Appendix K

Water Supply Assessment

Water Supply Assessment

Etiwanda Commerce Center Project

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Acronyms and Abbreviations

Acronym/Abbreviation	Definition
AF	acre-feet
AFY	acre-feet per year
CDA	Chino Desalter Authority
CBWM	Chino Basin Watermaster
CVWD	Cucamonga Valley Water District
CWC	California Water Code
DWR	California Department of Water Resources
FY	fiscal year
IEUA	Inland Empire Utilities Agency
IWRP	Integrated Water Resources Plan
MWD	Metropolitan Water District of Southern California
OBMP	Optimum Basin Management Program
Project	Etiwanda Commerce Center Project
SB	Senate Bill
SF	square feet
UWMP	Urban Water Management Plan
WSA	Water Supply Assessment

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1 Introduction

1.1 Purpose of Document

Senate Bill (SB) 610 was passed on January 1, 2002, amending the California Water Code (CWC) to require detailed analysis of water supply availability for certain types of development projects. The primary purpose of SB 610 is to improve the linkage between water and land use planning by ensuring greater communication between water providers and local planning agencies, and to ensure that land use decisions for certain large development projects are fully informed as to whether a sufficient water supply is available to meet project demands. SB 610 requires preparation of a Water Supply Assessment (WSA) for a project that is subject to the California Environmental Quality Act and meets certain requirements. SB 610 is codified in CWC Division 6, Part 2.10 (Sections 10910–10915).

The Etiwanda Commerce Center Project (Project) has been determined to be subject to the California Environmental Quality Act, with the City of Rancho Cucamonga acting as lead agency. The Project satisfies the statutory definition of a "project" for the purpose of determining SB 610 applicability because it is considered an industrial facility in excess of 650,000 square feet (SF) of floor area (CWC Section 10912(a)(5)). The lead agency will make an independent determination as to whether there is adequate water supply for the proposed Project, having considered the entire administrative record. In compliance with SB 610, this WSA examines the availability of the identified water supply during normal, single dry, and multiple dry water years over a 20-year projection, accounting for the projected water demand of the Project plus other existing and planned future uses of the identified water supply.

1.2 Project Location and Description

BTC III Etiwanda Commerce Center proposes to construct a warehouse facility for high pile storage on approximately 72.67 acres of previously developed land within the City of Rancho Cucamonga, San Bernardino County, California (Figure 1). The Project site is located at 8996 Etiwanda Avenue, Rancho Cucamonga, California and is bounded by Etiwanda Avenue on the east, the Atchison Topeka and Santa Fe Railroad on the north, and developed industrial land on the south and west (Figure 1). Access to the Project site is provided via Etiwanda Avenue. The Project site consists of Assessor's Parcel Number 0229-283-79, and portions of Assessor's Parcel Numbers 0229-283-82 and 0229-283-83 (Figure 1). The Project stie lies within the U.S. Geological Survey Guasti, California 7.5-minute topographic quadrangle and San Bernardino Meridian, Township 1 South, Range 6 West, Sections 8 and 17 of the Public Land Survey System (Figure 1).

The Project would involve construction of five warehouse buildings with a combined total area of approximately 1.21 million SF. The Project would also include auto parking, trailer parking, and landscaping (Figure 2). The following provides a breakdown of building square footage by building number:

- Building 1: 603,741 SF
- Building 2: 132,343 SF
- Building 3: 249,245 SF
- Building 4: 169,559 SF
- Building 5: 59,243 SF

1.3 Water Supply Assessment Applicability

SB 610 amended CWC Sections 10910 and 10912 to create a direct relationship between water supply and land use. SB 610 establishes the legal framework for assessing the sufficiency of water supply for new developments that qualify as a "project". Per CWC Section 10912(a), a "project" means any of the following:

- Proposed residential development of more than 500 dwelling units.
- Proposed shopping center or business establishment employing more than 1,000 persons, or having more than 500,000 square-feet of floor space.
- Proposed commercial office building employing more than 1,000 persons or having more than 250,000 square-feet of floor space.
- Proposed hotel or motel or both, having more than 500 rooms.
- Proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square-feet of floor area.
- Proposed mixed-use project that includes one or more of the above components.
- Proposed project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project.

The CWC, as amended by SB 610, requires that a WSA include a discussion of whether:

- The project will be served by a public water system (CWC Section 10910(b)).
- The project water demand is included in a current Urban Water Management Plan (UWMP) (CWC Section 10910(c)).
- There are any existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the proposed project (CWC Section 10910(d)).
- Groundwater will serve as a source of water supply for the project (CWC Section 10910(f)).

Based on the characterization of these water supplies and constraints, the WSA is required to provide a discussion of whether the 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 existing and planned future uses, including agricultural and manufacturing uses (CWC Section 10910(b)(3) and (4)).

As an industrial facility in excess of 650,000 square feet of floor area, the Project qualifies as a "project" under CWC Section 10912(a). Accordingly, the proposed Project is subject to SB 610 and requires preparation of a WSA.

1.3.1 Identification of a Public Water System

Section 10912 of the CWC defines a "public water system" as a system that has 3,000 or more service connections and provides piped water to the public for human consumption. Under SB 610, WSA reports must be prepared and furnished to local governments by the water utility serving that community for inclusion in any environmental documentation for projects meeting the specified requirements under Section 10912(a) of the CWC and subject to the California Environmental Quality Act. According to CWC Section 10910(g)(1), "the governing body of each public

water system, or the city or county if either is required to comply with this act … shall approve the assessment prepared pursuant to this section at a regular or special meeting." According to SB 610, the public water system serving the Project site is required to prepare the WSA report.

The Project is in an area not currently served by a water district (Figure 3). The two water districts adjacent to the Project site are San Gabriel Valley Water Company and Cucamonga Valley Water District (CVWD). In order for the Project to obtain water service, the Project will need to go through an annexation process to be included in one of the water district's boundaries. The Project intends to initiate and complete this process and secure a will serve letter with CVWD.

The CVWD a member agency of Inland Empire Utilities Agency (IEUA). IEUA, as a wholesale water agency, provides CVWD imported water supply from the Metropolitan Water District of Southern California (MWD). CVWD serves a 46-square-mile area and provides potable water, recycled water, and sewer services to the City of Rancho Cucamonga; portions of the Cities of Upland, Ontario, and Fontana; and some unincorporated areas of San Bernardino County. The CVWD service area is bounded by the City of Fontana to the east, the cities of Upland and Ontario to the west, the City of Ontario to the south, and the San Gabriel Mountains to the north (Figure 3). The CVWD serves a population of 198,979 people, which includes approximately 48,000 water connections and 37,000 sewer connections with an average daily demand of approximately 47 million gallons per day (CVWD 2021).

1.3.2 Urban Water Management Plan Coverage

Urban Water Management Plans (UWMPs) are prepared by California's urban water suppliers to support long-term resource planning and ensure adequate water supplies. UWMPs must be updated and submitted to the California Department of Water Resources (DWR) every 5 years for review and approval. DWR has identified the UWMP as a foundational document in the preparation of a WSA, noting that a thorough UWMP can provide the required information to fulfill the standards set forth by SB 610. Every urban water supplier that either delivers more than 3,000 acre-feet per year (AFY) of water annually or serves more than 3,000 connections is required to assess the reliability of its water sources over a 20-year period during normal, single dry, and multiple dry water years; these are the same requirements of a WSA as specified by SB 610. A WSA may also rely on additional water supply data beyond the information in the UWMP.

The Project site is within the area covered by MWD's 2020 UWMP and Integrated Water Resources Plan (IWRP) 2015 Update (MWD 2016). Descriptions of these plans, as well as other applicable water resources plans, including CVWD's 2020 UWMP, are provided in Section 5, Management Plans and Programs, of this WSA. This WSA uses information provided in the aforementioned plans, where applicable, to assess water supply availability.

1.3.3 Groundwater as a Component of Project Water Supply

Upon completion of the annexation process, the Project would be served by CVWD. The CVWD's main sources of water supply are groundwater pumped from the Upper Santa Ana Valley Groundwater Basin – Chino Subbasin (DWR Basin No. 8-002.01) and imported surface water (Figure 4). The Upper Santa Ana Valley Groundwater Basin – Chino Subbasin (Chino Basin) is an adjudicated basin with an order to be managed by a watermaster since 1978. The Chino Basin was reportedly adjudicated to mitigate declining water levels that were observed as early as the 1930s (SWRCB 2016). The 1978 Judgement established the following for the Chino Basin (SWRCB 2016):

- Set the initial Safe Yield of the basin to 140,000 AFY with a stipulation that the Safe Yield is recalculated every 10 years, and is defined as the long-term average annual quantity of groundwater (excluding replenishment of stored water but including return flow to the Chino Basin from use of replenishment or stored water) which can be produced from the Chino Basin under conditions of a particular yield without causing an undesirable result
- Allocated water rights for three pools of groundwater users: (1) the "Overlying Agricultural Pool," (2) the "Overlying Non-Agricultural Pool," and (3) the "Appropriative Pool"
- Allowed for water transfers
- Created a replenishment fee (pumping tax) program
- Instituted a watermaster

The Chino Basin Watermaster's (CBWM) function is to administer and enforce provisions of the *1978 Chino Basin Municipal Water District v. City of Chino* (Judgement, Case Number 164327) and subsequent orders of the Court, and to develop and implement an Optimum Basin Management Program (OBMP) for the Chino Basin. The intent of the OBMP is to enhance basin water supplies, protect water quality, and improve basin management (SWRCB 2016).

