Appendix G
Water Supply Evaluation

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Water Supply Evaluation

California State Polytechnic University, Pomona Campus Master Plan Update

MAY 2025

Prepared for:

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Acronyms and Abbreviations

Acronym/Abbreviation	Definition
AF	acre-feet
AFY	acre-feet per year
CEQA	California Environmental Quality Act
CWC	California Water Code
DWR	California Department of Water Resources
FTES	full-time equivalent students
GAMA	Groundwater Ambient Monitoring and Assessment Program
gpd	gallons per day
GSA	Groundwater Sustainability Agency
GSF	Gross square feet
GSP	Groundwater Sustainability Plan
PWS	public water system
SB	Senate Bill
SGMA	Sustainable Groundwater Management Act
SWP	California State Water Project
SWRCB	California State Water Resources Control Board
TDS	Total dissolved solids
TVMWD	Three Valleys Municipal Water District
USGS	United States Geological Survey
UWMP	Urban Water Management Plan
WSA	Water Supply Assessment
WSE	Water Supply Evaluation
WVWD	Walnut Valley Water District

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1 Introduction

1.1 Purpose of Document

Senate Bill (SB) 610 was enacted in 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 this bill is to improve the linkage between water and land use planning by ensuring greater communication between water providers and local planning agencies and ensuring 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 (CEQA) and meets certain criteria.

While the California Polytechnic State University, Pomona (Cal Poly Pomona) Campus Master Plan Update ("proposed Master Plan") has been determined to be subject to CEQA by the California State University (CSU) Board of Trustees (the CEQA lead agency), the CSU determined that a WSA under SB 610 is not required for the proposed Master Plan because the CSU, as a state entity, is not required to prepare WSAs for projects undergoing CEQA review. However, the CSU determined that a Water Supply Evaluation (WSE) is warranted for the proposed Master Plan to assess water supplies and constraints related to the proposed Master Plan. See Section 1.3, Water Supply Assessment Applicability for additional information.

The CSU Board of Trustees will make an independent determination as to whether there is adequate water supply for the proposed Master Plan. This WSE examines the availability of the identified water supply under normal-year, single-dry-year, and multiple-dry-year conditions over a 20-year projection. This WSE also accounts for the projected water demand of the proposed Master Plan plus other existing and planned future uses of the identified water supply.

1.2 Project Location and Description

The existing 860-acre Cal Poly Pomona main campus is located partially in the incorporated cities of Pomona and Walnut, and the unincorporated area of the County of Los Angeles, California (Figure 1). Los Angeles County (County) is located in southern California, north of Orange County, and west of San Bernardino County. The cities of Pomona and Walnut are located in the eastern portion of the County.

The proposed Master Plan would provide facility, space, and infrastructure improvements to support a planned enrollment of approximately 30,000 full-time equivalent students (FTES) on the Cal Poly Pomona main campus. The proposed Master Plan, with a planning horizon through year 2040 and subject to available funding, includes renovation of existing buildings (renovation), demolition and/or replacement of existing buildings in the same general physical location (replacement), minimal construction of new buildings on undeveloped sites at the core of campus (new construction), and retention of most buildings in their existing locations and configurations (buildings to remain). The proposed Master Plan would provide renovated, replacement, and new space for academic, student support services, housing, and athletic and recreational facilities, for a total net increase of approximately 600,000 gross square feet (GSF) of building space and approximately 1,040 net new beds. At buildout, there would be a total of approximately 6.6 million GSF of building space on the Cal Poly Pomona main campus.

In addition to renovation, replacement, and new construction, the proposed Master Plan also includes utility improvements. Specifically, this proposed Master Plan would involve the installation of a volatile organic compound (VOC) wellhead treatment system at one of Cal Poly Pomona's wells (Well 2) to expand the availability of source groundwater for potable use. It will include the repairs or replacement of existing controllers and sensors, and the upgrade of the Supervisory Control and Data Acquisition (SCADA) system and to add an additional reverse osmosis water treatment train to expand the system capacity to produce an additional 300,000 gallons per day (GPD) of domestic water. The system currently has capacity to treat 792,000 GPD.

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)).

The CSU determined that a WSA under SB 610 is not required for the proposed Master Plan because the CSU, as a state entity, is not required by law to prepare WSAs for projects undergoing CEQA review. CWC Section 10910 and the referenced CEQA provisions require only a "city or county," acting as a local lead agency under CEQA, to request a WSA and include it in a project EIR. However, the CSU determined that an WSE is warranted for the proposed Master Plan to assess water supplies and constraints related to the proposed Master Plan, based on the types of projects listed above that would require a WSA. Therefore, this WSE provides a discussion of whether the total projected water supplies available during normal, single dry, and multiple dry years during a 20-year projection would meet the projected water demand associated with the proposed Master Plan, in addition to existing and

planned future uses, including agricultural and manufacturing uses, similar to the requirements for a WSA under SB 610 (CWC Section 10910(b)(3) and (4)).

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. The proposed Master Plan is located within the service boundary for the Three Valleys Municipal Water District (TVMWD), which is considered a public water system (Figure 2).

1.3.2 Urban Water Management Plan Coverage

Every urban water supplier that either delivers more than 3,000 acre-feet (AF) of water annually or serves more than 3,000 connections is required to submit an UWMP to the California Department of Water Resources (DWR) every five years for review and approval. UWMPs must be updated and submitted to the California Department of Water Resources (DWR) every 5 years for review and approval.

An UWMP was created and submitted to DWR to satisfy 2020 requirements by TVMWD and contains detailed information about the urban water supplier's water supply and demand estimates. The 2020 UWMP serves as an update to the TVMWD's water resource needs, water use efficiency programs, water reliability assessment and strategies to mitigate water shortage conditions and builds upon the last UWMP that was submitted in 2015 (TVMWD 2021).

1.3.3 Groundwater as a Component of Project Water Supply

The proposed Master Plan will most likely be supplied by an existing on-site well on the Cal Poly Pomona main campus. Drinking water for Cal Poly Pomona is primarily served by one groundwater well (CPP 2024a) that draws from the San Gabriel Groundwater Basin - Spadra Subbasin (DWR Basin No. 4-013). Cal Poly Pomona has its own water treatment plant that treats the groundwater on-site. Cal Poly Pomona is the only University within the CSU system to operate its own water treatment plant and is a state certified water agency that is permitted to produce its own potable water. The reverse-osmosis facility is capable of producing up to 20,000 gallons of water per hour (CPP 2024a). Groundwater is an important water source for the region and it is assumed groundwater would be the sole water source for the proposed Master Plan. The groundwater resources at the Master Plan area are described in greater detail in Section 5, Water Resources, and water supply availability is discussed in Section 6, Reliability of Water Supplies.

1.3.4 Sufficiency of Supplies Over the Next 20 Years

As described in Section 6, Reliability of Water Supplies, and Section 7, Conclusion, there is adequate water available to supply the proposed Master Plan during normal, single dry, and multiple dry 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

2.1 Construction Water Demand

Water demand for the construction phase of the proposed Master Plan is estimated to be approximately 15 acre-feet per year (AFY), or a total of 225 AF over a 15-year buildout period. The primary use of water during construction is most often for soil compaction and dust control and is limited to use within the footprint of development. Concrete work and other general construction activities such as washing and worker needs add additional water demand. Construction for the proposed Master Plan is expected to occur in phases over a 15-year period, thus limiting construction-related water demand in any single year.

