California Senate Bill 610

Water Supply Assessment
for
Majestic Chino Flight

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

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January 31, 2023

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City of Chino
Water Supply Assessment
Majestic Chino Flight 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
GRP	Groundwater Recharge Program
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
LSLS	Local Storage Limitation Solution
MAF	Million Acre Feet
Max	Maximum
MCF	Majestic Chino Flight

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
RPZ	Runway Protection Zone
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
WUCA	Water Utility Climate Alliance

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 Flight (MCF or Project). The CEQA report 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 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 the 20-plus year planning period.

Majestic Chino Flight

The MCF site is located adjacent to the Chino Airport on its east side bounded on the west by Flight Avenue and on the north by Remington Avenue. The 56.95-acre site is within the City of Chino and the Industrial sector of The Preserve specific Plan (formerly Subarea 2). Some of the original (historic) uses of the region still consist of agricultural and dairy operations. The proposed Project includes irrigated and non-irrigated open space, and parking/roadway for 925,362 square feet of warehouse/logistics building space ('Light Industrial' land use designation).

Water Supply

As described in the City's 2020 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). The Eastside Water Treatment Facility was constructed and currently undergoing an expansion to utilize groundwater production capacity that does not meet potable water quality standards, as well as allow for recent construction of additional wells to maximize the use of local groundwater supplies.
- 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 and Chino II Desalters. Recent expansion of the CDA treatment facilities has increased The City's CDA allocation to 5,000 AFY.
- Recycled water is supplied to the City by IEUA through the Regional Recycled Water Distribution System. In Year 2020, the City provided approximately 4,828 AF of recycled water to industrial, landscape irrigation, and agricultural customers. The City's recycled water infrastructure has expanded to other areas of the City with the expansion of the IEUA's regional recycled water distribution system. While the City of Chino will continue exploring uses of recycled water to make up for conversion of agricultural land to urban uses, overall recycled water demands are expected to remain stable or slightly decrease in the future.

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 1978 Judgment, the Safe Yield of Chino Basin was established at 140,000 acre feet per year, and required the Chino Basin Watermaster to conduct a redetermination of the Safe Yield of 140,000 acre feet after the first ten (10) years of operation of the physical solution. That redetermination was ultimately completed in 2020, and adjusted the Basin Safe Yield (BSY) to 131,000 AFY.

Water Demand

The City's total water demand in Year 2020 was approximately 20,101 acre-feet per year (AFY). The MCF water demand was accounted for in the future demand estimate of the 2020 UWMP, and is estimated to be a total of 66,728 gallons per day or 74.8 AFY (54.5 AFY for indoor water use and 20.2 AFY for outdoor irrigation) for site uses. This represents an increase in demand on the City's potable (domestic) water system by 54.5 AFY. The Project will use recycled water for all outdoor landscape irrigation. Combined with the rest of the former Subarea 1, The Preserve Specific Plan (formerly Subarea 2) and College Park that were also used in the UWMP projections, the City's total water demand is anticipated to increase to 25,108 AFY by 2045.

Demand and Supply Projections

Development of the proposed MCF project is expected to begin in 2023. 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.

Agricultural use conversion to urban uses of the Majestic Chino Flight groundwater rights of up to 2.0 AFY per acre may be made available 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 (five years pursuant to CWC 10635) also demonstrate the City's ability to supply water to meet demand until year 2045 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.

Recent drought conditions throughout California and the Colorado River Basin, coupled with environmental issues affecting deliveries of SWP water through the Sacramento-San Joaquin Delta (State Water Project Delivery Capability, 2021 DCR), have resulted in diminished imported surface water supplies to Southern California. Through new required drought risk assessment and climate change considerations, the City and MWD, the major importer of surface water to Southern California, have developed plans and programs to address drought conditions and its continuing ability to meet the water demands of the region and the City's 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

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 several times, with the 2021 Delivery Capability Report finalized in September 2022 being the most current. The updated report projects deliveries of SWP imported water to have a 70 percent likelihood that more than 2,000 TAF of Table A water will be delivered annually. This compares to 72 percent likelihood established for the previous (2019) DCR.

Conclusion

The information included in this Water Supply Assessment is based on the City of Chino 2020 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 Flight project.

1.0 INTRODUCTION

A California Environmental Quality Act (CEQA) report is being prepared for the Majestic Chino Flight project (Project or MCF). The CEQA report 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 of Chino 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 Majestic Chino Flight project is shown in **Figure 1**.

The Project site is located adjacent to the Chino Airport on the south side of Remington Avenue between Flight and Hellman Avenues. The 56.95-acre site is within the industrial sector of The Preserve formerly designated by the City as Subarea 2. The Project site vicinity is shown in **Figure 2**. The proposed Project includes 925,362 square feet of distribution center operations (warehouse, logistics).

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 Flight
Regional Vicinity

Figure 1

Figure 2
Site Vicinity

2.0 LEGISLATION

Due to the potential impact by the Majestic Chino Flight 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 925,362 square feet of light industrial building space on 56.95 acres. As the Project occupies more than 40 acres of land and exceeds 650,000 square feet of floor area (threshold pursuant to SB 610), 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) required 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 required 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 was to comply with the requirements. It specifically identified 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. Executive Order B-29-15 was issued by the Governor in April 2015 which essentially increased 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 facilitated 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 Flight

