of stormwater, imported water, and recycled water. The GRP includes redevelopment and modification of the existing Chino Basin groundwater recharge facilities. These basins have been used primarily for flood control, and as part of the OBMP, the recharge basins will help "drought-proof" the Chino Basin. The basins will be enhanced to capture storm water and provide for the greater ability to store imported water in the Chino Basin.

5.5.3 Imported Water Quality

In coordination with member agencies, MWD incorporated water quality management strategies to maintain the reliability of its supplies. MWD supplies through the SWP have been significantly less than 100 percent reliable during the current drought. Although the established percentage of Table A amounts have significantly increased during the current rainy season, this can quickly reverse, as history has shown. Water quality can also impact imported water from MWD and its supply reliability.

As part of the Dry Year Yield Project previously discussed, the City entered into a joint water supply enhancement project with the Monte Vista Water District, which was expected to result in additional high-quality groundwater supplies. The project developed a new well for the injection of WFA imported water into the Basin, and the recovery of groundwater from the well. High-quality water that is injected was anticipated to blend with lower quality groundwater to produce water of drinking water standards. To safeguard against the possibility of the quality of pumped water being lower than expected (due to high Nitrates), wellhead treatment (ion-exchange) was put in place.

5.6 Diversified Water Resource Mix

The City is seeking to maximize the use of alternative supplies resulting in a diversified water resource mix. The City's Water System Master Plan identifies the maximum use of recycled water and desalted water, where appropriate and available, as part of the City's plan to ensure a reliable water supply for its service area. Additionally, groundwater will continue to be a focus of water management for the City to optimize and ensure reliability of this valuable and significant local resource.

5.7 Interconnections

To increase system reliability, the City has established interconnections with neighboring water agencies that may be activated in the event of an isolated interruption of water supply, and would serve to facilitate mutual aid. Interconnections presently exist between the City's system and the systems operated by the City of Ontario, City of Upland, and the Monte Vista Water District. The City may establish additional interconnections with neighboring water agencies' systems including the cities of Pomona, Chino Hills, and the Jurupa Community Services District.

5.8 Water Shortage Plans

5.8.1 City of Chino's Water Shortage Contingency Plan

In 2009, the City of Chino adopted the new Water Conservation Ordinance ("Ordinance") replacing and superseding the previous Chapter 13.05 of the Municipal Code (included in Appendix E). The Ordinance was updated to respond to the water shortage caused by drought conditions prevailing in the state at the time. The Ordinance implements Water Conservation

measures to reduce the quantity of water used per person in the City. The Ordinance further defines permanent measures to prevent the waste of water resources, and defines three stages of water shortage contingency where additional measures of potable water use are limited or curtailed.

A Stage 1 Water Shortage would take effect upon a declaration by the City Council that needed water supplies are anticipated to be reduced by up to 10 percent. A Stage 2 Water Shortage would take effect upon a declaration by the City Council that needed water supplies are anticipated to be reduced by 10 to 20 percent. A Stage 3 Water Shortage would take effect upon a declaration by the City Council that needed water supplies are anticipated to be reduced by 20 percent or more.

Ordinance No. 2009-04 includes permanent prohibitions on water uses, which are in effect at all times, in addition to prohibitions on water use during declared water shortage Stages 1 through 3. A water shortage stage would be declared by resolution of the City Council and includes prohibitions on wasteful water uses such as irrigating during day-time hours, washing down of hard surfaces, and allowing irrigation runoff.

The City adopted an Urgency Ordinance in June 2015 as a result of Governor Brown's Executive Order declaring a significant water shortage. Urgency Ordinance No. 2015-004 included additional water conservation measures to be implemented during times of declared water shortage emergencies, and includes additional prohibitions on wasteful water uses.

As a sub-agency of IEUA, the City will also respond to MWD's Water Surplus and Drought Management (WSDM) Plan. IEUA will also follow the guidance of MWD's WSDM Plan, while considering the needs and water shortage actions of each sub-agency. The City will focus on implementing/enforcing the elements of its own contingency plan in association with IEUA's response to a declared regional water shortage.