2.2 Operation and Maintenance Water Demand

Water demand for the operation and maintenance (O&M) phase can be forecast using recent Cal Poly Pomona water demand and using headcount forecasting for enrollment and population. Student enrollment at Cal Poly Pomona is measured using full-time equivalent students (FTES). At Cal Poly Pomona, one undergraduate FTES is equal to 15 units. FTES is generally the most appropriate measure of student population at the campus, as opposed to headcount, because it provides a more accurate representation of the population that will be on-campus at a given time. However, for the purposes of this WSE, student, faculty, and staff headcount is considered the preferred metric for purposes of analyzing population changes for a project of this nature and associated water demand from such population. Part-time students enrolling at Cal Poly Pomona could relocate from outside the area and would be considered new residents. Using headcount instead of FTES also allows for a more conservative water demand estimate so the appropriate parties can better plan their water supply.

Table 1. Population Increase Projections with Proposed Master Plan

	Existing Campus Population (Fall 2023)	Master Plan Buildout Projected Campus Population	Net Increase
Student Population			
Students (FTES)	22,847	30,000	7,153
Students (Headcount)[a]	26,415	34,500	8,085
Staff and Faculty Population			
Staff and Faculty (FTE)	2,231	2,941	710
Staff and Faculty (Headcount)[b]	2,762	3,641	879
Total Headcount Population	**29,177**	**38,141**	**8,964**

Source: CPP 2024b and 2024c.

Notes:

[a] The projected student headcount was based on existing ratios of FTES to headcount, calculated as follows: Student Headcount = 1.15 * X FTES.

[b] The projected staff and faculty headcount was based on existing ratios of FTE to headcount, calculated as follows: Staff and Faculty Headcount = 1.238001 * X FTE.

Cal Poly Pomona estimates that the current water use on a typical school day is 489,000 GPD or 548 AFY, which would increase with the proposed Master Plan (CPP 2024a). Using the Fall 2023 headcount population for both students and faculty (Table 1), the current campus water demand is estimated at approximately 16.76 GPD per person (489,000 GPD/29,177 total population). With the expected total increase in student, faculty, and staff headcount of 8,964, the increase in water demand as a result of the proposed Master Plan would be 150,237 GPD or 168 AFY (16.76 GPD X 8,964 net increase in population). Total water use for Cal Poly Pomona after buildout of the proposed Master Plan would be approximately 639,243 GPD or 717 AFY (489,000 GPD current water demand + 150,237 GPD increase in demand with proposed Master Plan).

2.3 Total Water Demand and Capacity

Table 2 shows the total net-increase in water demand for the construction phase and the O&M phase of the proposed Master Plan. This WSE assumes that water demand for the construction phase will take place prior to 2040 and the O&M phase will begin in 2040 once the buildout phase is completed.

Table 2. Projected Net-Increase in Water Demand for the Proposed Master Plan

Parameter	Projected (AFY) [a]				
	2025	2030	2035	2040	2045
Construction and O&M Water Demand	15	15	15	168	168

Notes: AF = acre-feet; 1 acre-foot = 325,851 gallons.

[a] Water demand is estimated to average 15 AFY for construction activities from 2025 to 2040. Water demand from 2040 assumes proposed Master Plan buildout and full net increase in Cal Poly Pomona population as a result of the proposed Master Plan.

The current capacity of potable water system for Cal Poly Pomona is 792,000 GPD or approximately 887 AFY. With the system upgrades, the capacity is anticipated to increase 300,000 GPD for a total of approximately 1,223 AFY once the proposed Master Plan is completed (Table 3). Given the total campus water demand projection of 717 AFY once the proposed Master Plan is complete, Cal Poly Pomona will be able to meet the increased demand with the infrastructure upgrades outlined in the proposed Master Plan (Table 3).

Table 3. Comparison of Capacity and Water Demand before and after Proposed Master Plan

Parameter	Actual and Projected (AFY)	
	2023 [a]	2040 [b]
Total Capacity	887	1,223
Total Demand	548	717

Notes: AF = acre-feet; 1 acre-foot = 325,851 gallons.

[a] Current capacity and water demand estimated by Cal Poly Pomona as of Fall 2023.

[b] Projected capacity and water demand as a result of the proposed Master Plan.

3 Climate

The Master Plan area is characterized by a Mediterranean climate with hot, dry summers and mild, wet winters in which the majority of precipitation falls. The average maximum temperature in the proposed Master Plan vicinity, based on temperature data recorded at the Pomona Fairplex, California, weather station (station no. 047050), for the period from 1893 to 2016 is 77.5 degrees Fahrenheit (°F) and the average minimum temperature is 47.6 °F (WRCC 2024). The average annual precipitation at the Pomona Fairplex weather station for the period from 1893 to 2016 is approximately 16.97 inches (WRCC 2024).

Projected future climate conditions in California indicate gradual warming, with an increase in extremely hot days relative to historical norms, and greater year-to-year precipitation variability. Warming of approximately 3.6 °F to 12.6 °F is expected by the end of the century (Pierce et al. 2018). Additionally, projections anticipate that there will be fewer wet days, but increased precipitation on the wettest days (i.e., wetter winters and drier springs and autumns), 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, Reliability of Water Supplies, which includes an assessment of total projected water supplies during normal, single dry, and multiple dry years during a 20-year projection.

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4 Water Resource Plans and Programs

4.1 Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act (SGMA) of 2014 is a package of three bills (Assembly Bill 1739, SB 1168, and SB 1319) that provides local agencies with a framework for managing groundwater basins in a sustainable manner. SGMA establishes minimum standards for sustainable groundwater management, roles and responsibilities for local agencies that manage groundwater resources, and timelines to achieve sustainable groundwater management within 20 years of adoption of a GSP. Central to SGMA are the identification of critically overdrafted basins, prioritization of groundwater basins, establishment of groundwater sustainability agencies (GSA), and preparation and implementation of GSPs for medium- and high-priority basins. SGMA required GSAs to be formed by June 30, 2017. GSPs must consider all beneficial uses and users of groundwater in the basin, as well as include measurable objectives and interim milestones that ensure basin sustainability. A basin may be managed by a single GSP or multiple coordinated GSPs. At the state level, DWR has the primary role in the implementation, administration, and oversight of SGMA, with the State Water Resources Control Board (SWRCB) stepping in should a local GSA be found to not be managing groundwater in a sustainable manner. GSAs must follow DWR's approved regulations and guidelines for implementation of SGMA.

Cal Poly Pomona's domestic water wells are tapped into the San Gabriel Valley Groundwater Basin – Spadra Subbasin. The San Gabriel Valley Groundwater Basin was adjudicated in 1973 and divided into six Basin areas with a Watermaster appointed for each to manage the operating safe yield. Adjudicated basins are not subject to SGMA as their operating guidelines are court-ordered. The Spadra Subbasin (herein referred to as the Basin), where Cal Poly Pomona wells draw their water, is a small, very-low priority, non-adjudicated subbasin within the larger San Gabriel Valley Groundwater Basin (Spadra Basin GSA 2022). The Basin was unregulated and is also not subject to SGMA, however, the Spadra Basin GSA was formed in 2017 by the City of Pomona and the Walnut Valley Water District (WVWD) in order to better maintain the water supply. Cal Poly Pomona is not a member of the GSA due to being a stakeholder. A GSP was submitted to DWR by the Spadra Basin GSA in 2022 and is currently awaiting review as of January 2024 (DWR 2024a).