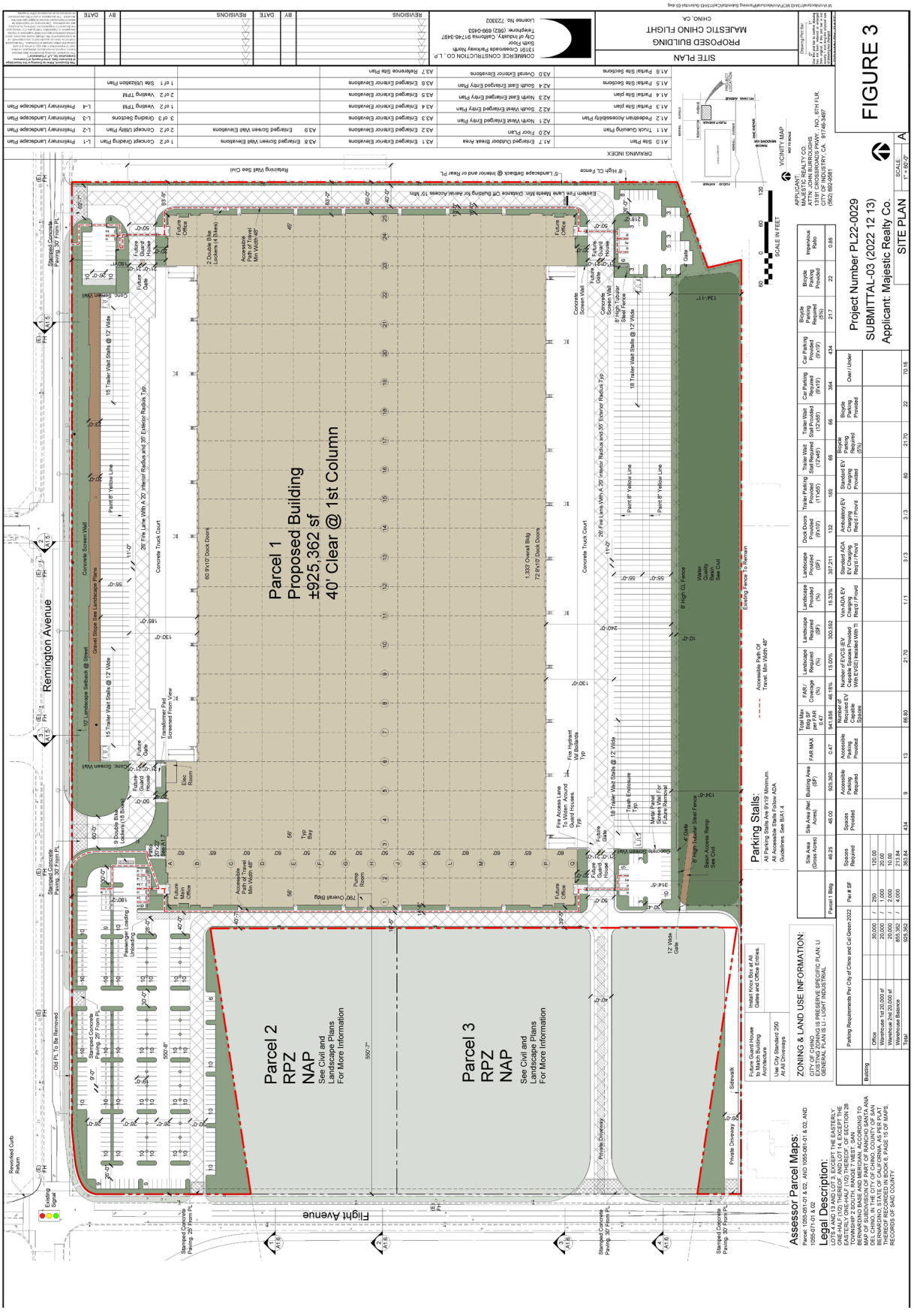
3.1 Project Description

The proposed Majestic Chino Flight project (MCF) is 56.95 acres located at the southeast corner of Flight Avenue and Remington Avenue proposed as a distribution center (Light Industrial) with warehouse type uses and proposed building floor area totaling approximately 925,000 square feet in the southern area of the City of Chino, California. It is located in the Industrial sector of The Preserve (formerly designated Subarea 2) adjacent to the Chino Airport's east boundary. The Project is scheduled to begin construction in 2023. The Project area and building square-footage are outlined in Table 3.1-1, and the site plan is shown in **Figure 3**.

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

Table 3.1-1 Project Land Use Summary

Parcel	Land Use	Area (acres)	Building Area (SF)
1	Distribution, Light Industrial, irrigation	46.00	925,362
2	Landscape (RPZ)	3.74	-
3	Landscape (RPZ)	7.21	-
	Driveway		-
Total	-	**56.95**	**925,362**


Parcel 1
Proposed Building
±925,362 sf
40' Clear @ 1st Column
Parcel 2
RPZ
NAP
See Civil and
Landscape Plans
For More Information
Parcel 3
RPZ
NAP
See Civil and
Landscape Plans
For More Information
Remington Avenue
Flight Avenue
Parking Stalls:
Assessor Parcel Maps:
Legal Description:
ZONING & LAND USE INFORMATION:
SITE PLAN
MAJESTIC CHINO FLIGHT
PROPOSED BUILDING
CHINO, CA
VICINITY MAP
SCALE IN FEET
DRAWING INDEX
FIGURE 3
Project Number PL22-0029
SUBMITTAL-03 (2022 12 13)
Applicant: Majestic Realty Co.

3.2 Majestic Chino Flight Water Demands

Table 3.2-1 calculates the water demands pursuant to City-accepted water usage factors and differentiates between indoor and outdoor consumption to identify the demands that could be served from the City's non-potable water sources.

Table 3.2-1 Majestic Chino Flight Water Demand Estimate

Parcel	Land Use	Developed Square-Footage [1]	Associated Project Site Acreage	Indoor Water Demand Factor [3]	Outdoor Water Demand Factor [3]	Indoor Water Demand		Outdoor Water Demand [6]	
1	Warehouse building (light industrial)	1,696,662 [2]	38.95	1,250 gpd/ac	-	48,688 gpd	54.5 AFY	-	-
	Landscape/ WQMP basin (irrigated)	211,410 [4]	4.85	-	2,500 gpd/ac	-	-	12,133 gpd	13.6 AFY
	WQMP Basin (non-irrigated)	95,801	2.20	-	0 gpd/ac	-	-	-	-
	Parcel 1 SubTotal	**2,003,873**	**46.00**			**48,688 gpd**	**54.5 AFY**	**12,133 gpd**	**13.6 AFY**
2	RPZ (irrigated)	32,392 [5]	0.74	-	2,500 gpd/ac	-	-	1,859 gpd	2.1 AFY
	RPZ (non-irrigated)	130,522 [5]	3.00	-	0 gpd/ac	-	-	-	-
	Parcel 2 SubTotal	**162,914**	**3.74**			**0 gpd**	**0.0 AFY**	**1,859 gpd**	**2.1 AFY**
3	RPZ (irrigated)	70,521 [5]	1.62	-	2,500 gpd/ac	-	-	4,047 gpd	4.5 AFY
	RPZ (non-irrigated)	219,187 [5]	5.03	-	0 gpd/ac	-	-	-	-
	Driveway	24,360	0.56	-	0 gpd/ac	-		-	-
	Parcel 3 SubTotal	**314,068**	**7.21**			**0 gpd**	**0.0 AFY**	**4,047 gpd**	**4.5 AFY**
	Total		**56.95**			**48,688 gpd**	**54.5 AFY**	**18,040 gpd**	**20.2 AFY**
							74.8 AFY		

[1] Based on Project site plan dated Nov 30, 2022.
[2] Includes 925,362 sf of Warehouse building plus 771,300 sf of total paving.
[3] Based on usage factors discussed with City staff and adopted by staff for Majestic Chino Flight WSA (e-mail from Felicia Marshall to John Burroughs dated October 18, 2022).
[4] Includes 167,922 sf landscape irrigation plus 43,488 sf of irrigated WQMP basin (1/17/23 e-mail from Brett French to John Burroughs), for total of 211,410 sf of irrigated area.
[5] Per e-mail from Brett French 1/31/23.
[6] Represents candidate uses for recycled water.