In 2012, a restated judgement incorporated all amendments since 1978 and the Peace Agreements of 2000 and 2007 that addressed transfers, subsidence, funding for groundwater exchange, basin de-salters, basin replenishment, and recharge programs. It also allowed an additional 400,000 acre-feet (AF) to be pumped as controlled overdraft for the de-salters (SWRCB 2016).

Groundwater resources are described in more detail in Section 4, Water Resources, and water supply availability is discussed in Section 6, Water Supply Assessment.

1.3.4 Sufficiency of Supplies Over the Next 20 Years

As described in Section 2, Project Water Demand, and Section 6, Water Supply Assessment, there is adequate water available to supply the proposed Project during normal, single dry, and multiple dry water years during a 20-year projection, in addition to existing and planned future uses of the identified water supply.

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2 Project Water Demand

The Project site is zoned as Industrial Employment District (City of Rancho Cucamonga 2023). The Project site was previously occupied by an electric power generating facility, known as the Etiwanda Generating Station, which ceased operating on June 28, 2018 and has since been decommissioned (Path Forward 2020). Water supply at the Project site was previously provided by two off-site groundwater production wells, identified as East Well and Central Well, that were located south of the Project site, and an on-site production well, identified as West Well, that was located in the southern portion of the Project site and was decommissioned in 2019 (Path Forward 2020). Historical groundwater production rates/volumes are not available for the wells.

The Project water demand includes potable uses associated with the warehouse buildings and the irrigation of landscaping. The Project water demand was estimated based on a widely used average daily demand of 2,000 gallons per day per acre for industrial projects (City of Ontario 2012). By multiplying the total acreage of the warehouse buildings and irrigated landscaping by the reference average daily water demand, the Project would require an estimated 83 AFY (Table 1).

Table 1. Project Water Demand

Project Component	Square Footage	Acreage	Water Demand (gpd/acre)	Average Daily Demand (gpd)	Annual Demand (acre-feet)
Warehouse Buildings	1,214,131	27.87	2,000	55,740	62.44
Landscaping	404,248	9.28	2,000	18,560	20.79
			Total	74,300	83.23

Source: City of Ontario 2012.
Notes: gpd = gallons per day.

As stated in Section 1.3.1, the Project is in an area not currently served by a water district. To obtain water and sewer service, the Project plans to complete an annexation process with CVWD to be included in CVWD's service area boundary. The Project would then coordinate with CVWD and obtain a will serve letter to meet the Project's water demand.

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3 Climate

The Project area has a Mediterranean climate with mild winters and warm summers. Based on climate data collected from 1998 through 2020 at the Ontario International Airport weather station, the historical average annual temperature is approximately 65.2 degrees Fahrenheit and average annual precipitation is approximately 10.7 inches (CVWD 2021). Average minimum temperatures in the winter are in the mid-40s degrees Fahrenheit and average maximum temperatures in the summer are in the low- to mid-90s degrees Fahrenheit. Most precipitation falls between the months of November and March (CVWD 2021).

Projected future climate conditions in California indicate gradual warming, with a strong increase in extremely hot days relative to historical norms, and greater year-to-year precipitation variability. Warming of 2 to 7 degrees Celsius (approximately 3.6 to 12.6 degrees Fahrenheit) is expected by the end of the century (Pierce et al. 2018). Additionally, there will be fewer wet days, but increased precipitation on the wettest days (i.e., wetter winters and drier spring and autumn), resulting in modest annual precipitation changes but an increase in the frequency of dry years (Pierce et al. 2018).

The influence of climate on water supply availability is considered in Section 6 when assessing whether the 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 of the proposed project, in addition to existing and planned future uses.

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4 Water Resources

4.1 Surface Water

The Project site is in the Chino Hydrologic Subarea (HSA 801.21) which is in the Middle Santa Ana River Hydrologic Area (HA 802.1) and the Santa Ana River Hydrologic Unit (HU 801). The Santa Ana River is the primary natural surface water feature in the vicinity of the Project site (Figure 5). The Santa Ana River is largely classified as an intermittent stream and only contains flowing water during certain times of the year (USGS 2023). Major creeks within the Chino Hydrologic Subarea include Chino Creek, Cucamonga Creek, Deer Creek, Day Creek, and East Etiwanda Creek (Figure 5).

The CVWD diverts water from Cucamonga, Deer, Day, and East Etiwanda creeks and treats the water at one of CVWD's three water treatment plants prior to customer consumption. These surface water supplies are dependent on runoff from the surrounding mountains and, as a result, diversion volumes can vary from year-to-year. Local surface water has historically accounted for approximately 6% of CVWD's total water supply (CVWD 2021). The CVWD's water supplies are described in greater detail in Section 6.

4.2 Groundwater

4.2.1 Chino Basin

The Project site overlies the adjudicated Chino Basin, which covers an area of 240 square miles. The Chino Basin has been designated by DWR as a very low priority groundwater basin because it is adjudicated. The Chino Basin was adjudicated in 1978 and is exempt from the requirements of the Sustainable Groundwater Management Act, but instead is subject to groundwater pumping allocations under the court adjudication set up to meet water users' water supply and quality needs and to safeguard the environment (CBWM 2021a).

Hydrogeologic Setting

The Chino Basin is bounded on the east by the Rialto–Colton Fault, on the southeast by the contact with impermeable rocks forming the Jurupa Mountains and low divides connecting the exposures, on the south with impermeable rocks and by the Chino Fault, on the northwest by the San Jose Fault, and on the north by impermeable rocks of the San Gabriel Mountains and by the Cucamonga Fault (Figure 6) (DWR 2006).

The water-bearing units in the Chino Basin include Holocene[1] and Upper Pleistocene[2] alluvium (Figure 6). The Holocene alluvium consists mainly of alluvial-fan deposits, with a maximum thickness of 150 feet that are coarsest in and near the mouths of the canyons and finer away from canyon mouths in the southern part of the Chino Basin. The Pleistocene alluvium is exposed mainly in the northern part of the Chino Basin and supplies most of the water to wells in the Chino Basin. This alluvium is approximately 600 to 700 feet thick throughout most of the Chino Basin and contains interfingering fine, alluvial-fan deposits and coarser, fluvial deposits. Most of the wells producing water from the eastern half of the Chino Basin draw from the coarse portion of the Pleistocene alluvium. The Pleistocene

1 The Holocene Epoch began approximately 12,000 years ago and continues to present day.
2 The Pleistocene Epoch began approximately 2.6 million years ago and lasted until approximately 12,000 years ago.

alluvium in the central part of the Chino Basin has the lowest clay content and the highest well yields, with 500 to 1,000 gallons per minute. In the southern part of the Basin the sediments tend to contain more clay and wells generally yield between 100 and 500 gallons per minute (DWR 2006).

The Chino Basin receives recharge by direct infiltration of precipitation on the basin floor, by infiltration of surface flow, and by underflow from adjacent groundwater basins. As of 2006, the five recharge channels/facilities in the Chino Basin were Deer Creek, Day Creek, East Etiwanda, San Sevaine, and Victoria (Figure 5) (DWR 2006). A Recharge Master Plan was completed in 2001 and flood retention facilities, which are also recharge basins, were constructed from 2004 to 2014 (Figure 5) (CBWM 2018).

The total groundwater storage capacity of the Chino Basin is estimated to be 18,300,000 AF, and the current amount of groundwater in managed storage is 700,000 AF (CBWM 2021a; DWR 2006).

Groundwater Levels

Before the adjudication, the Chino Basin experienced declining groundwater levels. Between 1920 and 1980, groundwater levels declined approximately 80 feet. Following the adjudication, groundwater levels stabilized and increased over time. In 2000, groundwater levels were approximately 20 feet higher than in the 1980s (DWR 2006).

Groundwater levels vary throughout the Chino Basin. According to a groundwater elevation contour map for spring 2020, groundwater levels ranged from approximately 500 feet above mean sea level in the southern part of the Chino Basin to 850 feet above mean sea level in the eastern part of the Chino Basin (CBWM 2021b). The contours from spring 2020 are generally consistent with the contours from spring 2018, indicating regional groundwater flow in a south-southwest direction from the primary areas of recharge in the northern parts of the Chino Basin toward the Prado Basin in the south (CBWM 2021b). From spring 2000 to spring 2020, groundwater levels increased in the western portion of the Chino Basin and decreased in the central and eastern portions of the Chino Basin and around the eastern portion of the Chino Desalter well field in the south (CBWM 2021b).