4.2 Urban Water Management Planning Act

The Urban Water Management Planning Act (CWC Sections 10610–10657) requires urban water suppliers to prepare a UWMP every 5 years and to submit it to the DWR, the California State Library, and any city or county within which the supplier provides water supplies. All urban water suppliers, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet (AF) annually are required to prepare a UWMP (CWC Section 10617). As Cal Poly Pomona relies on TVMWD for some of its water supply, supply and demand projections for TVMWD are presented in Section 6, Reliability of Water Supplies.

The Urban Water Management Planning Act was enacted in 1983. Over the years, it has been amended in response to water resource challenges and planning imperatives confronting California. A significant amendment was made in 2009 as a result of the governor's call for a statewide 20% reduction in urban water use by 2020, referred to as "20x2020," the Water Conservation Act of 2009, and "SB X7-7." This amendment required urban retail water suppliers to establish water use targets for 2015 and 2020 that would result in statewide water savings of 20% by

2020. Beginning in 2016, urban retail water suppliers were required to comply with the water conservation requirements in SB X7-7 in order to be eligible for state water grants or loans.

A subsequent substantial revision to the Urban Water Management Planning Act was made in 2018 through a pair of bills (i.e., Assembly Bill 1668 and SB 606), described below in Section 4.3, Water Use Efficiency Standards. These changes include, among other things, additional requirements for Water Shortage Contingency Plans, expansion of dry-year supply reliability assessments to a 5-year drought period, establishment of annual drought risk assessment procedures and reporting, and new conservation targets referred to as "annual water use objectives," which will require retailers to continue to reduce water use beyond the 2020 SB X7-7 targets. The Urban Water Management Planning Act contains numerous other requirements that a UWMP must satisfy.

4.3 Water Use Efficiency Standards

The Water Conservation legislation of 2018 (SB 606 and Assembly Bill 1668) — referred to as "Making Water Conservation a California Way of Life" or the "2018 Water Conservation Legislation"— established a new foundation for long-term improvements in urban water supplier conservation and drought planning in order to adapt to climate change and the longer more intense droughts in California. Together, Assembly Bill 1668 and SB 606 lay out a new long-term water conservation framework for California. This new framework is far-reaching for both the urban and agricultural sectors of California and represents a major shift in focus. Programs and initiatives are organized around four primary goals:

1. Use water more wisely
2. Eliminate water waste
3. Strengthen local drought resilience
4. Improve agricultural water use efficiency and drought planning

Collectively, this legislation provides a road map for all Californians to work together to ensure that we will have enough water now and, in the years, ahead. One of the major outcomes of the legislation is the adoption of long-term standards for the efficient use of water and performance measures for commercial, industrial, and institutional water use on or before June 30, 2022. The bill establishes a standard for indoor water use of 55 gallons per capita daily to be reached by 2025, 52.5 gallons per capita daily beginning in 2025, decreasing to 50 gallons per capita daily beginning in 2030, or an alternative to this standard as determined jointly by DWR and State Water Resources Control Board in accordance with necessary studies and investigations.

On July 8, 2021, the Governor signed Executive Order N-10-21 which asks Californians to voluntarily reduce water use by 15% from 2020 levels. The Executive Order was in direct response to California experiencing the second driest year on record and the ongoing drought.

On January 4, 2022, the State Water Resources Control Board adopted an emergency regulation that prohibits certain wasteful water use practices statewide and encourages Californians to monitor their water use more closely while building habits to use water wisely.

4.4 Water Shortage Contingency Plan

TVMWD includes a water shortage contingency plan within their UWMP that presents how the water supplier will respond in the event of an actual water shortage contingency. The main points are summarized below:

1. Beginning in 2022, TVMWD is required to submit an Annual Assessment reviewing unconstrainted water demands for the current year and the potential upcoming single dry year.
2. TVMWD will incorporate multiple standard water shortage levels into their management plans ranging from 10% to greater than 50%.
3. Customers will be required to reduce their consumption levels by the percentage specified in the plan.
4. Increased tracking of customer water usage and outdoor usage restrictions.
5. Emergency Response Plan

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5 Water Resources

5.1 Surface Water

Cal Poly Pomona does not rely on any local surface water to meet its demands.

5.2 Groundwater

As discussed previously, the proposed Master Plan overlies the San Gabriel Groundwater Basin - Spadra Subbasin. The Basin is a small, unconfined, alluvial aquifer system that covers approximately 4,200 acres (Figure 3: City of Pomona 2021). The Basin is surrounded by four adjudicated groundwater basins consisting of the Chino Basin to the east, the Main San Gabriel Basin to the northwest, the Puente Basin to the west, and the Six Basins to the north. Groundwater from the Basin is primarily pumped by Cal Poly Pomona, Walnut Valley Water District (WVWD), and the City of Pomona (City of Pomona 2021). The estimated total storage capacity of the Basin is 26,000 AF. Recharge to the Basin is from natural precipitation and is considered poor due to urbanization and the concrete lining of San Jose Creek which is the main draining of the Basin.

The geology within the Master Plan area consists of Tertiary-Cretaceous marine sedimentary and metasedimentary rocks and Pleistocene-Holocene marine and nonmarine (continental) sedimentary rocks (Figure 4).

5.2.1 On-Site Well Inventory and Groundwater Levels

Cal Poly Pomona has four groundwater wells: one for drinking water and the other three for irrigation. One of the irrigation wells is currently inactive. Water for the proposed Master Plan is assumed to be supplied from the existing on-site well (Figure 5).

Nearby groundwater well information was pulled from various data sources: SWRCB's Groundwater Ambient Monitoring and Assessment Program (GAMA), the U.S. Geological Survey's (USGS) National Water Information System (NWIS), and DWR's SGMA Data Viewer Wells. According to these data sources, there is one State Well (State Well No. 09S08E14G001M) within the proposed Master Plan boundary (Figure 5). Groundwater levels were last measured in State Well No. 09S08E14G001M on March 4, 1966, when the depth to groundwater was 16.9 feet below the ground surface at an elevation of 205.79 feet (DWR 2024b).

Groundwater levels within the Basin vary greatly due to subsidence (i.e., the gradual sinking or settling of the ground surface), which can be attributed to groundwater pumping below the clay layer. Subsidence is most prominent in the southeastern area of the Basin and is generally not an issue near the Master Plan area.

5.2.2 Groundwater Quality

According to the 2022 GSP:

> Spadra Basin groundwater is used primarily for non-potable uses by the overlying water purveyors because of the general poor quality of groundwater. Groundwater from Spadra Basin that is used for potable supply often requires treatment or blending prior to use to comply with Division of Drinking Water drinking-water standards.

Groundwater data between 2000 and 2019 from 39 wells was analyzed for exceedances of regulatory standards as part of the GSP process. In one or more wells, there are 17 constituents that exceed a primary maximum contaminant level, five constituents that exceed a secondary maximum contaminant level, three constituents that exceed a notification level, and four constituents that exceed a Basin Plan objective (Spadra Basin GSA 2022).

Groundwater quality from water imported from the Metropolitan Water District of Sothern California (MWD) and water from Cal Poly Pomona's wells was analyzed in a 2023 Cal Poly Pomona water quality treatment report. The water was tested to meet regularity requirements for drinking water from January 1 to December 31, 2023. Of all the constituents analyzed from both water sources, none were above the maximum contaminant levels (MCL) indicating good water quality after treatment (CPP 2024c). Cal Poly Pomona treats all water for potable use using their on-site water treatment facility.