Total average MCF water demand is estimated at approximately 48,688 gpd plus 18,040 gpd, or 66,728 gpd (46.4 gpm, 74.8 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 48,688 gpd (54.5 AFY), and the outdoor irrigation demands would represent 18,040 gpd (20.2 AFY) increased water demands on the City's recycled water system. Although the site does not demand water under current conditions, the site historically may have used private on-site groundwater wells to support dairy operations. MCF project construction is planned for 2023.

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 SUPPLY

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 and distribution system is shown in **Figure 4**.

4.1 Overview of Supply and Demand

In Year 2020 the City purchased and produced 15,273 AF of domestic water from the city wells (34%), CDA (29%), WFA (33%), and City of Ontario (4%). The City also provided 4,828 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 seven reservoirs with a combined storage capacity of 22.9 million gallons, 16 groundwater wells including six active (Table 4.2-2), one imported water connection to the Water Facilities Authority (WFA) Agua de Lejos Water Treatment Plant, State Street storage facility, Benson Treatment Facility, newly-expanded Eastside Water Treatment Facility, two booster pump stations (Phillips and Benson), two CDA water connections, emergency connections with adjacent water purveyors, potable water pipelines, and recycled water pipelines.

4.1.1 Growth Rate

The City's 2020 UWMP includes an analysis of the City's anticipated growth rate. The 2020 service area population was approximately 80,808. The population is expected to increase to over 117,422 by 2045. Table 4.1-1 shows the projected service area population for the City. The increase population projected by the 2020 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).