Groundwater Quality

Groundwater quality in areas of the Chino Basin has been impacted by contamination. The most serious problems pertaining to groundwater quality are high concentrations (exceeding California drinking water standards) of total dissolved solids and nitrates from agricultural land use in the southern part of the Chino Basin (CBWM 2021b). Additional primary contaminants of concern include Perchlorate and volatile organic compounds from industrial operations (CBWM 2021b). There are currently five volatile organic compound contamination plumes in the Chino Basin based on concentrations measured at wells from July 2015 to June 2020 (CBWM 2021a). The five volatile organic compound contamination plumes are all located in the southwestern part of the Chino Basin south of Interstate 10 and not in the vicinity of the Project site (CBWM 2021a).

The *2020 State of the Basin Report* lists all the contaminants that exceeded a California drinking water maximum contaminant level and the number of wells with exceedances. Contaminants where a primary maximum contaminant level was exceeded in 50 or more wells from July 2015 to June 2020 and are not associated with a single point-source contamination plume include 1,2,3-Trichloropropane, 1,2-dichloroethane, arsenic, benzene, total chromium, hexavelant chromium, perchlorate, perchloroethylene, and trichloroethylene. Contaminants that the California Division of Drinking Water considers a candidate for the development of a maximum contaminant

level or is in the process of developing a maximum contaminant level include perfluorooctanoic acid, perfluorooctanesulfonic acid, and 1,4-dioxane (CBWM 2021b).

Because groundwater quality in the Chino Basin has been impacted by contamination, groundwater produced by CVWD undergoes treatment and/or blending at one of CVWD's three treatment plants before distribution to customers.

Groundwater Production

Total annual groundwater production from the Chino Basin has ranged from a minimum of approximately 122,864 AF during fiscal year (FY) 1982/1983 to a maximum of approximately 188,910 AFY during FY 2008/2009 (CBWM 2021a). A majority of groundwater is currently pumped for municipal and agricultural purposes, and the remaining is pumped by non-agricultural parties (CVWD 2021). There are currently approximately 376 active production wells in the Chino Basin (CBWM 2021b). A breakdown of groundwater production by user pool is provided in Table 2. Groundwater from the Chino Basin has historically accounted for approximately 34% of CVWD's total water supply (CVWD 2021).

Table 2. Chino Basin Groundwater Production

Pool	Fiscal Year 1982/1983 Production		Fiscal Year 2008/2009 Production		Fiscal Year 2020/2021 Production	
	Acre-Feet	Percentage	Acre-Feet	Percentage	Acre-Feet	Percentage
Agricultural	56,858	46%	23,277	12%	14,945	9%
Overlying Non-Agricultural	2,448	2%	2,420	1%	2,795	2%
Appropriative	63,557	52%	134,119	71%	105,040	64%
Chino Basin Desalter Authority	N/A	N/A	29,012	15%	40,156	25%
Department of Toxic Substances Control	N/A	N/A	83	<1%	77	<1%
Total	**122,864**	**100%**	**188,910**	**100%**	**163,014**	**100%**

Source: CBWM 2021a.
Notes: N/A = not available.

The Judgement established a Safe Yield of 140,000 AFY for the Chino Basin, which has since been lowered by the CBWM, reflecting the effects of continued development, conservation, and long-term drought (CVWD 2021). Pursuant to the most recent Safe Yield reset, effective July 2020, the Safe Yield in the Chino Basin is determined to be 131,000 AFY for the period of 2021 through 2030 (CVWD 2021). As a result of this reset, the Appropriative Pool Operating Safe Yield is 40,834 AFY. The Safe Yield is recalculated every 10 years and is defined by the Judgement as the long-term average annual quantity of groundwater (excluding replenishment of stored water but including return flow to the Chino Basin from use of replenishment or stored water) that can be produced from the Chino Basin under conditions of a particular yield without causing an undesirable result.

The CBWM can reallocate the unused portion of the Chino Basin Safe Yield from the Overlying Agricultural Pool to the Appropriative Pool members in any year if Agricultural Pool extractions are less than their share, or if agricultural land has been converted to non-agricultural use. From 2000 to 2020, the annual quantity of the Agricultural Pool

averaged 50,457 AFY (CVWD 2021). In FY 2020/2021, the total water rights available for reallocation due to Agricultural Pool underproduction of Safe Yield was 61,315 AF, and CVWD received 2,552 AF of that(CBWM 2021a). Appropriators that are parties to the Judgement are authorized to produce groundwater in excess of their rights as long as they pay assessments to the CBWM. The assessments are used to purchase water from MWD to replenish the Chino Basin (CVWD 2021).

In FY 2020/2021 the CVWD had an annual production right of 6,879.7 AF and produced 26,225.7 AF as part of its Appropriative Pool production, but had a storage and recovery programs balance of 20,500 AF resulting in a total production and exchanges of 5,725.7 AF and total underproduced/carryover balance of 1,154 AF (CBWM 2021a). That is, although the CVWD produced water in excess of its annual production right, the majority of the production was storage and recovery program water as opposed to Safe Yield water.

4.2.2 Cucamonga Basin

Northwest of the Project site and adjacent to the Chino Basin is the adjudicated Upper Santa Ana Valley Basin – Cucamonga Subbasin (DWR Basin No. 8-002.02). The Upper Santa Ana Valley Basin – Cucamonga Subbasin (Cucamonga Basin) covers an area of 15 square miles and is bounded on the north by the San Gabriel Mountains and on the west, east, and south by the Red Hill fault (Figure 6). Groundwater in the basin is found in Holocene and Pleistocene alluvial deposits that consist of unconsolidated to loosely consolidated gravel, sand, and silt with a few beds of compacted clay (DWR 2004). The total groundwater storage capacity of the Cucamonga Basin is estimated to be 53,600 AF (DWR 2004).

The Cucamonga Basin has been designated by DWR as a very low priority groundwater basin because it is adjudicated. The Cucamonga Basin was adjudicated in 1958 and is exempt from the requirements of the Sustainable Groundwater Management Act, but instead is subject to groundwater pumping allocations under the court adjudication. Today, the adjudicated water rights in the Cucamonga Basin are allocated to three producers: CVWD; West End Consolidated Water Company, and San Antonio Water Company. The 1958 Decree did not designate a watermaster, and annual reports were not required. The Cucamonga Basin is jointly managed by the CVWD, West End Consolidated Water Company, and San Antonio Water Company, and the CBWM provides reporting for the Cucamonga Basin (SWRCB 2016).

Although the CVWD currently obtains most of its groundwater supply from the Chino Basin, the CVWD also pumps from the Cucamonga Basin. Groundwater from the Cucamonga Basin has historically accounted for approximately 13% of CVWD's total water supply (CVWD 2021).

4.3 Imported Water

The CVWD purchases untreated imported water from the MWD through IEUA, which is treated at a water treatment plant. The largest component of CVWD's water supply typically comes from imported water and ranges from approximately 25% to 65% of CVWD's total water supply (CVWD 2021). The CVWD has two connections to untreated State Water Project water: an 18-inch connection and a 60-inch connection. The CVWD also has one 24-inch connection to untreated Colorado River Aqueduct water, but this connection has been disconnected due to the lack of treatment capabilities. The CVWD's projected purchases of untreated imported water over the next 25 years assumes that CVWD will use all of its maximum MWD Tier I allocation, which is 28,369 AF (CVWD 2021).

4.4 Recycled Water

The CVWD's recycled water supplies are produced by IEUA, which has five regional wastewater treatment plants that can produce tertiary-treated, Title 22-quality, recycled water. The CVWD has rights to the recycled water produced from the estimated 14,000 AF of sewage that is treated annually by IEUA. The CVWD has 135 recycled water customers and recycled water has historically accounted for approximately 2% of CVWD's total water supply (CVWD 2021).

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5 Water Management Plans and Programs

5.1 Cucamonga Valley Water District 2020 Urban Water Management Plan

The 2020 UWMP contains information on CVWD's current and projected water use and supply reliability. The CVWD's water supply sources consist of groundwater pumped from the Chino and Cucamonga basins; imported surface water from the MWD purchased through IEUA; local surface water from Cucamonga Canyon, Day/East Etiwanda Canyon, and Deer Canyon; and recycled water purchased from IEUA. The CVWD's main sources of water supply are from groundwater pumped from the Chino Basin and imported surface water (CVWD 2021). The CVWD is a member of the Appropriative Pool of the Chino Basin Judgement. The CBWM can reallocate the unused portion of the 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 (CVWD 2021).

The CVWD relies on imported water as part of its supply, which is ultimately provided by the MWD. The MWD has prepared its own UWMP, which includes a discussion of its water supplies and the impact of climate change (MWD 2021a). MWD's 2020 UWMP is described below in Section 5.2.