5.3 Imported Water and Wastewater/Recycled Water

Imported water is purchased by Cal Poly Pomona through the designated wholesale water agency, TVMWD, to blend with groundwater supplied by Cal Poly Pomona's wells to meet water quality requirements (CPP 2024d). Under the proposed Master Plan, imported water from TVMWD would be used only as an emergency backup. TVMWD receives its water from the MWD. MWD imports and treats surface water transported through two major conveyance systems: the 242-mile-long Colorado River Aqueduct and the 444-mile-long State Water Project (SWP). MWD treats this imported water at its Weymouth Filtration Plant in the City of La Verne.

The SWP is designed as a water storage and delivery system composed of reservoirs, aqueducts, power plants, and pumping plants. The main purpose is to store water and distribute it to urban and agricultural water suppliers in Northern California, the San Francisco Bay Area, the San Joaquin Valley, the Central Coast, and Southern California (CDFW 2024).

5.4 Recycled Water

TVMWD does not rely on wastewater or recycled water to meet the needs of their purchaser. However, Cal Poly Pomona has been using recycled water for crop irrigation and landscaping since 1965 (CPP 2025). An estimated 97% of the campus is irrigated with the use of recycled water.

6 Reliability of Water Supplies

6.1 Cal Poly Pomona Supply

Cal Poly Pomona is not considered an urban water supplier and is not required to submit an UWMP, however, the Spadra Basin GSP contains actual and projected water supply numbers for Cal Poly Pomona (Table 4; Spadra Basin GSA 2022).

Table 4. Current and Projected Water Supply for Cal Poly Pomona

	Actual (AF)	Projected (AF)				
Water Sources	2020	2025	2030	2035	2040	2045
Spadra Basin	591	817	856	856	856	856
Imported Water Purchased from TVMWD	118	43	9	9	9	9
Recycled Water	911	1,000	1,000	1,000	1,000	1,000
Total	**1,621**	**1,860**	**1,865**	**1,865**	**1,865**	**1,865**

Source: Spadra Basin GSA 2022
Notes: AF = acre-feet; 1 acre-foot = 325,851 gallons.

Projections from 2025 onward indicate reliance primarily on groundwater pumped from the Basin and a reduction of water purchased from TVMWD. This has been verified by Cal Poly Pomona as they have indicated a desire to use local water sources as opposed to relying on imported water. Under the proposed Master Plan, imported water from TVMWD would be used only as an emergency backup.

6.2 TVMWD Demand and Supplies

Because Cal Poly Pomona is within the service boundary of TVMWD and relies on them for imported water from the MWD, the water supply and demand projections from the 2020 TVMWD UWMP are analyzed in this WSE. Actual and projected water demand and supplies for TVMWD are provided in Tables 5 through Table 7. These projections were taken from the 2020 UWMP and show the actual and projected supply and demand estimates for a normal water year in 5-year increments. Table 8 and Table 9 show the estimates for a single dry year and multiple dry years, respectively. The supply and demand differences are zero as TVMWD only supplies the amount of water necessary to serve the demand in any given year.

Table 5. Current and Projected Water Demand for Normal Year for TVMWD

	Actual (AF)	Projected (AF)				
Water Sources	2020	2025	2030	2035	2040	2045
Demand						
Sales to Other Agencies	60,031	45,394	45,304	45,194	45,010	44,806
Groundwater Recharge	14,523	10,982	10,960	10,934	10,889	10,840
Other Potable	2,169	1,640	1,637	1,633	1,626	1,619
Total	**76,723**	**58,016**	**57,901**	**57,761**	**57,525**	**57,265**

Source: TVMWD 2021

Notes: AF = acre-feet; 1 acre-foot = 325,851 gallons.

Table 6. Current and Projected Water Supply for Normal Year for TVMWD

Water Sources	Actual (AF)	Projected (AF)				
	2020	2025	2030	2035	2040	2045
Supply						
Groundwater (not desalinated)	1,200	2,500	3,000	3,000	3,000	3,000
Purchased or Imported Water	73,354	52,516	51,401	51,261	51,025	50,765
Other Potable	2,169	3,000	3,500	3,500	3,500	3,500
Total	**76,723**	**58,016**	**57,901**	**57,761**	**57,525**	**57,265**

Source: TVMWD 2021
Notes: AF = acre-feet; 1 acre-foot = 325,851 gallons.

Table 7. Projected Water Supply and Demand Comparison for Normal Year for TVMWD

Supply/Demand	Projected (AF)				
	2025	2030	2035	2040	2045
Total Water Demand	58,016	57,901	57,761	57,525	57,265
Total Potable Supply	58,016	57,901	57,761	57,525	57,265
Difference	0	0	0	0	0

Source: TVMWD 2021
Notes: AF = acre-feet; 1 acre-foot = 325,851 gallons.

Table 8. Projected Water Supply and Demand Comparison for Single Dry Year for TVMWD

Supply/Demand	Projected (AF)				
	2025	2030	2035	2040	2045
Total Water Demand	57,344	57,230	57,091	56,859	56,601
Total Potable Supply	57,344	57,230	57,091	56,859	56,601
Difference	0	0	0	0	0

Source: TVMWD 2021
Notes: AF = acre-feet; 1 acre-foot = 325,851 gallons.

Table 9. Projected Water Supply and Demand Comparison for Multiple Dry Years for TVMWD

		Projected (AF)				
		2025	2030	2035	2040	2045
First Year	Supply Totals	54,248	54,140	54,009	53,789	53,545
	Demand Totals	54,248	54,140	54,009	53,789	53,545
	Difference	0	0	0	0	0
Second Year	Supply Totals	59,906	59,787	59,642	59,399	59,130

Table 9. Projected Water Supply and Demand Comparison for Multiple Dry Years for TVMWD

	Projected (AF)					
		2025	2030	2035	2040	2045
	Demand Totals	59,906	59,787	59,642	59,399	59,130
	Difference	0	0	0	0	0
Third Year	Supply Totals	62,156	62,032	61,882	61,630	61,350
	Demand Totals	62,156	62,032	61,882	61,630	61,350
	Difference	0	0	0	0	0
Fourth Year	Supply Totals	52,212	52,108	51,981	51,770	51,535
	Demand Totals	52,212	52,108	51,981	51,770	51,535
	Difference	0	0	0	0	0
Fifth Year	Supply Totals	48,122	48,026	47,910	47,715	47,498
	Demand Totals	48,122	48,026	47,910	47,715	47,498
	Difference	0	0	0	0	0

Source: TVMWD 2021
Notes: AF = acre-feet; 1 acre-foot = 325,851 gallons.

In each of the projection scenarios (normal year, single-dry year, multiple-dry years), TVMWD anticipates being able to meet the supply needs within their service boundary. Since TVMWD relies on purchasing water from MWD for the majority of their supply, they are reliant on MWD to allocate water appropriately. MWD adopted a Water Supply Allocation Plan in 2008 in order to manage its supplies to member agencies that involves reduction levels based on extended periods of drought (TVMWD 2021). Similar to the Water Shortage Contingency Plan described in Section 4, Water Resource Plans and Programs, this involves a reduction of water supply from 5 to 50%to member agencies in order to maintain sustainable delivery. Within the TVMWD service area, population growth is expected to increase approximately 9.37% from 2020 to 2045 (Table 10).