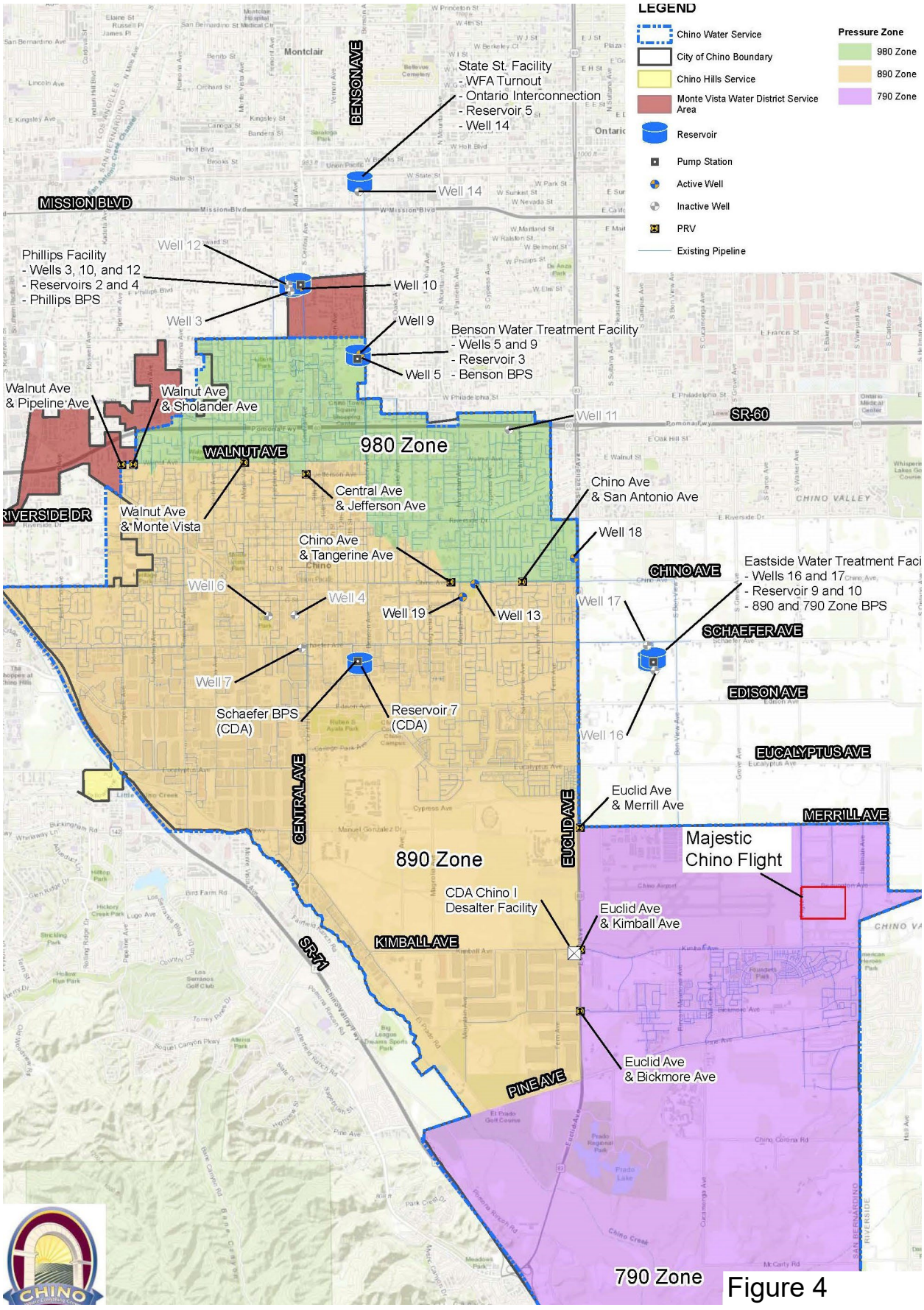

LEGEND
Chino Water Service
City of Chino Boundary
Chino Hills Service
Monte Vista Water District Service Area
Reservoir
Pump Station
Active Well
Inactive Well
PRV
Existing Pipeline
Pressure Zone
980 Zone
890 Zone
790 Zone
State St. Facility
- WFA Turnout
- Ontario Interconnection
- Reservoir 5
- Well 14
Well 14
Phillips Facility
- Wells 3, 10, and 12
- Reservoirs 2 and 4
- Phillips BPS
Well 12
Well 10
Well 3
Well 9
Well 5
Benson Water Treatment Facility
- Wells 5 and 9
- Reservoir 3
- Benson BPS
Walnut Ave & Pipeline Ave
Walnut Ave & Sholander Ave
Walnut Ave & Monte Vista
Central Ave & Jefferson Ave
Chino Ave & San Antonio Ave
Chino Ave & Tangerine Ave
Well 11
Well 18
Well 6
Well 4
Well 19
Well 13
Well 17
Eastside Water Treatment Faci
- Wells 16 and 17
- Reservoir 9 and 10
- 890 and 790 Zone BPS
Well 7
Schaefer BPS (CDA)
Reservoir 7 (CDA)
Well 16
Euclid Ave & Merrill Ave
Majestic Chino Flight
CDA Chino I Desalter Facility
Euclid Ave & Kimball Ave
Euclid Ave & Bickmore Ave
980 Zone
890 Zone
790 Zone
MISSION BLVD
WALNUT AVE
RIVERSIDE DR
CHINO AVE
SCHAEFER AVE
EDISON AVE
EUCALYPTUS AVE
MERRILL AVE
KIMBALL AVE
PINE AVE
CENTRAL AVE
EUCLID AVE
BENSON AVE
SR-60
SR-71
Montclair
Ontario
CHINO VALLEY

Figure 4

Table 4.1-1 City of Chino Service Area Population

Year	2020	2025	2030	2035	2040	2045
City of Chino Water Service Area Population	80,808	90,187	98,035	105,056	111,067	117,422

Source: City of Chino 2020 UWMP

4.1.2 Water Demand

The City's total water demand (including recycled water) in Year 2020 was approximately 20,101 acre-feet per year. The Project water demand was accounted for in the future demand estimate of the 2020 UWMP, and is estimated to be a total of 66,728 gallons per day or 74.8 AFY (54.5 AFY for indoor water use and 20.2 AFY for outdoor irrigation) for proposed site uses. The Project may 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 included in the UWMP projections, the City's total water demand (including recycled water) is anticipated to increase to 25,108 AFY by 2045.

4.1.3 Demand and Supply Comparison

The City's water supply sources consist of treated imported water purchased from WFA, water purchased from CDA, water purchased from the City of Ontario through an emergency interconnection, groundwater from the Chino Basin, and recycled water, and will continue to be available to supply the City during normal years, single dry years, and five consecutive year droughts.

The order of use of the City's projected reliable water supplies to Year 2045 in five-year increments is based on historical practices, water supply availability, and the cost of water. It is anticipated the City will continue to use groundwater produced from the Chino Basin through management and the CDA as top priority. At the same time, the City will continue to use recycled water for non-potable demands. Although the Chino Basin is adjudicated, there is no limit to the amount of groundwater which can be produced annually subject to replenishment requirements. Consequently, in the event purchased water and/or treated imported water may be limited, the City has the flexibility to increase groundwater production from the Chino Basin.

The City's projected quantities of treated imported water supplies and/or purchased water supplies are based on historical long-term averages and available supplies during previous dry year conditions. The City's projected quantities of recycled water supplies to meet non-potable demands are based on historical long-term averages.

Table 4.1-2 shows the demand and supply data for Year 2020 and projected water demand and supply for the City of Chino, including additional demand the Project will require through 2045. This represents a 20-year minimum planning period as required by Senate Bill 610.

By matching demand and supply the City is projecting at least as much water supply capacity rights as projected future demands 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 131,000 AFY.

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

	(AFY)	Projected (AFY)				
	2020	2025	2030	2035	2040	2045
DEMAND [1]						
Potable	15,273	16,343	17,810	19,087	20,164	21,308
Recycled	4,828	4,500	4,500	4,000	3,800	3,800
TOTAL WATER DEMAND	**20,101**	**20,843**	**22,310**	**23,087**	**23,964**	**25,108**
SUPPLY [2]						
Local - Groundwater Production Rights (AFY)	5,149	5,990	7,457	8,734	9,811	10,955
Local - Desalter Water	4,368	5,000	5,000	5,000	5,000	5,000
Import WFA/ IEUA/ Ontario	5,756	5,353	5,353	5,353	5,353	5,353
Total Potable Supply	15,273	16,353	17,810	19,087	20,164	21,308
Total Recycled Supply	4,828	4,500	4,500	4,000	3,800	3,800
TOTAL WATER SUPPLY	**20,101**	**20,843**	**22,310**	**29,584**	**23,964**	**25,108**
POTABLE WATER SUPPLY SURPLUS	-	-	-	-	-	-

[1] City of Chino 2020 UWMP, Table 4-3.
[2] City of Chino 2020 UWMP, Tables 6-8 and 6-9.

The analysis shows that groundwater supplies will increase to meet future demand while 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 (Section 4.2.19), 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 City's 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 2020/21 based on the Basin Safe Yield of 131,000 AFY.

Table 4.2-1 Total Groundwater Production Right
(Basin Safe Yield = 131,000 AFY)

	Production Year 2020/21
Early Transfer	1,515 AF [1]
Land Use Conversion	9,017 AF [1]
Safe Yield Reduction	(662) AF [1]
Sub-Total	**9,870** AF
Assigned Water Rights	3,670 AF [2]
Carry Over from previous year	3,298 AF [3]
Prior Year Adjustment	0 AF [3]
Sub-Total	**6,968** AF
Total Production Right	**16,838** AF

Source: Chino Basin Watermaster, Final 2020/21 Assessment Package (44th Annual Report)
[1] Agricultural Pool Reallocation Summary, p. N-18
[2] Disposition of Original Rights, p. E-2
[3] Water Production Summary, p. 10A

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. Based on the Judgment, the Safe Yield of the Chino Basin was originally established at 140,000 AFY. However, the court ordered Watermaster to re-evaluate the Safe Yield, which has been finalized at 131,000 AFY, as discussed in Section 4.2.21. Basin 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 original share of the Operating Safe Yield is 7.357 percent or 5,794 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, Section 4.2.19). The State of the Basin Report also states that the Judgment allowed 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 enhanced recharge basins have helped "drought-proof" the Chino Basin by capturing storm water and providing for greater ability to store imported water in the Chino Basin.

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 up to 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, which is discussed in Section 4.2.19.

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 2020-21 Production Year Assessment Package, the City's total stored water reserves (including Excess Carryover) were approximately 123,539 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 the south City areas formerly known as Subareas 1 and 2, including The Preserve, Rancho Miramonte (formerly Mill Creek), SRG Chino South Industrial Park, Watson Industrial Park, Majestic Chino Gateway, and Majestic Chino Heritage, as well as College Park to the north. The Majestic Chino Flight project includes 56.95 acres of development with 46 acres eligible for conversion to urban use. Therefore, the potential eligible land use conversion associated with MCF represents an estimated total of up to 92 AFY of water rights at buildout. The Preserve Specific Plan includes 2,652 acres of development; therefore, the 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 conversion of 162 AF. Other recent development projects eligible for conversion include Watson Land Company's Watson Industrial Park located east of the Chino Airport; and Majestic Chino Gateway project.