5.2 Metropolitan Water District of Southern California 2020 Urban Water Management Plan

The 2020 UWMP provides an assessment of MWD's water service reliability and describes and evaluates sources of water supply, efficient uses of water, demand management measures, implementation strategy and schedule, and other relevant information and programs. The information included in the 2020 UWMP represents the most current and available planning projections of supply capability and demand forecasts developed through a collaborative process with the member agencies (MWD 2021a). The MWD completed a water service reliability assessment and determined that it has supply capabilities sufficient to meet expected demands from 2025 through 2045 under a normal year, a single-dry year, and a period of drought lasting five consecutive water years (MWD 2021a).

5.3 Metropolitan Water District of Southern California 2015 Integrated Water Resources Plan

The 2015 IWRP describes approaches for how MWD will increase conservation, advance local resources development, and maximize its storage reserves in the future to ensure a reliable water supply. The IWRP is a "living" strategic plan that evolves as needed to address the needs of future generations (MWD 2016). The IWRP includes a discussion of the process of regional collaboration, an outlook on supplies and demands, and adaptive management strategies to respond to future uncertainty. The MWD anticipates having a total water supply that exceeds retail demands by several hundred acre-feet through 2040 (MWD 2016).

5.4 Chino Basin Watermaster Peace Agreements

The CBWM was established in 1978 under a Judgement entered in the Superior Court of the State of California for the County of San Bernardino. In July 2000, parties to the Judgment entered into the Peace Agreement. The Peace Agreement outlined the parties' intent to implement the OBMP and other related responsibilities for the CBWM and the parties. In 2007, Peace II Agreement was entered into by the parties to the Peace Agreement to maximize the beneficial use of the groundwater and the Chino Basin to further benefit the Chino Basin and the parties to the Judgment (CBWM 2007).

As part of these Peace Agreements, the Chino Basin Storage Management Plan was developed, which includes three types of storage agreements that result in five types of storage accounts. These include unproduced rights in the Safe Yield and Chino Basin water purchased or transferred from other parties. Parties can store water that is in excess of their demands and may recover that water in the future as the need arises. The CBWM maintains records of the replenishment, production, losses, and end-of-year storage totals for all storage accounts and provides that information on an annual basis (CVWD 2021).

The Chino Desalter Authority (CDA) operates two desalters and several wells in the southern part of the Chino Basin that can produce approximately 40,000 AFY from the Chino Basin for the purpose of groundwater remediation and control of contaminant migration. The CDA is not a party to the Judgement and has no water rights in the Chino Basin. All groundwater extracted by CDA is replenished by members of the Appropriative and Overlying Non-Agricultural Pools, in accordance with the 2007 Peace II Agreement. The Overlying Non-Agricultural parties have a relatively small replenishment obligation for the CDA, while the members of the Appropriative Pool will contribute a total of 10,000 AFY toward CDA replenishment (CVWD 2021).

5.5 Chino Basin Watermaster Optimum Basin Management Plan

The OBMP was developed pursuant to the Judgement and a ruling by the court on February 19, 1998. The OBMP outlines a strategy that provides for the enhanced yield of the Chino Basin, and seeks to provide reliable, high-quality water supplies for the development that is expected to occur within the Chino Basin (CBWM 2021b). The OBMP Implementation Plan includes the following Program Elements:

- PE 1. Develop and Implement a Comprehensive Monitoring Program
- PE 2. Develop and Implement a Comprehensive Recharge Program
- PE 3. Develop and Implement a Water Supply Plan for the Impaired Areas of the Basin
- PE 4. Develop and Implement a Comprehensive Groundwater Management Plan for Management Zone 1
- PE 5. Develop and Implement a Regional Supplemental Water Program
- PE 6. Develop and Implement Cooperative Programs with the Regional Board and Other Agencies to Improve Basin Management
- PE 7. Develop and Implement a Salt Management Program
- PE 8. Develop and Implement a Groundwater Storage Management Program
- PE 9. Develop and Implement Conjunctive Use Programs

CBWM staff prepare a State of the Basin Report every two years that describes the results of monitoring activities and demonstrate progress towards implementation of the various Program Elements listed above. The *2020 State of the Basin Report* is the most recent State of the Basin Report (CBWM 2021b), and the *OBMP Staff Status Report 2022-2: July to December 2022* is the most recent semi-annual status report (CBWM 2022).

5.6 Chino Basin Watermaster 2018 Recharge Master Plan

The *2018 Recharge Master Plan* for the CBWM documents the investigation conducted by the IEUA and the CBWM pursuant to the Court's direction to update the 2013 Amendment to the *2010 Recharge Master Plan Update* (CBWM 2018). The *2018 Recharge Master Plan* contains technical documentation demonstrating that the CBWM has sufficient recharge capacity to meet expected future replenishment obligations through 2050 (CBWM 2018).

5.7 Chino Basin Watermaster Annual Report

An Annual Report is prepared by the CBWM. These reports encompass the activities that occurred during the fiscal year and includes the Assessment Package and Audited Financial Report that were produced during the year of the report. The report provides updates on the OBMP, the Recharge Master Plan, community and engagement programs, and groundwater monitoring programs. The latest report as of the writing of this WSA is the 44th Annual Report of the Chino Basin Watermaster (CBWM 2021a), which provides an update on groundwater conditions in the Chino Basin for water year 2020/2021.

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6 Water Supply Assessment

Water demands in the Chino Basin are supplied by a variety of water purveyors, including municipal utilities, water districts, water companies, and private groundwater wells. Water supply for the Project site is from the CVWD, whose service area also includes portions of the cities of Fontana, Ontario, and Upland, and some unincorporated areas of San Bernadino County. The following provides an assessment of whether CVWD'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 of the proposed project, in addition to existing and planned future uses.

6.1 Cucamonga Valley Water District Water Supplies

The CVWD's primary water sources are groundwater pumped from the Chino Basin and imported surface water. On average, from FY 2011 to 2020, 47% of water supplied to CVWD customers was groundwater (34% from the Chino Basin and 13% from the Cucamonga Basin), 45% was imported surface water, 6% was local surface water, and 2% was recycled water (CVWD 2021). The CVWD plans to construct new groundwater wells in the Chino Basin by 2025 as part of future water projects, estimated to provide an additional 7,500 AFY (CVWD 2021).

The CVWD has an appropriative right of 5,199 AFY as of 2021 (CBWM 2021a). The CVWD has acquired the appropriative rights of two other appropriators, the Etiwanda Water Company and a majority interest of the Fontana Union Water Company. Through these acquisitions, the CVWD acquired rights to 768 AFY in the Chino Basin from Etiwanda Water Company and 9,188 AFY from the Fontana Union Water Company. Under the Judgement, the annual pumping rights of Appropriative parties are not administered according to their specific rights. Instead, their specific rights are used to determine what percentage of the Operating Safe Yield each Appropriative party can produce without paying a replenishment obligation. CVWD's total rights equate to approximately 18.3% of total Chino Basin rights, which equates to 7,455.47 AFY (CVWD 2021).

CVWD's reliable quantities of projected water supply sources over the next 25 years are provided in Table 3.

Table 3. Cucamonga Valley Water District Water Supplies

Water Supply	Additional Detail on Water Supply	Actual Volume (acre-feet)	Projected Water Supply (acre-feet)				
		2020	2025	2030	2035	2040	2045
Groundwater	Chino Basin	23,315	10,250	14,773	16,331	17,630	17,630
Groundwater	Cucamonga Basin	3,618	10,000	10,000	10,000	10,000	10,000
Surface Water	Cucamonga Canyon Tunnel Water	931	800	800	800	800	800
Surface Water	Deer Canyon	0	50	50	50	50	50
Surface Water	Day/East Etiwanda Canyon Tunnel Water	3,813	2,100	2,100	2,100	2,100	2,100
Purchased or Imported Water	Inland Empire Utilities Agency	14,343	28,369	28,369	28,369	28,369	28,369

Table 3. Cucamonga Valley Water District Water Supplies

Water Supply	Additional Detail on Water Supply	Actual Volume (acre-feet)	Projected Water Supply (acre-feet)				
		2020	2025	2030	2035	2040	2045
Recycled Water	Inland Empire Utilities Agency (Direct Use)	1,038	1,800	2,000	2,000	2,000	2,000
Recycled Water	Inland Empire Utilities Agency (Groundwater Recharge)	4,458	4,000	4,000	4,000	4,000	4,000
	Total	51,516	57,369	62,092	63,650	64,949	64,949

Source: CVWD 2021.

CVWD's projected quantities of imported water supplies and surface water supplies are based on historical long-term averages and available supplies during previous dry year conditions. CVWD's projected quantities of recycled water supplies to meet non-potable demands are based on historical long-term averages. The CVWD will purchase additional imported water supplies and produce additional groundwater from the Chino Basin to meet its total water demands. In the event that local surface water and/or imported water is limited, the CVWD has the flexibility to increase groundwater production from the Chino Basin (CVWD 2021).