Table 10. TVMWD Service Area Population Projections

Population Served	2020	2025	2030	2035	2040	2045
	513,623	523,167	532,888	542,790	552,204	561,782

Source: TVMWD 2021

6.3 Spadra Basin Groundwater Supply and Demand

The Basin is currently not artificially replenished by its users including Cal Poly Pomona, WVWD, and the City of Pomona. The aquifers rely on replenishment strictly from deep percolation and subsurface inflows and outflows (City of Pomona 2021). Despite this, the City of Pomona has used climate tools provided by the California Energy Commission to identity future climate change cycles for the Basin. The City used a Representative Concentration Pathway 4.5 scenario and average conditions for General Circulation Models. Both of these choices represent a moderate climate change forecast and not an extreme scenario. Based on the simulations, annual rainfall within the Basin is projected to be 18.73 inches through 2045, compared to the historical average of 16.99 inches (from 1950 to 2019). While it is difficult to forecast intensity of future rainfall, the indication of increased precipitation is positive for the Basin that requires percolation (City of Pomona 2021).

Cal Poly Pomona, WVWD, and the City of Pomona are historic pumpers of groundwater from the Basin. Table 11 shows the actual amount of groundwater pumped from the Basin from 2019 and 2020 as well as projected pumping demand from 2025 to 2045 for all three water purveyors. According to the projections, all water purveyors show increased groundwater pumping from 2025 to 2045 when compared to the average of groundwater pumped from 2019 and 2020 (with the exception of WVWD in 2020).

Table 11. Actual and Projected Groundwater Supply from the Spadra Basin 2019 2045

Water Purveyor	Actual and Projected Supply (AF)						
	2019	2020	2025	2030	2035	2040	2045
Cal Poly Pomona	735	591	817	856	856	856	856
WVWD	53	110	105	105	105	105	105
City of Pomona	0	0	1,000	845	845	845	845
Total	**788**	**701**	**1,922**	**1,806**	**1,806**	**1,806**	**1,806**

Source: WVWD 2021, City of Pomona 2021
Notes: AF = acre-feet; 1 acre-foot = 325,851 gallons.

A groundwater model was created for the Basin as part of the GSP process to determine the annual developed yield (also known as sustainable yield). This estimate is based on historical data from 1978 to 2018 and represents the average annual amount of groundwater that can be extracted without leading to adverse effects. According to the Spadra Basin GSP, the Basin's annual developed yield is estimated to be approximately 1,430 AFY based on data from 1978 to 2018. Between 2019 and 2079 the annual developed yield is anticipated to increase to an average of 1,622 AFY (Spadra Basin GSA 2022). Projected annual developed yield compared to projected groundwater pumping estimates within the Basin during the buildout period for the proposed Master Plan can be seen in Table 12.

Table 12. Projected Annual Developed Yield

Parameter	Projected (AF)				
	2025	2030	2035	2040	2045
Annual Developed Yield	1,236	1,543	1,655	1,699	1,713
Groundwater Pumping	1,922	1,806	1,806	1,806	1,806
Difference	**-686**	**-263**	**-151**	**-107**	**-93**

Source: Spadra Basin GSA 2022
Notes: AF = acre-feet; 1 acre-foot = 325,851 gallons.

In each of the projected years, the pumping is anticipated to be greater than the annual developed yield indicating a potential for Basin overdraft, however, the path to a sustainable yield for the Basin is shown to increase over time.

According to the 2022 GSP, Spadra Basin stakeholders used the model results of the Baseline Scenario to guide the development of several projects and management actions to achieve sustainability. These projects were split

into three scenarios that include the use of surplus recycled water from the Pomona Water Reclamation Plant to achieve the objectives of the scenarios. The Basin Optimization Scenarios are as follows:

- Basin Optimization Scenario 1 - Sustainability through Substitution. This scenario includes reduced groundwater pumping and additional recycled water reuse.
- Basin Optimization Scenario 2 - Sustainability through Recharge. This scenario includes artificial recharge of 500 AFY of recycled water. Executive Summary K-C-954-80-20-01-WP-R ES-7 Spadra Basin Groundwater Sustainability Agency Groundwater Sustainability Plan for the Spadra Basin January 2022
- Basin Optimization Scenario 3 - Maximum Beneficial Use. This scenario includes artificial recharge of 3,500 AFY of recycled water, increasing production by a similar amount, and expansion of the CPP reverse osmosis plant. The pumped groundwater will be treated at the plant and used for potable water supplies, which reduces the demand for imported water and increases potable water-supply reliability.

The model evaluation of the Basin Optimization Scenario 3 indicates that the Sustainability Goal will be achieved within 20 years and throughout the rest of the planning horizon through implementation of the projects envisioned in Basin Optimization Scenario 3. This scenario is the recommended scenario for GSP implementation.

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7 Conclusion

As stated in CWC Section 10910(c)(3), if the projected water demand associated with a project was not accounted for in the most recently adopted UWMP, or the public water system has no UWMP, the water supply assessment for the project shall include a 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, including agricultural and manufacturing uses.

Cal Poly Pomona supplies a majority of potable water from the on-site well and water treatment facility, however, they are not a public water supplier and are not required to complete an UWMP. Since the proposed Master Plan exists within the boundary of TVMWD, and Cal Poly Pomona receives a portion of their water supply from TVMWD, projections from the TVMWD 2020 UWMP were used to identify supply and demand projections alongside projections from the Spadra Basin GSP. The Spadra Basin GSP includes historical and projected groundwater pumping estimates for the three water purveyors that rely on the Basin for water supply (Cal Poly Pomona, WVWD, and the City of Pomona).

The previous sections of this WSE discuss these factors and are summarized below:

- The proposed Master Plan update would provide facility, space, and infrastructure improvements to support a planned enrollment of approximately 30,000 full-time equivalent students (34,500 headcount) and associated staff and faculty (3,641 headcount) for a net increase of 8,964 headcount students, faculty and staff.
- Water supply for Cal Poly Pomona is currently a mix of groundwater pumped from Well 1 from the Spadra Basin and imported water purchased from TVMWD. The imported water is blended with CPP's groundwater to meet water quality requirements. As part of the proposed Master Plan, an additional, existing well (Well 2) would contribute to Cal Poly Pomona's water supply to serve the increased student, faculty and staff population and imported water from TVMWD would be used only as an emergency backup.
- The Spadra Basin is a small, very-low priority, groundwater basin that provides groundwater supply for Cal Poly Pomona, WVWD, and the City of Pomona.
- The estimated total water demand for the construction phase of the proposed Master Plan is 225 AF and 168 AFY for the O&M phase.
- Based on projections from the 2022 GSP, the Basin is currently in overdraft, which will continue if all the water purveyors use their estimated pumping projections. The annual developed yield is expected to rise over time (see Table 11) and sustainability may be met if the water purveyors do not use all their expected pumping projections.
- The GSP outlines a path to Basin sustainability if project and management actions are implemented. These actions rely heavily on using recycled water and artificial recharge.

Based on the water demand estimates in Section 2, Project Water Demand, Cal Poly Pomona will be able to meet drinking water demands for the increased headcount population, as a result of the proposed Master Plan increasing potable water capacity systems. These include the installation of a volatile organic compound (VOC) wellhead treatment system at Well 2 to expand the availability of source groundwater for potable use and adding an additional reverse osmosis water treatment train to expand the system capacity. It is estimated that the proposed

Master Plan will require 225 AF in total for the construction phase and increase Cal Poly Pomona's total water demand by 168 AFY starting in 2040.