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 2020/21, the City received an Early Transfer share of 1,515 AF and a Land Use Conversion amount of 9,017 AF. At the conclusion of production year 2020/21, the City's net Agricultural Pool Reallocation was 9,870 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 implemented 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 1978 Judgment, the Safe Yield of Chino Basin was established at 140,000 acre feet per year, and required the Chino Basin Watermaster to conduct a redetermination of the Safe Yield of 140,000 acre feet after the first ten (10) years of operation of the physical solution. That redetermination was ultimately completed in 2020, and adjusted the Basin Safe Yield (BSY) to 131,000 AFY. The BSY is defined in the Chino Basin Judgment as "the long-term average annual quantity of groundwater (excluding replenishment of stored water but including return flow to the Basin from use of replenishment or stored water) which can be produced from the Chino Basin under conditions of a particular year without causing an undesirable result". The Chino Basin Judgment's allocation of the Safe Yield includes three separate Pools: (1) the "Overlying Agricultural Pool"; (2) the "Overlying Non-Agricultural Pool"; and (3) the "Appropriative Pool".

Appropriators who are Parties to the Chino Basin Judgment, are authorized to produce groundwater in excess of their rights. Appropriators replenish production in-excess of their production rights, and/or pay assessments for such production (in excess of production rights) to the Chino Basin Watermaster. The assessments are used to purchase water to replenish the Chino Basin. The Chino Basin Watermaster purchases water from Metropolitan Water District of Southern California through Inland Empire Utilities Agency and Three Valleys Municipal Water District, on behalf of the Parties, to replenish the Chino Basin. Occasionally, Chino Basin Watermaster purchases accounts from Parties within the Chino Basin.

The Chino Basin Watermaster reallocates the unused portion of the Chino Basin Safe Yield from the Overlying Agricultural Pool to the Appropriative Pool members as a supplement to the Appropriative Pool share of Operating Safe Yield rights in any year. As reported in the City's 2020 UWMP, from FY 2000-01 to FY 2019-20, the annual quantity of the Agricultural Pool share available for reallocation to Appropriative Pool members ranged from 40,822 AF to 61,014 AF, with an annual average of approximately 50,457 AF. As Agricultural Pool production declines within the Chino Basin, the reallocation of water to the Appropriative Pool will increase. (Pursuant to the Judgment) the City of Chino's Appropriative Right is 5,794.25 AF, which is equivalent to a 7.357 percent share of the Operating Safe Yield.

4.2.22 City of Chino Wells

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

Table 4.2-2 City of Chino Groundwater Wells Status – gpm

Well Number	Max Well Capacity	Field Test	Operational Status
3	0	-	Inactive
4	700	-	Inactive
5	1,350	1,151	Active
6	660	-	Inactive
7	880	-	Inactive
9	2,400	2,001	Active
10	1,450	1,091	Active
11	1,660	-	Inactive
12	2,225	-	Inactive
13	1,465	1871	Active
14	1,730	-	Inactive
16	626	-	Active
17	1,500	-	Unequipped
18	1,200	1,487	Active
19	700	805	Active
33	1,000	0	Inactive
Total	**19,546**	**8,406**	

Source: Chino Water System Master Plan, Table 2-1, January 2022.

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 2045, respectively.

Table 4.2-3 Historic Groundwater Production from Chino Basin [1]

2016	2017	2018	2019	2020
5,104 AF	4,972 AF	5,162 AF	4,308 AF	5,149 AF

[1] Based on City of Chino 2020 UWMP, Table 6-1.

Table 4.2-4 25-Year Projection - Groundwater Pumping from the Chino Basin [1]

2020 (Actual)	2025	2030	2035	2040	2045
5,149 AF	5,990 AFY	7,457 AFY	8,734 AFY	9,811 AFY	10,955 AFY

[1] Based on City of Chino 2020 UWMP, Tables 6-8 and 6-9.

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). Table 4.3-1 shows historical imported water production from 2011/12 through 2019/20.

Table 4.3-1 Historic Annual Imported Water Production (AF) [1]

WFA	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Imported Water	2,698	4,025	4,302	2,800	2,762	3,391	4,179	3,929	5,062

[1] Source: Chino 2020 UWMP, Section 6.1

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 2020 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. Treated wastewater available from IEUA's four regional facilities was 56,834 AF in 2020 (IEUA 2020 UWMP, Table 5-1) with 54 percent usage, or 30,495 AF, of which approximately 13,381 AF (IEUA 2020 UWMP, Table 5-2) was used for groundwater recharge. IEUA estimates availability and usage to increase to approximately 66,836 AF (IEUA 2020 UWMP, Table 4-6) and 44,691 AF, respectively, by Year 2045. 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 2020, the City provided 4,828 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 through the UWMP planning horizon is shown in Table 4.4-1.

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

	2020	2025	2030	2035	2040	2045
Total Recycled Water Use	4,828	4,500	4,500	4,000	3,800	3,800

Source: City of Chino 2020 UWMP, Tables 6-8 and 6-9.

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). CDA removes salts from brackish groundwater extracted from the lower Chino Basin through the Chino I and II desalter facilities. The treatment processes at the Desalter facilities include reverse osmosis, and ion exchange for removal of nitrates and Total Dissolved Solids. The Chino I Desalter is located in the City of Chino and commenced operation in 2001 and was expanded in 2005 to a total capacity of 14.2 million gallons per day. The Chino I Desalter includes air stripping for removal of Volatile Organic Compounds. The Chino II Desalter is located in Jurupa Valley, began operation in 2006, and was expanded in 2011 and 2017 to a total capacity of 33 MGD.

Subsequent to the expansion, CDA constructed the Concentrate Reduction Facility in 2017, which utilizes chemical softening to remove the limiting foulants (specifically calcium and silica) from the reverse osmosis concentrate. An additional three wells have been constructed for a total of 11 groundwater wells supplying the Desalter system. Additional components of the Chino II Desalter system were constructed as part of the South Archibald Plume Project which was scheduled to begin operation in 2021, with the goal of removing trichloroethylene from the groundwater wells impacted by the South Archibald Plume.