CVWD's imported water supplies from the MWD, through the IEUA, may be impacted during a multi-year drought or other conditions that limit the MWD from delivering sufficient water supplies to all its member agencies, and consequently to the CVWD. In anticipation of such a reduction in supplies, the MWD developed a Water Supply Allocation Plan that provides a means of equitably providing reduced water supplies to each of MWD's member agencies (MWD 2021b).

6.2 Cucamonga Valley Water District Water Supply and Demand Comparison

CVWD's projected normal year demands were based on CVWD's 2020 Water Use Target of 232 gallons per-capita per-day for potable water demands. The ratio of total water supplies available to the CVWD during a historical normal year and during a historical single dry year was used to estimate the CVWD's projected water demands during single dry years. The ratio of total water supplies available to the CVWD during a historical normal year and a historical five-year drought was used to estimate the CVWD's projected water demands during a five consecutive year drought period. CVWD's projected dry year water supplies over the next 25 years were based on the minimum supplies needed by the CVWD to meet projected single-dry year demands. CVWD water demands over the past 10 years has ranged from 40,166 AFY to 55,726 AFY, with an average of 48,276 AFY (CVWD 2021).

FY 2010/2011 represents an "average" or "normal" water year for CVWD, in which the total amount of rainfall was similar to the historical average rainfall of 10.7 inches (CVWD 2021). CVWD's projected water supplies available during normal years in five-year increments over the next 25 years are provided in Table 4.

Table 4. Normal Year Supply and Demand Comparison

	Projected Water Supply and Demand (acre-feet)				
	2025	2030	2035	2040	2045
CVWD Supply Totals	+57,369	+62,092	+63,650	+64,949	+64,949
CVWD Demand Totals	−53,369	−58,092	−59,650	−60,949	−60,949
Project Water Demand	−83	−83	−83	−83	−83
Difference	**+3,917**	**+3,917**	**+3,917**	**+3,917**	**+3,917**

Source: CVWD 2021.
Notes: CVWD = Cucamonga Valley Water District; N/A = not applicable.

A single dry year for the CVWD was represented in FY 2017/2018, in which the total amount of rainfall was below the historical average rainfall. CVWD's projected water supplies available during single-dry years in five-year increments over the next 25 years are provided in Table 5.

Table 5. Single Dry Year Supply and Demand Comparison

	Projected Water Supply and Demand (acre-feet)				
	2025	2030	2035	2040	2045
CVWD Supply Totals	+55,999	+60,610	+62,131	+63,399	+63,399
CVWD Demand Totals	−52,099	−56,710	−58,231	−59,499	−59,499
Project Water Demand	−83	−83	−83	−83	−83
Difference	**+3,817**	**+3,817**	**+3,817**	**+3,817**	**+3,817**

Source: CVWD 2021.
Notes: CVWD = Cucamonga Valley Water District; N/A = not applicable.

The CVWD's projected water supplies available during five consecutive dry years in five-year increments over the next 25 years are provided in Table 6. In the event of a prolonged drought, the CVWD will increase its groundwater production and will pay the applicable assessments to purchase imported water to be delivered in the future when supplies are available. Additionally, upon adoption of a water supply shortage stage, water reduction demands will be effective immediately (CVWD 2021).

Table 6. Multiple Dry Year Supply and Demand Comparison

		Projected Water Supply and Demand (acre-feet)				
		2025	2030	2035	2040	2045
First Year	CVWD Supply Totals	+60,708	+65,708	+67,358	+68,733	+68,733
	CVWD Demand Totals	−56,508	−61,508	−63,158	−64,533	−64,533
	Project Water Demand	−83	−83	−83	−83	−83
	Difference	**+4,117**	**+4,117**	**+4,117**	**+4,117**	**+4,117**
Second Year	CVWD Supply Totals	+63,297	+68,509	+70,229	+71,662	+71,662
	CVWD Demand Totals	−58,897	−64,109	−65,829	−67,262	−67,262

Table 6. Multiple Dry Year Supply and Demand Comparison

		Projected Water Supply and Demand (acre-feet)				
		2025	2030	2035	2040	2045
	Project Water Demand	−83	−83	−83	−83	−83
	Difference	**+4,317**	**+4,317**	**+4,317**	**+4,317**	**+4,317**
Third Year	Supply Totals	+64,924	+70,271	+72,035	+73,506	+73,506
	Demand Totals	−60,424	−65,771	−67,535	−69,006	−69,006
	Project Water Demand	−83	−83	−83	−83	−83
	Difference	**+4,417**	**+4,417**	**+4,417**	**+4,417**	**+4,417**
Fourth Year	Supply Totals	+57,077	+61,774	+63,323	+64,615	+64,615
	Demand Totals	−53,077	−57,774	−59,323	−60,615	−60,615
	Project Water Demand	−83	−83	−83	−83	−83
	Difference	**+3,917**	**+3,917**	**+3,917**	**+3,917**	**+3,917**
Fifth Year	Supply Totals	+46,852	+50,707	+51,978	+53,038	+53,038
	Demand Totals	−43,552	−47,407	−48,678	−49,738	−49,738
	Project Water Demand	−83	−83	−83	−83	−83
	Difference	**+3,217**	**+3,217**	**+3,217**	**+3,217**	**+3,217**

Source: CVWD 2021.
Notes: CVWD = Cucamonga Valley Water District; N/A = not applicable.

As shown above, during all water year scenarios, the CVWD will have surplus water and can meet the Project's demand of 83 AFY.

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7 Conclusion

A WSA is required to identify and describe the water supply source(s) that will serve a proposed project. CWC Section 10910(d) requires a WSA to include an identification of any existing water supply entitlements, water rights, and water service contracts relevant to the identified water supply for a proposed project, and a description of the quantities of water received in prior years if the source is a public water supplier.

The CVWD would be the sole source of water for the proposed Project, and its primary water supply sources are groundwater pumped from the Chino Basin and Cucamonga Basin, and imported surface water. The CVWD has the ability to purchase additional imported water supplies and produce groundwater from the Chino Basin to meet its total water demands. In the event local surface water and/or imported water is limited, the CVWD has the flexibility to increase groundwater production from the Chino Basin (CVWD 2021). CVWD may increase groundwater production from the Chino Basin in excess of water rights as long as overproduction is taken from the CVWD storage account or by purchasing replenishment water. The CVWD currently has approximately 65,000 AF stored in the Chino Basin.

Based on the information, analysis, and findings documented in this WSA, CVWD'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 existing and planned future uses of the identified water supply.

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8 References

CBWM (Chino Basin Watermaster). 2007. *2007 CBWM Groundwater Model Documentation and Evaluation of the Peace II Project Description*. November 2007.

CBWM. 2018. *2018 Recharge Master Plan*. Prepared by Wildermuth Environmental Inc. September 2018. https://www.cbwm.org/docs/engdocs/2018%20RMPU/20180914_2018_RMPU_final.pdf.

CBWM. 2021a. *44th Annual Report of the Chino Basin Area Watermaster*. Fiscal Year 2020–21. 2021.

CBWM. 2021b. *Chino Basin Optimum Basin Management Program. 2020 State of the Basin Report*. Prepared by West Yost. June 2021. http://www.cbwm.org/docs/engdocs/State_of_the_Basin_Reports/SOB%202020/2020%20State%20of%20the%20Basin%20Report.pdf.

CBWM. 2022. *Optimum Basin Management Program Staff Status Report 2022-2: July to December 2022*.

City of Ontario. 2012. City of Ontario Water Master Plan. April 2012. https://www.ontarioca.gov/sites/default/files/Ontario-Files/Engineering/plan-check-guidelines/Sewer-Water/section_4_water_use.pdf.

City of Rancho Cucamonga. 2023. *Zoning Plan Interactive Viewer*. Accessed October 2023. https://www.cityofrc.us/everything-we-do/zoning-map.

CVWD (Cucamonga Valley Water District). 2021. *Cucamonga Valley Water District 2020 Urban Water Management Plan*. Prepared by Stetson Engineers Inc. June 2021. https://www.cvwdwater.com/DocumentCenter/View/4741/Final-Cucamonga-Valley-Water-District-2020-UWMP.

DWR (Department of Water Resources). 2004. *California's Groundwater Bulletin 118 Upper Santa Ana Valley Groundwater Basin, Cucamonga Subbasin*. https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Bulletin-118/Files/2003-Basin-Descriptions/8_002_02_CucamongaSubbasin.pdf.

DWR. 2006. *California's Groundwater Bulletin 118 Upper Santa Ana Valley Groundwater Basin, Chino Subbasin*. Updated January 20, 2006. https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Bulletin-118/Files/2003-Basin-Descriptions/8_002_01_ChinoSubbasin.pdf

MWD (Metropolitan Water District of Southern California). 2016. *Integrated Water Resources Plan 2015 Update*. January 2016. https://www.mwdh2o.com/how-we-plan/integrated-resource-plan/.