Once the proposed Master Plan buildout is complete, the total demand for Cal Poly Pomona is estimated to be 717 AFY (Table 3). This estimate is 139 AFY less than the projected 856 AFY projections that the 2022 GSP anticipates Cal Poly Pomona will pump from the Spadra Basin (Table 11), however, Section 6, Reliability of Water Supplies, describes the Basin as currently in overdraft as of 2020 and will continue to be in overdraft if all three water purveyors pump water according to the GSP projections. By 2040, the annual developed yield is anticipated to increase due to a reduction of pumping from the City of Pomona and the potential for greater precipitation events.

Assuming Cal Poly Pomona, the City of Pomona, and WVWD can manage their pumping from the Basin to be below projections, the Basin will be able to support their demands, however, the 2022 GSP discusses the need for the development of several projects and management actions to achieve a higher probability of sustainability and recommends Basin Optimization Scenario 3. This scenario includes artificial recharge of 3,500 AFY of recycled water, increasing production by a similar amount, and expansion of the CPP reverse osmosis plant. The pumped groundwater will be treated at the plant and used for potable water supplies, which reduces the demands for imported water and increases potable water-supply reliability. This scenario will be critical for the Basin to achieve a sustainable yield.

As of January 2024, the Spadra Basin GSP has not been reviewed by DWR as DWR has focused on medium and high-priority basins. The future review and comments by DWR may influence the results of this WSE, however, it is a positive sign that the Spadra Basin GSA took initiative to prepare a GSP to help achieve sustainability for groundwater users within the Basin. Based on the available information, the proposed Master Plan is expected to have sufficient water available from the Basin during normal, single dry, and multiple dry years over a 20-year projection, especially if project and management actions can be implemented in the near future.

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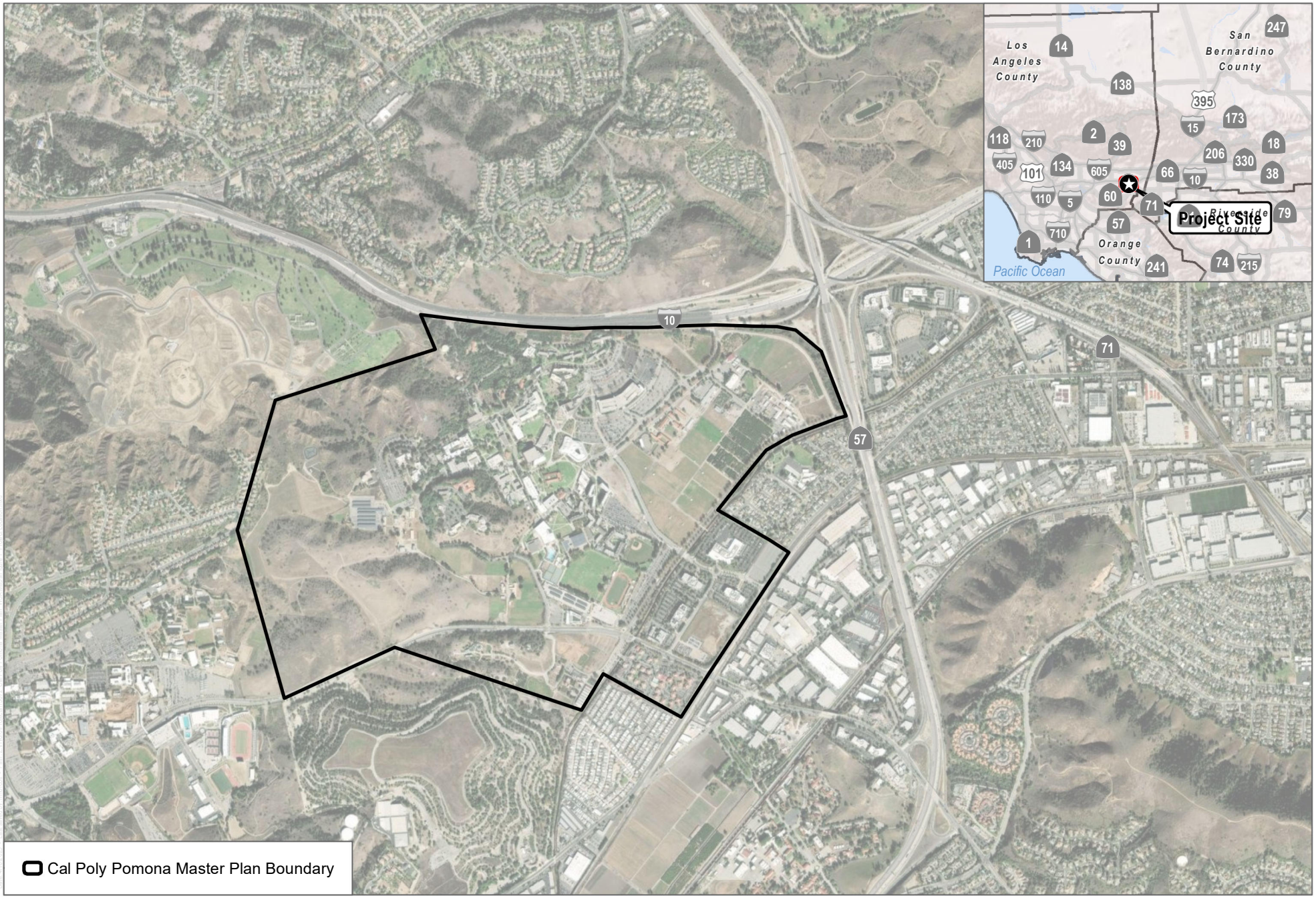