Treated water is distributed to CDA's retail water member agencies including the City of Chino as well as the Cities of Chino Hills, Norco, and Ontario, and the Jurupa Community Service District, Santa Ana River Water Company, and Wester Municipal Water District. The retail water agencies have contract entitlements to receive a total of 35,200 AFY of treated water from the CDA. A portion of the production is in-lieu of those CDA member agencies producing an equal amount of groundwater from their own groundwater wells from the Chino Basin using their individual pumping rights.

The Chino I and II Desalters managed by the CDA are 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. Additional contracts allow for delivery of an additional 10,400 AFY associated with Chino II desalter.

5.0 RELIABILITY OF WATER SUPPLIES

The City's water supply portfolio includes groundwater from the Chino Basin, desalted water served by the CDA, imported water from the WFA, and recycled water from 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. 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 City's 2020 UWMP projects that both the WFA imported water supply and the IEUA recycled water supply will be sufficient even through periods of drought. Consequently, the assessment of average supply available during single and multiple-dry (five) years is projected to meet water demands under normal and drought conditions through 2045.

5.1 Climate change

Drought conditions caused by climate change may result in decreased precipitation, decreased runoff, and increased temperatures and may adversely affect an urban water suppliers ability to meet demands by potentially impacting supplies. Drought Risk Assessment considers the potential impacts of climate change to the City's water supply sources. The City directly and/or indirectly relies on the MWD for those imported water supplies. MWD has prepared their Regional 2020 UWMP which includes a discussion of the reliability of its sources and the impacts of climate change and is incorporated by reference in the City's 2020 UWMP. The City is a sub agency of IEUA (an MWD member agency) which has prepared a separate 2020 UWMP with consistent discussion of climate change considerations:

- MWD has established the Robust Decision Making (RDM) approach to identify vulnerabilities to its water supplies. Climate change information was applied to MWD's simulated water supply scenarios to demonstrate the vulnerability of water supplies to climate change.
- MWD altered the inflow hydrology scenarios on the Colorado River simulation model to reflect modified inflow to MWD's Colorado River aqueduct.
- MWD is an active and founding member of the Water Utility Climate Alliance (WUCA) which includes 12 nationwide partners collaborating on climate change considerations. As such, MWD shares agency actions on climate change and adaptation. WUCA has also released numerous papers on climate change.
- MWD's programs include the use of solar energy, use of ride share programs, and reduction of greenhouse emissions. Collectively, these actions are intended to mitigate the effects of climate change.

The City used climate tools available on the California Energy Commission's Cal-Adapt website to identify potential future climate change cycles for the Chino Basin. The Cal-Adapt climate tools incorporate several General Circulation Models, which represent physical processes in the atmosphere, ocean, and land surface. The models projected future climates under conditions such as warm/dry, cooler/wetter, and average simulations. For the City's climate analysis, the average condition model (CanESM2) was selected.

5.2 Drought Risk Assessment

The City's Drought Risk Assessment (DRA) outlined in the 2020 UWMP is based on the following:

- Five consecutive dry years from FY 2020-21 through FY 2024-25.
- The projected water supplies available are identical to the water supplies produced during each year from 2011-12 to 2015-16 which represents the most recent five consecutive year drought.
- The projected demands are based on water demands from a normal year represented by FY2016-17 and the ratio of the normal year demands to actual demands of the most recent five consecutive year drought.
- The projected demands were compared to the projected supplies to identify potential water supply deficits.

The following circumstances were considered during the preparation of the City's DRA for each year of the five consecutive year drought:

- Drought Year 1: The region had experienced an average to above average year of precipitation in the prior year. Water use in the prior year had been below average due to a reduced need for outdoor water use; the groundwater basin had been replenished from above average stormwater runoff, and imported water supplies were not restricted.
- Drought Year 2: Region experienced a second year of below average precipitation and runoff. Retail customers increased water use for outdoor irrigation to compensate for lack of precipitation. Groundwater and imported water supplies have not been impacted.
- Drought Year 3: The region experienced a third year of below average precipitation and runoff. Groundwater and imported water supplies have not been impacted. However, there is an increased demand for groundwater and treated imported water.
- Drought Year 4: The region experienced a fourth year of below average precipitation and runoff. Groundwater supplies have not been impacted. However, there is an increased demand on groundwater.
- Drought Year 5: The region experienced a fifth year of below average precipitation and runoff. Groundwater supplies have not been impacted. However, there is an increased demand on groundwater.

5.3 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, Majestic Chino Gateway, and Majestic Chino Heritage. Majestic Chino Flight is within the industrial sector of The Preserve Specific Plan.

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, 18 and 19. 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 water.

The City is currently in the design phase of expanding the Eastside Water Treatment Facility. The project will increase the facility's maximum daily treated groundwater production from five MGD to 10 MGD. The expansion will include additional ion exchange and carbon filtration units which will be plumbed into existing reservoirs located at the facility. This expansion will help serve the southern portion of the City's service area by maximizing groundwater sources and reducing the City's reliance on imported water supplies. The City is also in the design of the State Street Water Treatment Plant which will further increase groundwater production by 5.8 MGD. This plant will serve the upper pressure zones of the City's distribution system further maximizing use of local water supplies.

5.4 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.

5.4.1 DRA Basis

Pursuant to the City's 2020 UWMP, the quantity of water supplies available for each year during the five consecutive year drought period is assumed to be the same as the quantity of water supplies produced by the City during the most recent five consecutive year drought which occurred from FY 2011-12 through FY 2015-16.

5.4.2 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.

Each year the Watermaster reviews water supply conditions including local rainfall, groundwater levels, local groundwater runoff available for replenishment, imported water availability, and the amount of groundwater stored in the groundwater basin for future demands to ensure the basin is responsibly managed. Regardless of the annual safe yield adopted, there is never a restriction in the amount of water which may be pumped from the Chino Basin subject to replenishment requirements under the Chino Basin Watermaster's oversight. During the five consecutive year drought the City was able to increase its production of groundwater supplies from an adjudicated and managed groundwater basin. The City also had the ability to systematically implement aspects of its Water Shortage Contingency Plan. As a result of these collective actions the City does not anticipate a water supply shortage from the Chino Basin.

5.4.3 Dry Year Yield Program (DYYP)

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 with maximum replenishment of 25,000 AFY and maximum extraction of 33,000 AFY. During FY 2019-20, there was 45,961 AF within the DYYP account, resulting in a total managed storage volume of 587,806 AF (541,845 AF plus 45,961). The agreement that authorized the DYYP will expire in 2028.

The storage and recovery activities of the Basin's conjunctive use 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 DYYP account.