5.8.2 MWD's Water Surplus and Drought Management Plan

In 1999, MWD developed a WSDM Plan that included guidelines for implementing water supply restrictions in the event of a water shortage. The WSDM Plan does not outline specific criteria for how water would be distributed among the MWD member agencies during water shortage conditions, but states that the methods to be used for determining reduction in supplies to each member agency would be developed in a manner that was equitable and minimized hardship to retail water customers. The WSDM Plan will guide management of regional water supplies to achieve the reliability goals of Southern California's IRP. The IRP sought to meet long-term supply and reliability goals for future water supply planning. The WSDM Plan's guiding principle is to minimize adverse impacts of water shortage and ensure regional reliability. From this guiding principle come the following supporting principles:

- Encourage efficient water use and economical local resource programs.
- Coordinate operations with member agencies to make as much surplus water as possible available for use in dry years.
- Pursue innovative transfers and banking programs to secure more replacement water for use in dry years.
- Increase public awareness about water supply issues

The WSDM Plan guides the operations of water resources (local resources, Colorado River, SWP, and regional storage) to ensure regional reliability. It identifies the expected sequence of resource management actions MWD will take during surpluses and shortages of water to minimize the probability of severe shortages that require curtailment of full service demands. Mandatory allocations are avoided to the extent practicable; however, in the event of an extreme shortage an allocation plan will be adopted in accordance with the principles of the WSDM Plan. The SDM Plan describes MWD's ability to meet demand during a Surplus, Shortage, Severe Shortage, and Extreme Shortage. Within the WSDM Plan, these terms have specific meaning relating to MWD's capability to deliver water to the City, as follows:

Surplus: MWD can meet full-service and interruptible program demands, and it can deliver water to local and regional storage.

Shortage: MWD can meet full-service demands and partially meet or fully meet interruptible demands, using stored water or water transfers as necessary.

Severe Shortage: MWD can meet full-service demands only by using stored water, transfers, and possibly calling for extraordinary conservation. In a Severe Shortage, MWD may have to curtail Interim Agricultural Water Program (IAWP) deliveries in accordance with IAWP.

Extreme Shortage: MWD must allocate available supply to full-service customers.

The WSDM Plan also defines five "surplus" management stages and seven "shortage" management stages to guide resource management activities. Each year, MWD will consider the level of supplies available and the existing levels of water in storage to determine the appropriate management stage for that year. Each stage is associated with specific resource management actions designed to: 1) avoid an Extreme Shortage to the maximum extent possible; and 2) minimize adverse impacts to retail customers should an Extreme Shortage occur. The sequencing outlined in the WSDM Plan reflects anticipated responses based on detailed modeling of MWD's existing and expected resource mix. This sequencing may change as the resource mix evolves.

Due to the recent droughts and reduced deliveries from the SWP, MWD updated its plans for addressing water shortage conditions. This update resulted in the Water Supply Allocation Plan, which acts as an extension of the WSDM Plan, and includes specific formula for allocating available supplies among MWD member agencies. Table 5.8-1 summarizes the surplus and shortage actions to be taken by MWD as defined in the WSDM Plan. As shown, water shortage Stage 7 is where the Water Supply Allocation Plan is implemented. MWD declared Stage 7 several times during the recent droughts, resulting in reduced deliveries to all MWD member agencies.

Table 5.8-1 – MWD Resource Conditions and Action Stages

Resource Stage	Action to be Taken
Surplus 5	Make cyclic deliveries
Surplus 4	Fill Central Valley Groundwater Basins
Surplus 3	Store Supplies in SWP Carryover
Surplus 2	Fill Conjunctive Use Basins
Surplus 1	Fill DWR and Diamond Valley Reservoir
Supplies = Demands	Conduct Public Affairs Program (Conservation)
Shortage 1	Utilize Diamond Valley Reservoir for Additional Supplies to MWD System
Shortage 2	Utilize Central Valley Groundwater Storage to Supplement Supplies
Shortage 3	Interrupt Long-term Seasonal and Replenishment Deliveries
Shortage 4	Take from Conjunctive Use and DWR Storage to Supplement Supplies
Shortage 5	Call for Extraordinary Conservation/Reduce Interim Agricultural Water Program (IAWP) Deliveries
Shortage 6	Call Options Contracts/Buy Spot Water
Shortage 7	Implement Water Supply Allocation Plan

5.8.3 MWD and IEUA Catastrophic Supply Interruption Plans

To safeguard the region from a catastrophic loss of water supply, MWD and its member agencies have made and are continuing to make substantial investments in emergency storage, distribution system reliability upgrades, and interconnections with adjacent water purveyors. MWD's emergency plan assumes that demands are reduced 25 percent from the 2020 baseline demand forecast through extraordinary conservation, while the local supplies are largely undisrupted. With few exceptions, MWD asserts it can deliver emergency supply from its Diamond Valley Lake Reservoir throughout its service area via gravity, thereby eliminating dependence on power sources that could also be disrupted by a major earthquake. MWD's WSDM Plan will guide management of available supplies and resources during an emergency.