MWD. 2021a. *2020 Urban Water Management Plan*. https://www.mwdh2o.com/media/21641/2020-urban-water-management-plan-june-2021.pdf.

MWD. 2021b. *Water Shortage Contingency Plan*. June 2021. https://www.mwdh2o.com/media/21648/water-shortage-contingency-plan-june-2021.pdf.

Path Forward (Path Forward Environmental Engineering and Geology). 2020. Phase I Environmental Site Assessment 8996 Etiwanda Avenue Rancho Cucamonga, California. October 20, 2020.

Pierce, D.W., J.F. Kalansky, and D.R. Cayan. 2018. Climate, Drought, and Sea Level Rise Scenarios for California's Fourth Climate Change Assessment. Technical Report CCCA4-CEC-2018-006. California Energy Commission. https://www.energy.ca.gov/sites/default/files/2019-11/Projections_CCCA4-CEC-2018-006_ADA.pdf.

SWRCB (State Water Resources Control Board). 2016. *An Evaluation of California's Adjudicated Groundwater Basins*. January 2016. https://www.waterboards.ca.gov/water_issues/programs/gmp/docs/resources/swrcb_012816.pdf.

USGS. 2023. The National Map Viewer. Accessed October 2023. https://apps.nationalmap.gov/viewer/.

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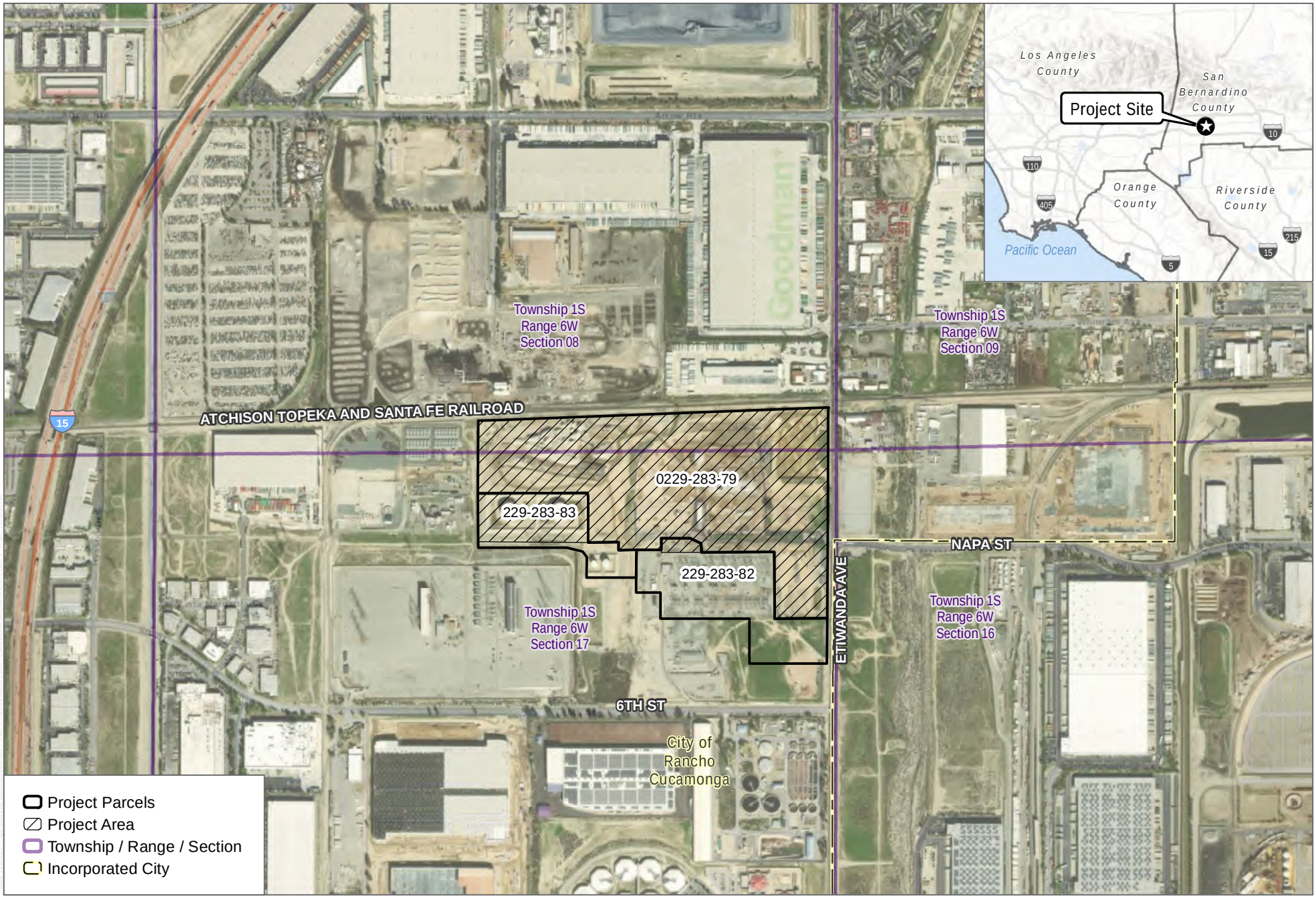

SOURCE: ESRI; USGS; County of San Bernardino

DUDEK

0 500 1,000 Feet

FIGURE 1

Project Location

Etiwanda Commerce Center Project

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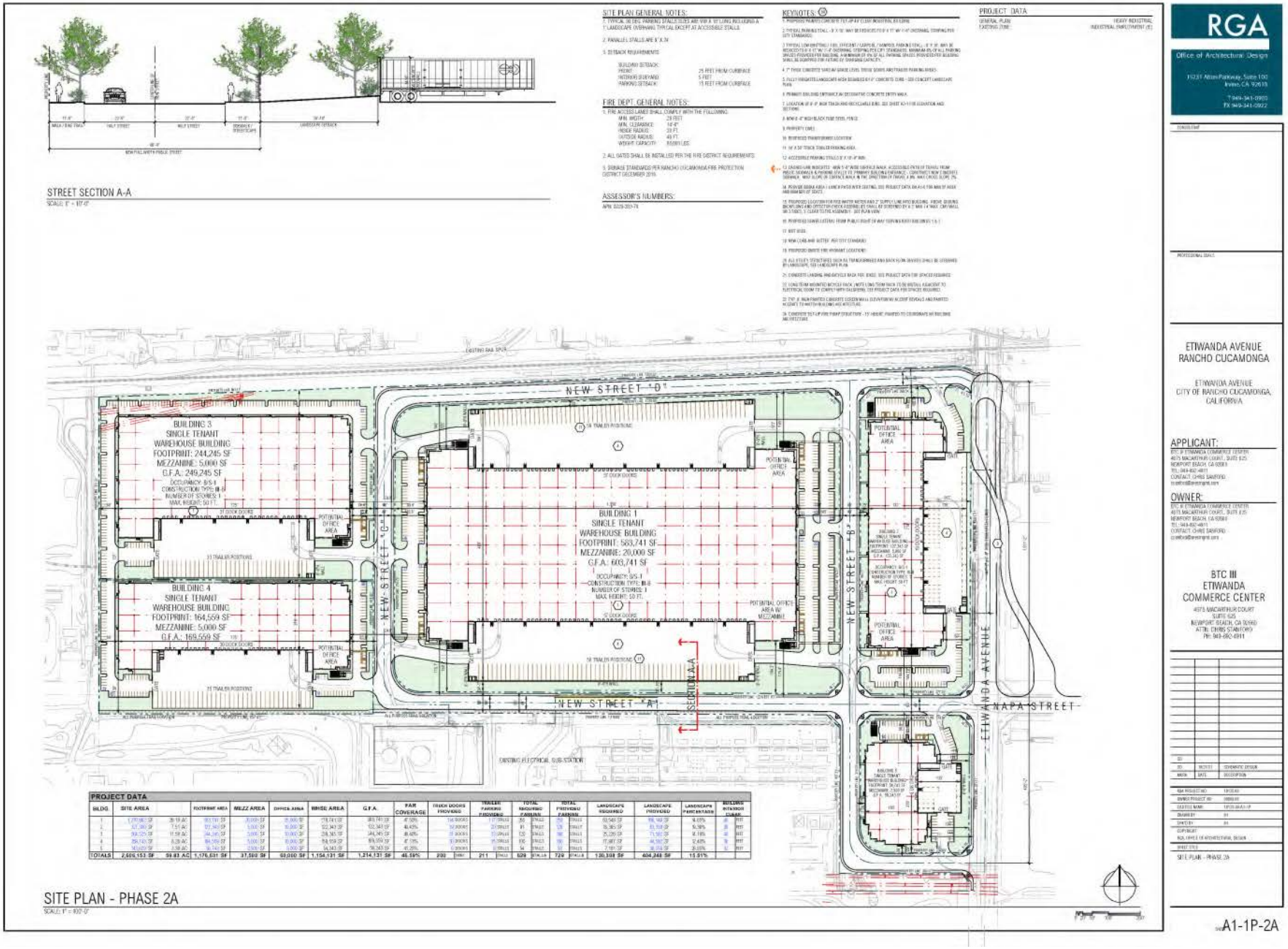