The Inland Empire Utilities Agency's *Addendum No. 2 to the OBMP* (February 2021), was prepared to address managed storage within the Chino Basin following the termination of the DYYP. Based on the Chino Basin Watermaster's findings, the Local Storage Limitation Solution (LSLS) was developed. From July 2017 through June 2021, the Safe Storage Capacity of the Chino Basin was 600,000 AF. The LSLS proposes a change in the Safe Storage Capacity to 700,000 AF through June 2030, and to 620,000 AF from July 2030 through June 2035. Full utilization of the allowable increased storage space is expected to occur gradually as additional water is stored and less groundwater is produced. The Safe Storage Capacity of the Chino Basin is currently programmed to become 500,000 AF after June 2035 based on projections of need.

5.4.4 Land Subsidence Management Plan

The Chino Basin Subsidence Management Plan was developed in 2015 and its purpose is to:

- Minimize subsidence and fissuring;
- Collect information necessary to understand the extent, rate, and mechanisms of subsidence and fissuring; and
- Establish a management plan to reduce tolerable levels or abate future subsidence and fissuring.

From 2001 to 2005, Chino Basin Watermaster developed, coordinated, and conducted the MZ-1 Interim Monitoring Program, and the main conclusions derived were:

- Groundwater production from the deep, confined aquifer in the southwestern region of MZ-1 causes the greatest stress to the aquifer system
- Groundwater level decline due to pumping of the deep aquifer can cause irreversible compaction of the aquifer system sediments, resulting in land subsidence.

Watermaster's investigations led to the establishment of recommendations for managing groundwater production in the affected area, and continued monitoring indicates conformity to the recommendation has been effective in controlling area subsidence.

At the beginning of each calendar year, Chino Basin Watermaster staff and engineers will analyze the data generated during the prior calendar year. Results and interpretation generated from the analysis will be documented in an annual report and is used to prepare recommendations for future planning.

5.5 State Water Project (SWP)

5.5.1 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 several times, with the 2021 Delivery Capability Report finalized in September 2022 being the most current. The 2021 DCR uses the following assumptions to model current conditions: existing facilities; hydrologic inflows to the model based on historical inflows from 1922 through 2015; 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 70 percent likelihood that more than 2,000 TAF of Table A water will be delivered annually. This compares to 72 percent likelihood established for the previous (2019) DCR.

5.5.2 Imported Water Supply Constraints

The reliability of MWD's supplies is also discussed in the MWD's 2020 Regional UWMP, and is referenced in the City's 2020 UWMP. The City purchases imported water which is treated by WFA and delivered to the City's potable water system. In the event of a drought that limits imported water supplies, the City will rely on its groundwater production. Because the City's DRA assumes the most recent five consecutive year drought scenario will be repeated over the next five years, it is assumed the quantity of untreated imported water supplies purchased during that period will be available.

Additionally, MWD periodically performs maintenance on its distribution system, which could impact 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.

5.6 Recycled Water

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.

5.6.1 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. The quantity of recycled water used during the most recent five consecutive year drought is expected to be available during future five-year droughts.

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.

5.6.2 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.

5.7 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. A variety of water management strategies are implemented or planned for implementation by the City as discussed below.

5.7.1 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, 18 and 19 (currently impacted with elevated nitrate concentrations). The City is in the process of expanding the treatment capacity of the EWTF to 10 MGD.

5.7.2 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.

5.7.3 Imported Water Quality

In coordination with member agencies, MWD incorporated water quality management strategies to maintain the reliability of its supplies. Historically, MWD supplies through the SWP have been significantly less than 100 percent reliable. Percentages of Table A amounts can quickly swing in either direction, as history has shown. Water quality can also impact imported water from MWD and its supply reliability.

As part of the Dry Year Yield Program 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 Program recently 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. The City's treatment systems have recently been expanded to safeguard against the possibility of the quality of pumped water being lower than expected (primarily due to high Nitrates).

5.8 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.

5.9 Interconnections

To increase system reliability, the City maintains 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.

5.10 Water Shortage Plans

5.10.1 City of Chino's Water Shortage Contingency Plan

The City has recently updated their Water Shortage Contingency Plan in accordance with the CWC in which urban water suppliers are required to define six standard water shortage levels. Shortage response actions are dependent on the severity of a declared shortage level. Response actions implement varying improvements and regulations of system infrastructure and operations, water supply augmentation, demand reduction initiatives and other water use functions to conserve water supplies. Table 5.10-1 provides a description of the six water shortage levels which may be triggered by a shortage in one or more of the City's water supply sources:

Table 5.10-1 Water Shortage Contingency Planning Levels

Shortage Level	Percent Shortage Range	Shortage Response Actions
1	Up to 10%	Restaurants shall not use non-conserving dish spray valves. Ornamental lakes or ponds shall not be filled or refilled with potable water, except to the extent needed to sustain aquatic life. Outdoor irrigation only every other day from May 1 through September 30.
2	Up to 20%	In addition to Shortage Level 1; Outdoor irrigation of landscape with potable water will only be allowed every other day. Commercial lodging establishments shall not launder towels and linen daily, except when specifically requested by their customer.
3	Up to 30%	In addition to Shortage Level 2; Potable water service will not be provided to new land development projects. Additional restrictions may be implemented as determined by the City, after notice to customers.
4	Up to 40%	In addition to Shortage Level 3; Additional restrictions may be implemented as determined by the City, after notice to customers.
5	Up to 50%	In addition to Shortage Level 4; Additional restrictions may be implemented as determined by the City, after notice to customers.
6	>50%	In addition to Shortage Level 5; Additional restrictions may be implemented as determined by the City, after notice to customers.

Source: City of Chino 2020 UWMP, Table 8-1.

In addition to the City's identified prohibited activities that define water waste, the following additional restrictions are implemented during times of declared water shortage levels, or declared water shortage emergencies:

- Cease irrigation of public roadway median turf landscape unless irrigated with recycled water.
- Irrigate only on Monday, Wednesday, Friday, and Saturday between the hours of 8:00 pm and 6:00 am
- No watering during rain events and for forty-eight (48) hours after rain events.
- Restaurants to provide drinking water only upon request.
- Hotels to provide notice to guests to select the option to not launder their towels and hotel linen daily.
- Any landscaping that is installed on the site of a newly constructed building, or landscaping that is a part of a development project, shall only be irrigated through the use of drip and microspray systems if potable water will be used for irrigation. This requirement shall not apply to landscapes irrigated with recycled water.

5.10.2 Risk and Resilience and Emergency Response Plans

Catastrophic water shortages are incorporated in the City's WSCP. In addition to water supply augmentation actions and potential operational changes the City may consider in order to continue providing sufficient water supplies, the City will review and implement any necessary steps included in its Emergency Response Plan (ERP).