SOURCE: ESRI

DUDEK

0 1,750 3,500 Feet

FIGURE 1

Project Location

Cal Poly Pomona Campus Master Plan Update - Water Supply Evaluation

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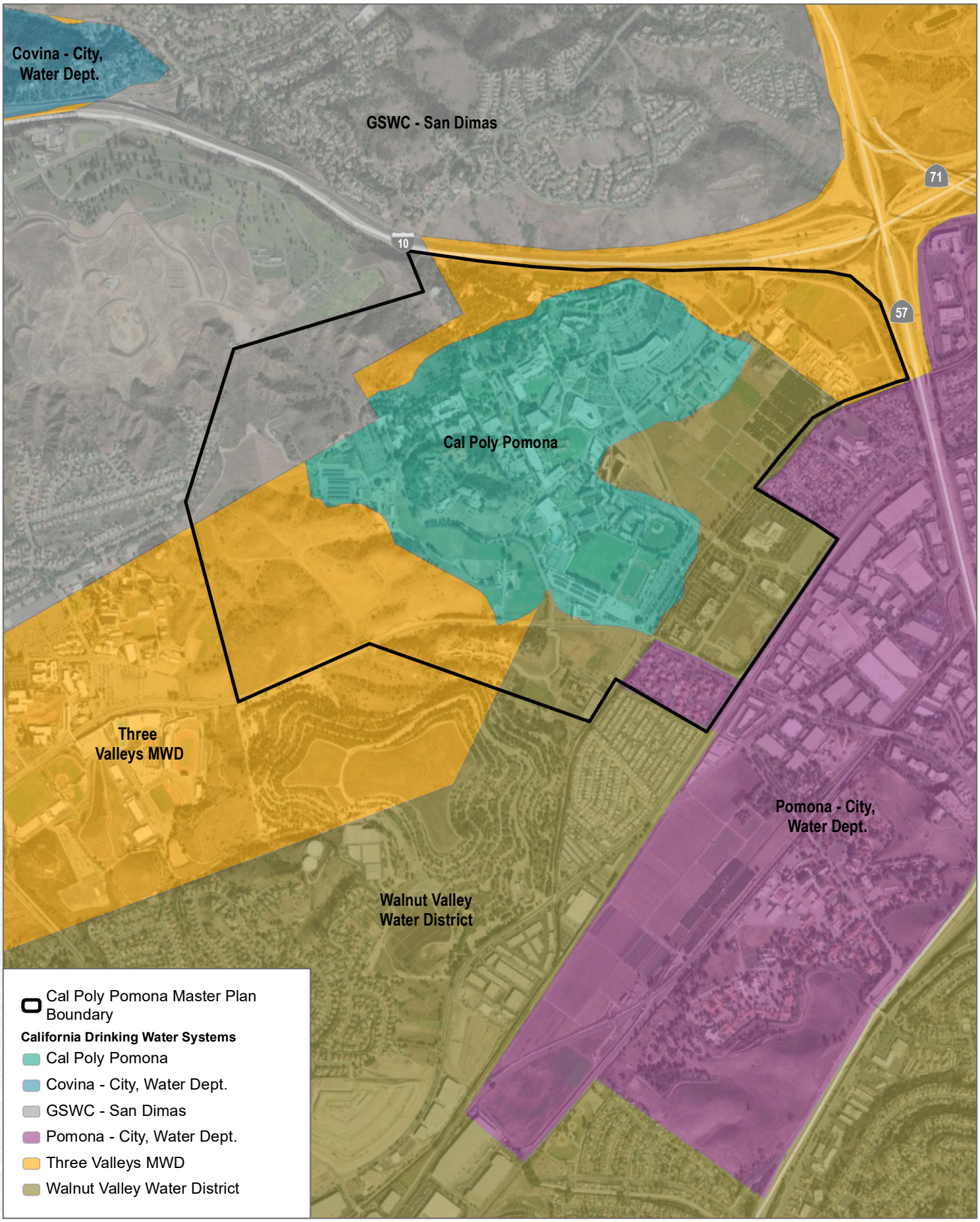

SOURCE: ESRI; DWR

DUDEK

0 1,000 2,000 Feet

FIGURE 2

Drinking Water Systems

Cal Poly Pomona Campus Master Plan Update - Water Supply Evaluation

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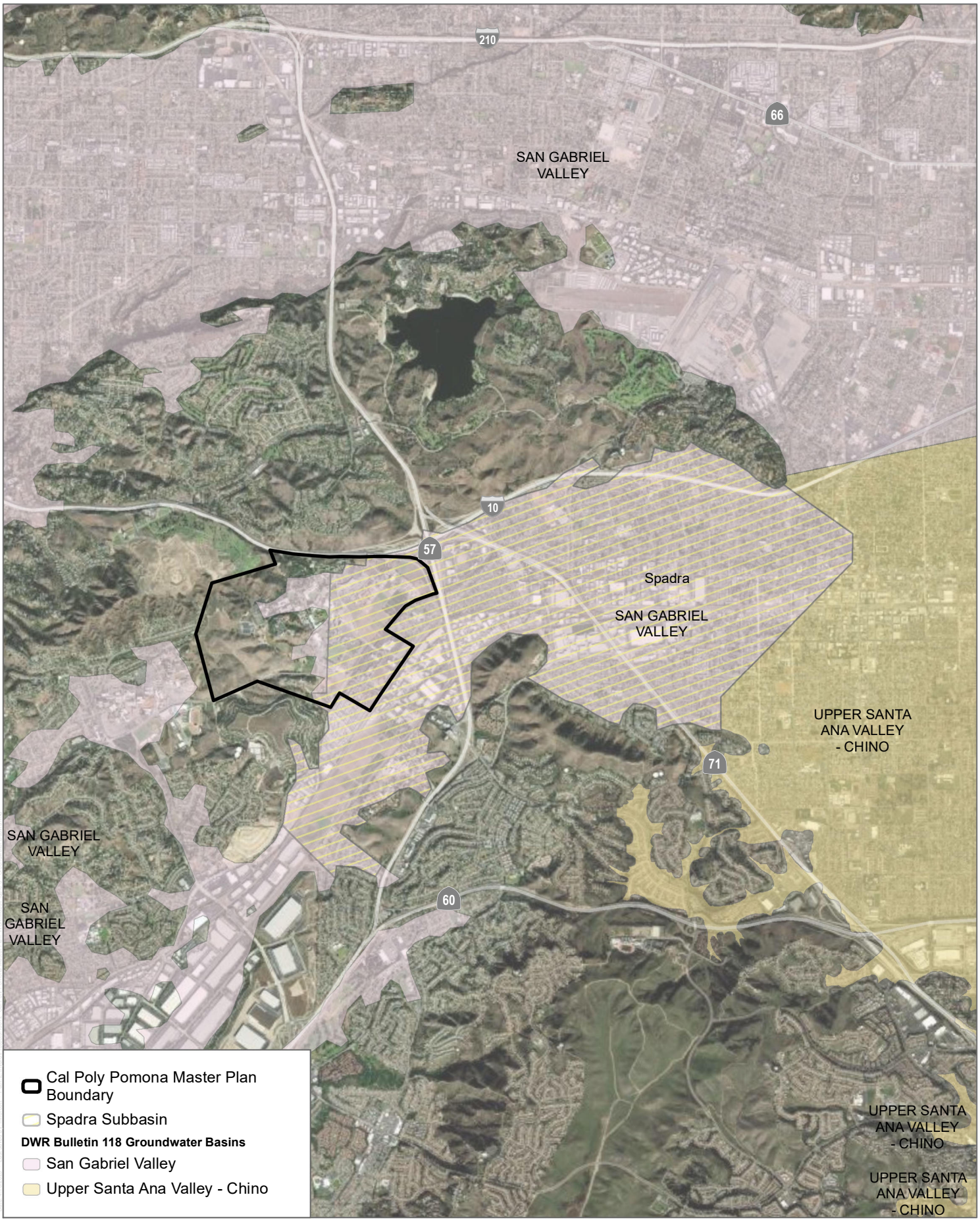