FIGURE 2

Conceptual Site Plan

Etiwanda Commerce Center Project

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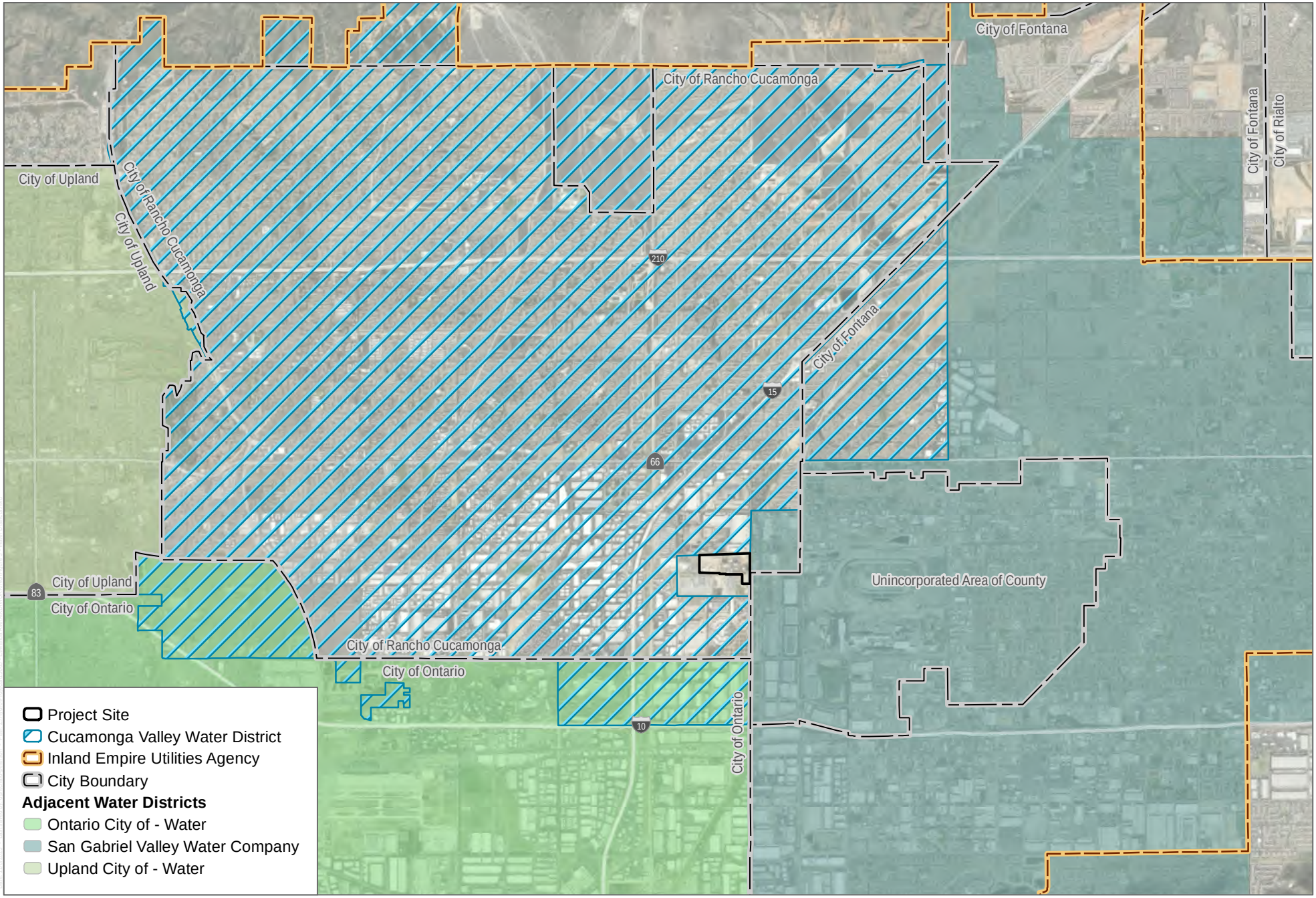

SOURCE: ESRI; DWR

DUDEK

0 3,500 7,000 Feet

FIGURE 3

Water Districts

Etiwanda Commerce Center Project

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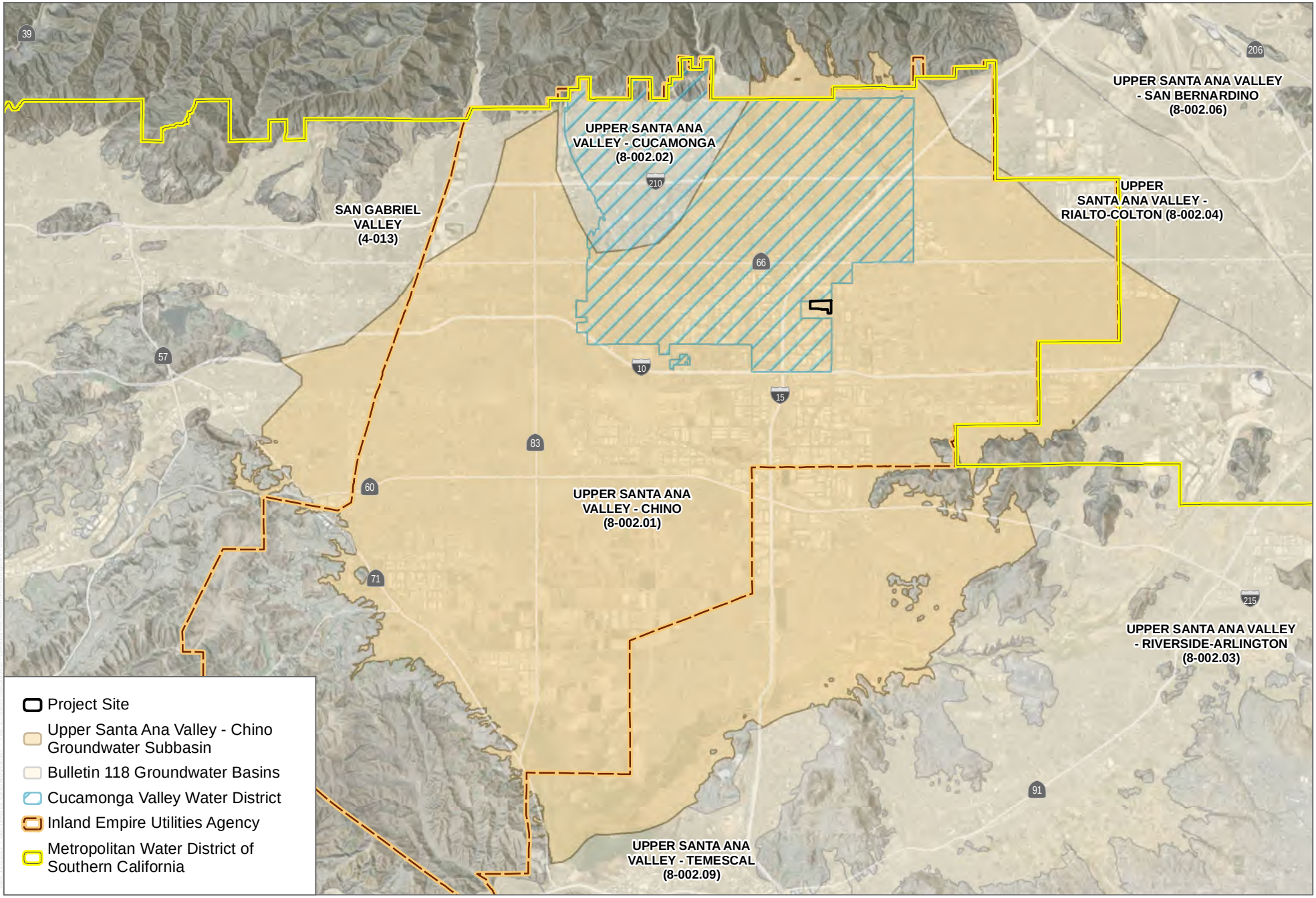