Pursuant to America's Water Infrastructure Act (AWIA, 2018), the City updated their Risk and Resilience Assessment (RRA) and associated Emergency Response Plan, and is required to do so every five years. The City's RRA and ERP completed these documents and received their respective certifications in 2020 and 2021.

5.10.3 WSCP Refinement Procedures

The City's WSCP has been prepared as an adaptive management plan. The City will monitor and report on the implementation of the WSCP. The City will review the implementation results for any current or potential shortage gaps between water supplies and demands. The City will evaluate the need for revising the WSCP in order to resolve any shortage gaps, as necessary. The WSCP was adopted as part of the City's 2020 UWMP.

From MWD's perspective, and as wholesaler of SWP imported water, their WSCP is designed to be consistent with their Water Surplus and Drought Management Plan (WSDM) as described below, and their Water Supply Allocation Plan. As a sub-agency of the region's water wholesaler (IEUA), the City will respond to the WSDM Plan. IEUA follows 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.

5.10.4 MWD's Water Surplus and Drought Management Plan (WSDM)

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 5.10-2 – 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

5.10.5 MWD and IEUA Catastrophic Supply Interruption Plans

The CWC requires urban suppliers to plan for catastrophic interruption of water supplies due to regional power outage, earthquake and other emergency events. CWC further requires urban water suppliers to develop seismic risk assessment and mitigation plans to assess the vulnerability of each of its major water distribution facilities and mitigate those vulnerabilities. The required planning elements for MWD are captured in the analyses that went into developing its Emergency Storage Objective, Seismic Resiliency Reports, and Emergency Response Plans. These are included by reference, and detailed in the MWD's 2020 UWMP.

5.11 City of Chino Dry Year Reliability Analysis

The City's Year 2020 water demand was approximately 20,101 AF (domestic and non-domestic). By Year 2045, the City's water demand is projected to be 25,108 AF. This represents a slight decrease in projected future demands from the 2015 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 continue to influence permanent water usage habits that have reduced 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 minimum 20-year planning period. It is expected that the City will be able to meet 100 percent of its dry year demand under every scenario.

The average (or normal) year assessment is based on the demands of FY 2016-17 due to total amount of rainfall equivalent to the historical average. A projected supply and demand comparison during normal year scenarios is shown in Table 5.11-1 for the years 2025 through 2045. The projected supply can meet demand for all projected years. Table 5.11-1 shows the combined potable and recycled water demand compared to the combined potable and recycled water supply.

Table 5.11-1 Normal Year Supply and Demand Comparison

	2025	2030	2035	2040	2045
Supply Totals	20,843	22,310	23,087	23,964	25,108
Demand Totals	20,843	22,310	23,087	23,964	25,108
Difference (surplus)	-	-	-	-	-

Source: City of Chino 2020 UWMP, Table 7-2.

The 2020 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 5.11-2 for the years 2025 through 2045. The projected supplies can meet demands for all years through 2045.

Table 5.11-2 Single-Dry Year Supply and Demand Comparison

	2025	2030	2035	2040	2045
Supply Totals	21,925	23,469	24,286	25,207	26,411
Demand Totals	21,925	23,469	24,286	25,207	26,411
Difference (surplus)	-	-	-	-	-

Source: City of Chino 2020 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 5.11-3 for the years 2025 through 2045. The projected supplies can meet demands for all years through 2045.

Table 5.11-3 Multiple Dry Years Supply and Demand Comparison

		2025	2030	2035	2040	2045
First year	Supply totals	24,889	26,641	27,569	28,614	29,982
	Demand totals	24,889	26,641	27,569	28,614	29,982
	Difference	-	-	-	-	-
Second year	Supply totals	26,190	28,034	29,010	30,110	31,549
	Demand totals	26,190	28,034	29,010	30,110	31,549
	Difference	-	-	-	-	-
Third year	Supply totals	26,135	27,975	28,949	30,046	31,482
	Demand totals	26,135	27,975	28,949	30,046	31,482
	Difference	-	-	-	-	-
Fourth year	Supply totals	23,837	25,515	26,404	27,405	28,715
	Demand totals	23,837	25,515	26,404	27,405	28,715
	Difference	-	-	-	-	-
Fifth year	Supply totals	20,873	22,342	23,121	23,997	25,144
	Demand totals	20,873	22,342	23,121	23,997	25,144
	Difference	-	-	-	-	-

Source: City of Chino 2020 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 Flight project (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 MCF site is on 56.95 acres located within the industrial-zoned portion of The Preserve specific plan formerly designated as Subarea 2, generally bounded on the west Flight Avenue and the Chino Airport, and on the north by Remington Avenue. The site is currently vacant, but historically was used for dairy operations. The proposed Project includes approximately 925,362 square feet of proposed distribution center operations classified as Light Industrial.

Source of Water

In Year 2020 the City purchased and produced 15,273 AF of domestic water from City wells (34%), CDA (29%), WFA (33%) and City of Ontario (4%). The City also provided 4,828 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, expansion of the Eastside Water Treatment Facility and State Street Water Treatment Plant, and continued water conservation. Supplies of imported water and CDA water are expected to remain relatively stable throughout the forecast period. Maintaining the City's reduced per-capita water use ("20 by 2020") 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 54.5 AFY, and increase demand on the City's recycled water system by 20.2 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 2045 under the current Chino Groundwater Basin Safe Yield of 131,000 AFY. The capacity of the Chino Groundwater Basin, managed in accordance with the Watermaster-guided optimization programs, will be used to buffer episodes of drought and help address impacts that may result from a further reduction of the Basin Safe Yield. The projections assume recycled water availability equals demand. 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 2045 during normal and multiple consecutive dry years (5 years, CWC 10635). In the possible event the Basin yield is further reduced, the City has the opportunity to pursue measures to increase supplies of potable water by utilizing the following:

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 2020 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 Flight project.

7.0 REFERENCES

1. City of Chino, *City of Chino 2020 Urban Water Management Plan, June 2021*.
2. MWDSC, *Metropolitan Water District of Southern California 2020 Regional UWMP, June 2021*
3. IEUA, *Inland Empire Utilities Agency 2020 UWMP, June 2021*
4. City of Chino, *City of Chino 2015 Urban Water Management Plan (Final Draft), September 2017.*
5. City of Chino, *City of Chino Water System Master Plan Update, January 2021.*
6. Department of Water Resources (DWR), *State Water Project 2021 Delivery Capability Report*, September 2022.
7. MCH, *Water Supply Assessment for Majestic Chino Heritage, March 2019*.