SOURCE: ESRI; DWR

DUDEK

0 5,000 10,000 Feet

FIGURE 3

Groundwater Basins

Cal Poly Pomona Campus Master Plan Update - Water Supply Evaluation

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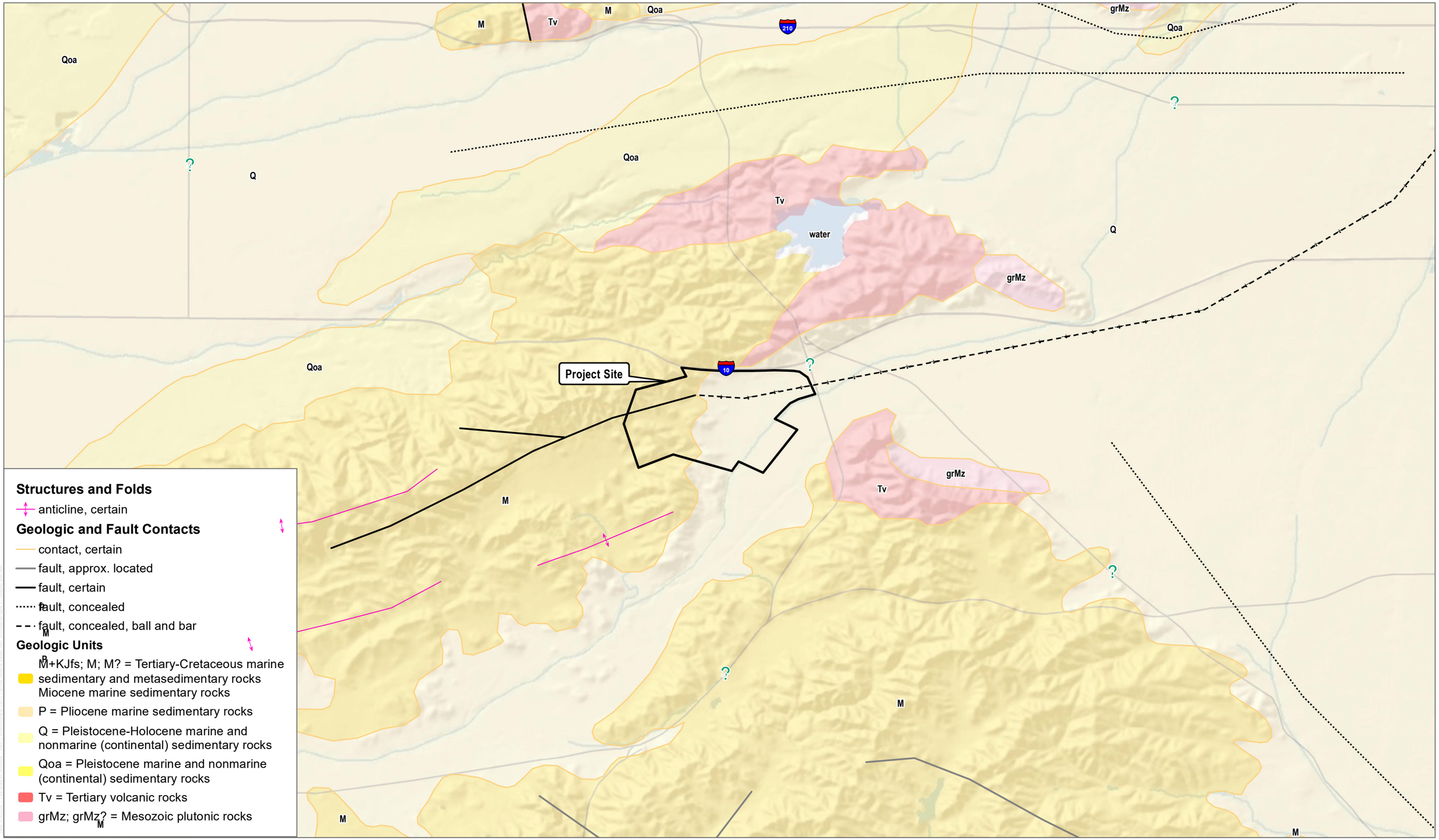

SOURCE: California Geologic Survey 2010

DUDEK

0 1 2 Miles

FIGURE 4

Geologic Map

Cal Poly Pomona Campus Master Plan Update - Water Supply Evaluation

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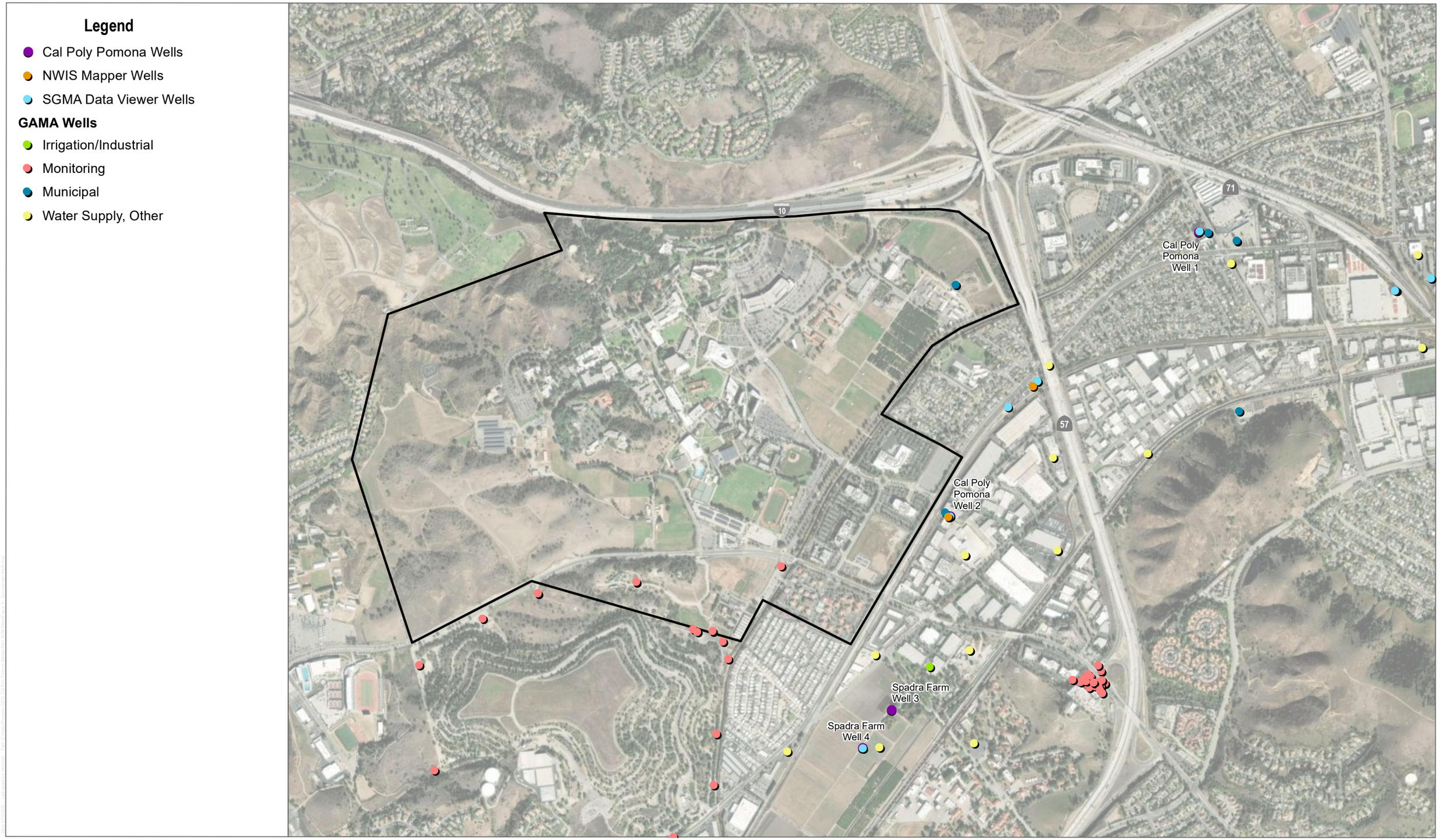

SOURCE: ESRI; DWR, USGS, SWRCB

DUDEK

0 600 1,200 Feet

FIGURE 5

Groundwater Wells

Cal Poly Pomona Campus Master Plan Update - Water Supply Evaluation

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