In September, IEUA adopted federal emergency response procedures called NIMS (National Incident Management System) which can be implemented by IEUA personnel for a localized event or on a broader based regional event such as an earthquake or flood. The system provides a consistent nationwide template to enable federal, state, and local governments, as well as local private sector and non-governmental organizations, to work together effectively and efficiently to prepare for, prevent, respond to, and recover from domestic incidents, regardless of the cause, size or complexity, including acts of terrorism. Complementary to NIMS, IEUA has completed Mutual Aid Agreements between itself and its local retail agencies, including the City.

5.9 City of Chino Dry Year Reliability Analysis

The City's Year 2015 water demand was approximately 21,427 AF (domestic and non-domestic). By Year 2040, the City's water demand is projected to be 27,196 AF. This represents a slight decrease in projected future demands from the 2010 UWMP for the planning horizon. Implementation of water use restrictions as a result of the Water Conservation Act of 2009, as well as the Governor's proclamations of 2014 and 2015, may have influenced permanent water usage habits that should reduce per-capita water demand.

The available supplies and water demands for the City's water service area were analyzed to assess the City's ability to satisfy demands during three hydrologic scenarios: a normal water year, single dry water year, and multiple-dry years. The tables in this section present the supply-demand balance for each of the hydrologic scenarios for the 20-year planning period (2020 to 2040). It is expected that the City will be able to meet 100 percent of its dry year demand under every scenario.

A projected supply and demand comparison during normal year scenarios is shown in Table 5.9-1 for the years 2020 through 2040. The projected supply exceeds demand for all projected years. Table 5.9-1 shows the combined potable and recycled water demand compared to the combined potable and recycled water supply.

Table 5.9-1 Normal Year Supply and Demand Comparison

	2020	2025	2030	2035	2040
Supply Totals	31,565	29,901	29,584	29,600	29,615
Demand Totals	23,053	22,823	23,869	24,771	27,196
Difference (surplus)	8,512	7,078	5,715	4,829	2,419

Source: City of Chino 2015 UWMP, Table 7-2.

During the current dry year period (2012 through 2015), the City's demands were significantly reduced due to the effectiveness of city-wide water conservation measures and programs. Therefore, for the purposes of the 2015 UWMP, it was conservatively assumed that demands during normal years are equal to demands during dry years, discounting the demonstrated effectiveness of city-wide water conservation programs. A projected supply and demand comparison during single-dry year scenarios is shown in Table 5.9-2 for the years 2020 through 2040. The projected supplies exceed demands for all years.

Table 5.9-2 Single-Dry Year Supply and Demand Comparison

	2020	2025	2030	2035	2040
Supply Totals	31,565	29,901	29,584	29,600	29,615
Demand Totals	23,053	22,823	23,869	24,771	27,196
Difference (surplus)	8,512	7,078	5,715	4,829	2,419

Source: City of Chino 2015 UWMP, Table 7-3.

The City's primary source of water supply is groundwater produced from the Chino Basin. The Chino Basin is adjudicated and managed by the Watermaster to maintain groundwater levels. The City has been able to produce groundwater from the Chino Basin, even during periods of

drought. With continued management of the Chino Basin to maintain groundwater elevations, the Chino Basin is considered to be a reliable future source of supply and may be used to offset any potential future reductions of WFA supply. A projected supply and demand comparison during multiple-dry year scenarios is shown in Table 5.9-3 for the years 2020 through 2040. The projected supplies exceed demands for all years through 2040.

Table 5.9-3 Multiple-Dry Year Supply and Demand Comparison

		2020	2025	2030	2035	2040
First Year	Supply Totals	31,565	29,901	29,584	29,600	29,615
	Demand Totals	23,053	22,823	23,869	24,771	27,196
	Difference (surplus)	8,512	7,078	5,715	4,829	2,419
Second Year	Supply Totals	31,232	29,838	29,587	29,603	29,615
	Demand Totals	23,007	23,032	24,049	25,256	27,196
	Difference (surplus)	8,225	6,806	5,538	4,347	2,419
Third Year	Supply Totals	30,899	29,774	29,590	29,606	29,615
	Demand Totals	22,961	23,241	24,229	25,741	27,196
	Difference (surplus)	7,938	6,533	5,361	3,865	2,419

Source: City of Chino 2015 UWMP, Table 7-4.