SOURCE: ESRI; DWR

DUDEK

0 1.5 3 Miles

FIGURE 4

Groundwater Basins

Etiwanda Commerce Center Project

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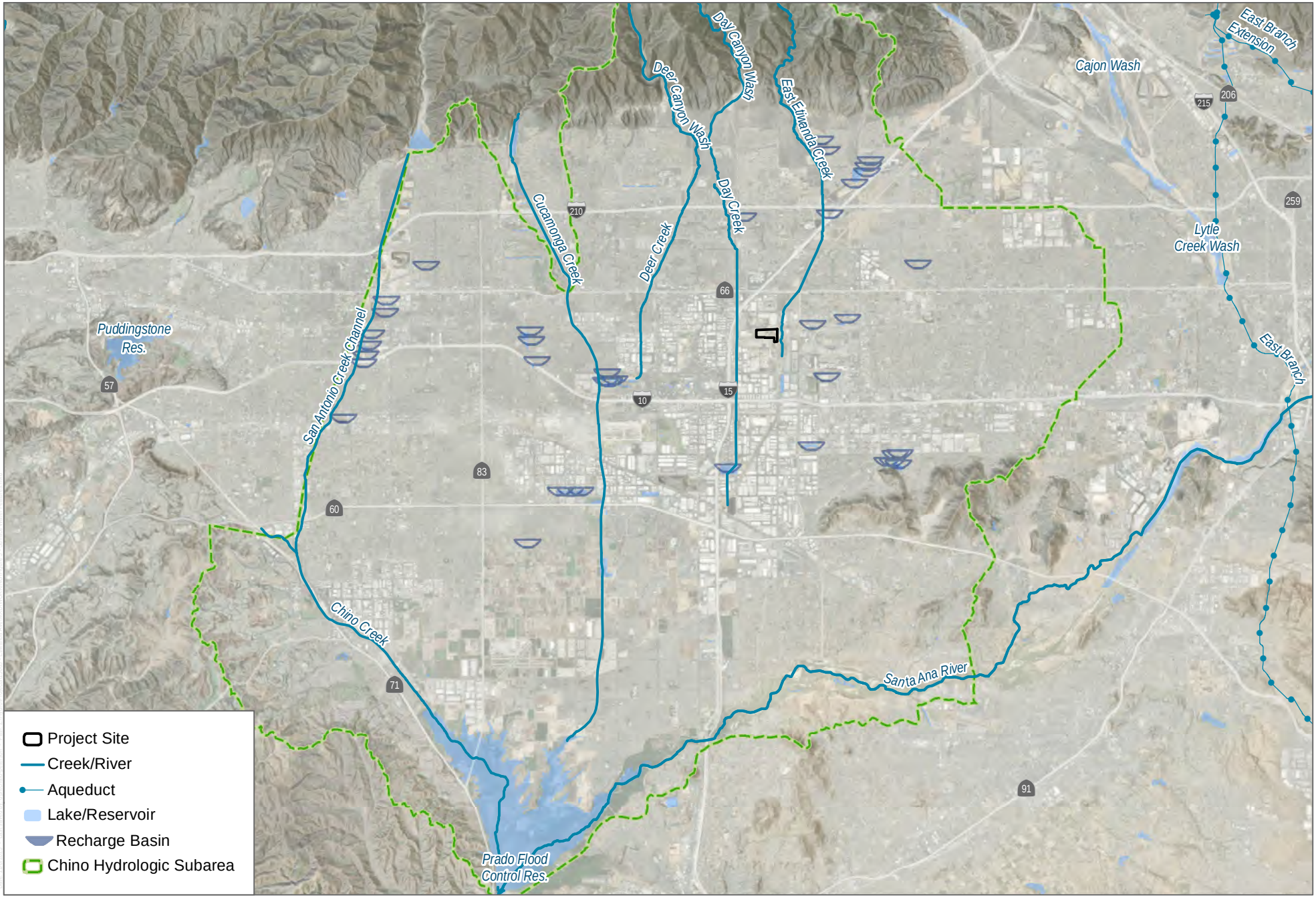

SOURCE: ESRI; DWR; USGS

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0 1.5 3 Miles

FIGURE 5

Surface Water Features

Etiwanda Commerce Center Project

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Project Site

Groundwater Basin

Structural Features

anticline, certain

syncline, certain

Contacts and Faults

contact, certain

fault, approx. located

fault, certain

fault, concealed

fault, concealed, queried

water boundary

dextral fault, certain

normal fault, certain

normal fault, concealed

normal fault, concealed, queried

Geologic Units

Q - Alluvium, lake, playa, and terrace deposits

Qoa - Older alluvium, lake, playa, and terrace deposits

P - Pliocene marine sandstone, siltstone, shale, and conglomerate

M - Miocene marine sandstone, shale, siltstone, conglomerate, and breccia

Tv - Tertiary volcanic flow rocks

J - Jurassic shale and sandstone; minor conglomerate, chert, slate, limestone, and pyroclastic rocks

sch - Schists of various types; mostly Paleozoic or Mesozoic age; some Precambrian

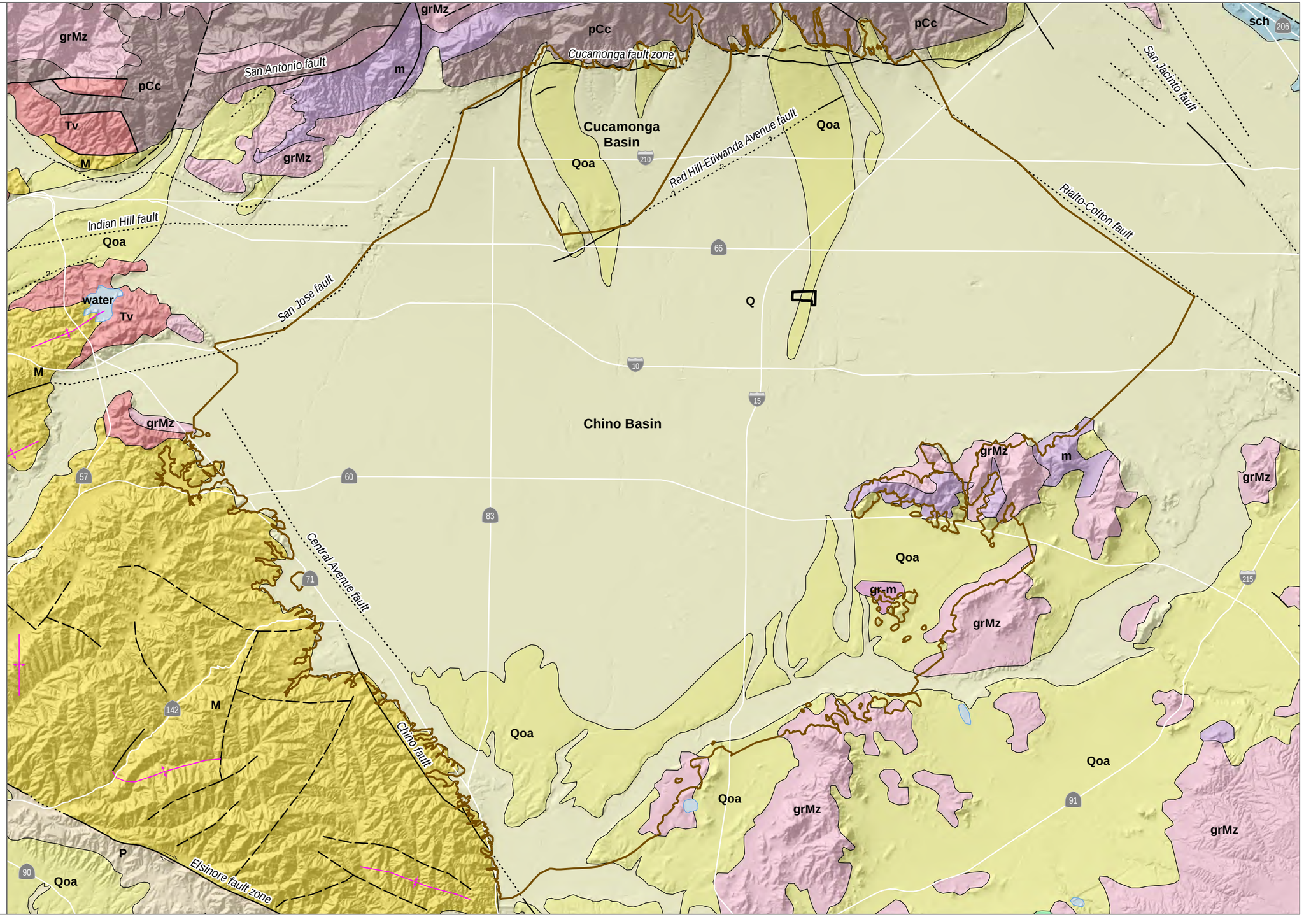
gr-m - Mesozoic to Precambrian granitic and metamorphic rocks; mostly gneiss and other metamorphic rocks injected by granitic rocks

grMz - Mesozoic granite, quartz monzonite, granodiorite, and quartz diorite

m - Undivided pre-Cenozoic metasedimentary and metavolcanic rocks of great variety

pCc - Complex of Precambrian igneous and metamorphic rocks

Water



SOURCE: DOC; DWR

DUDEK

0 1.5 3 Miles

FIGURE 6

Geologic Map

Etiwanda Commerce Center Project

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