6.0 CONCLUSION

The City of Chino optimizes its water resource supply through an integrated resource approach, utilizing available water programs and projects. The City receives its water supplies from groundwater, desalted water, imported water, and recycled water. Complexities and continuing refinement in groundwater management and rights, evolving development of the regional recycled water system and supplies, desalter expansion and optimization projects, and challenges of imported water reliability are continually evaluated for analysis of water demand and supply.

A CEQA report is being prepared for the Majestic Chino Heritage project, which includes an assessment of utility services and includes this Water Supply Assessment (WSA) pursuant to Senate Bill 610. The WSA will also be used by the City of Chino as part of its ongoing planning efforts to optimize its water resource program.

The WSA includes a discussion of the Senate Bill 610 legislation, an overview of the proposed Project, and analysis of water demands for the City's existing service area and the Project and other City development projects over the UWMP planning horizon. The WSA also includes an analysis of reliability of the City's water supplies and water quality, and concludes with a sufficiency analysis of water supply during normal, single-dry, and multiple dry years for the next 20-plus years.

The MCH site is on 96.94 acres located within Subarea 1 adjacent to the El Prado Golf Course, generally bounded on the east by El Prado Channel on the south side by El Prado Golf Course, on the west side by Mountain Avenue, and on the north by Bickmore Avenue. The site is currently vacant. The proposed Project includes approximately 2,082,750 square feet of proposed distribution center operations classified as Light Industrial.

Source of Water

In Year 2015 the City purchased and produced 13,433 AF of domestic water from City wells (44%), CDA (37%), and WFA (19%). The City also provided 7,993 AF of recycled water (purchased from IEUA) to industrial, landscape irrigation and agricultural customers.

Water Demand and Supply Projections

The City of Chino will meet its future water demands, including the demands for the Project, from existing supply sources as well as sources that are currently being planned, developed and implemented. Future sources include an expanded service area for recycled water and water conservation. Supplies of imported water and CDA water are expected to remain relatively stable throughout the forecast period. Continued water use reduction and stabilized local well production are anticipated to provide for the balance of needed supplies.

The Project is estimated to increase demand on the City's potable water system by 120 AFY, and increase demand on the City's recycled water system by 36 AFY. Groundwater rights of up to 2.0 AFY per acre of land converted to urban use will be made available by the City for the Project. Although the City is eligible for a maximum of 2.0 AFY per acre of land converted, the Watermaster will determine the amount of rights that is made available to the City.

Analysis of water demand and supply projections for the City, including the Project, demonstrates that estimates of projected supplies are sufficient to satisfy City demand through Year 2040 under the current Chino Groundwater Basin Safe Yield of 140,000 AFY. The

capacity of the Chino Groundwater Basin, managed in accordance with the Watermaster-guided optimization programs, may be used to buffer episodes of drought and help address impacts that may result from a reduction of the Basin Safe Yield. The projections assume recycled water availability equals demand and is the greater of current recorded recycled water use (Year 2015) and recycled water available during dry years, as outlined in the 2015 UWMP. The analysis relies on groundwater supplies to match the projected needs during multiple dry years. Recycled water is proposed to be used to supply new development and certain existing uses, such as landscape irrigation and industrial uses currently supplied with potable water.

Analysis of water supply projections for the City, including the Project, demonstrates that estimates of anticipated projected supply entitlements are sufficient to satisfy City demand through the Year 2040 during normal and dry years. In the possible event the Basin yield is reduced, City has the opportunity to pursue measures to increase supplies of potable water by utilizing a combination of measures, as follows:

1. Production of groundwater based on Safe Yield limitations and replenishment;
2. Increasing imported water purchases, if available and if there is available WFA capacity;
3. Purchasing additional desalted water if more is produced than needed to satisfy requirements of other purchasers; and
4. Purchasing additional recycled water, if available.

Collectively, these additional options will enable water supply to satisfy water demand for the City of Chino now and into the future, subject to the impact of any Basin Safe Yield re-determination.

The information included in this Water Supply Assessment is based on the City of Chino 2015 UWMP, which describes a program of water supply options within the City's diversified water supply portfolio that will satisfy the City's anticipated future water demands, including the Majestic Chino Heritage project.

7.0 REFERENCES

1. City of Chino, *City of Chino 2015 Urban Water Management Plan (Final Draft), September* 2016.
2. Inland Empire Utilities Agency & Water Facilities Authority, *Urban Water Management Plan 2015*, June, 2016.
3. City of Chino, *City of Chino Water System Master Plan Update*, March 2004.
4. Department of Water Resources (DWR), *State Water Project Delivery Capability Report*, 2017.
5. City of Chino, *Water Supply Assessment for Chino Parcel Delivery draft,* December 2018.