
APPENDIX K

WATER SUPPLY ASSESSMENT

PACIFIC GATEWAY

SAN JOAQUIN COUNTY,
CALIFORNIA

August 2025



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Table of Contents

1.	INTRODUCTION	1
1.1.	BACKGROUND	2
1.2.	PURPOSE AND ORGANIZATION	2
2.	WATER DEMANDS	3
2.1.	CLIMATE	3
2.2.	POPULATION	3
2.3.	CURRENT SITE WATER USE	4
2.4.	PROPOSED PROJECT WATER DEMAND	4
3.	WATER SUPPLY	7
3.1.	CURRENT SITE WATER SUPPLY OVERVIEW	7
3.2.	PROPOSED PROJECT WATER SUPPLY	7
3.3.	GROUNDWATER SUPPLY	9
3.4.	RECYCLED WATER	14
3.5.	PROPOSED PROJECT WATER SUPPLY	15
3.6.	CURRENT AND PROJECTED GROUNDWATER DEMAND FOR THE REGION	16
4.	COMPARISON OF SUPPLY AND DEMAND	18
5.	CONCLUSIONS	20
6.	REFERENCES	21

Tables

Table 1. Climate Data

Table 2. Population Projections

Table 3. Existing Site Water Demand

Table 4. Project Phasing

Table 5. Project Water Demands

Table 6. Maximum Recycled Water Supply to Meet Irrigation Demands

Table 7. Historical Water Demand and Supply for Tracy Subbasin

Table 8. Historical Water Demand and Supply for Delta Mendota Subbasin (North Central Region)

Table 9. Future Groundwater Pumping by Subbasin (with Climate Change and Projects)

Table 10. Projected Total Water Demand and Supply for Project (AFY)

Figures

Figure 1. Pacific Gateway Project Location

Figure 2. Pacific Gateway Land Use Types

Figure 3. Pacific Gateway Current Well Locations

Figure 4. Irrigation District Service Areas

1. INTRODUCTION

This Water Supply Assessment (WSA) was prepared for the Pacific Gateway project (Project), proposed for an unincorporated area in southwest San Joaquin County near the City of Tracy (**Figure 1**). The land is currently used for agriculture, including vineyards and almond and cherry orchards and two agricultural processing and manufacturing facilities. The Project site is outside the city limits of Tracy but partially within its planning area. The Project will comprise a 1,577-acre mixed-use logistics hub with five districts (**Figure 2**). These will include a university campus, industrial buildings, Veterans of Foreign Wars (VFW) post, business park, retail commercial areas, and parks. The proposed Project will be developed in phases. The initial phase will include buildings totaling 3,998,500 square feet of industrial, the VFW post, and a university.

A Specific Plan for the Pacific Gateway Project has been developed to guide the land use planning (Ridgeline, 2024). As part of the Environmental Impact Report (EIR) for the Specific Plan, a WSA is required to assess the adequacy of water supply for the proposed demand. The Project is located near County Service Area 16 (CSA-16), and it is possible the Project could be added to the service area of CSA-16, which would entail delivery of surface water to existing uses within CSA-16 that are currently served by groundwater. As a result, this WSA considers supply and demand for the proposed Project as well as existing uses within CSA-16. The discussion of the Project site includes, where relevant, the current geographic boundary of CSA-16.

This WSA provides technical support to the County of San Joaquin (County), the lead agency, in complying with the California Environmental Quality Act (CEQA) and developing an EIR for the Project. The WSA focuses on the availability of sustainable water supply for the proposed Project. The property currently uses surface water deliveries from two irrigation districts and groundwater from wells. The new development is planning to secure surface water as the primary supply source, with recycled water for irrigation purposes, and new wells to supplement supply as needed.

1.1. BACKGROUND

The California Water Code Section 10910 (also termed Senate Bill 610 or SB610) requires that a Water Supply Assessment (WSA) be prepared for a project that is subject to the California Environmental Quality Act (CEQA) and is considered a project subject to SB610 as defined in Water Code Section 10912. Under the California Water Code Section 10912, a residential or commercial “project” includes the following:

- A proposed residential development of more than 500 dwelling units
- A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space
- A mixed-use project that includes one or more of the projects specified in Section 10912
- A project that would demand an amount of water equal to, or greater than, the amount of water required by a 500-dwelling unit project.

The Pacific Gateway Project includes approximately 26,307,150 square feet of floor space and therefore a WSA is required for this Project.

1.2. PURPOSE AND ORGANIZATION

The purpose of this WSA is to document the current water demand of the Project site, including demands at CSA-16, and the projected demand for the Project (including demand at CSA-16) and to summarize the area’s supply, including that of the proposed Project. This comparison, conducted for both normal and drought conditions in five-year increments to 2050, is the basis for an assessment of water supply sufficiency in accordance with California Water Code Section 10910 (SB610).

The WSA incorporates current and future water supply and demand information from the City of Tracy 2020 Urban Water Management Plan (UWMP), Groundwater Sustainability Plans (GSPs), and other available regional documents regarding water supplies, current water use, and estimated water use of the Project. The analysis extends to 2050, addresses water demands in five-year increments, and provides information consistent with SB610 WSA requirements.

This WSA is organized to be easily read and understood, as follows:

- Section 1 introduces the Project and provides background information.
- Section 2 focuses on the current and proposed water demands of the Project that is the subject of this WSA.
- Section 3 documents the proposed Project water supply and the area’s existing and future supplies.
- Section 4 contains a comparison of water supply and demand (in normal and drought years) that fulfills the intent of SB610.
- Section 5 summarizes the WSA conclusions.

2. WATER DEMANDS

This section addresses water demands for the existing property and presents water demand estimates for the proposed Project, along with the area's current and projected demands. While this WSA assumes that the existing demand for CSA-16 will continue to be met with existing groundwater pumping, there is a potential that surface water secured by the proposed Project could be used to offset the existing groundwater pumping for CSA-16. The residential and irrigation demands for these existing uses are presented in the future water demand tables for reference.

2.1. CLIMATE

Climate has a considerable influence on water demand on a seasonal and annual basis and is regularly tracked and reported in UWMPs, among other documents. Climate change effects also are identified.

Climate data are available from the Western Regional Climate Center (WRCC) station, Tracy Carbona (048999). Average annual precipitation in the area from 1950-2022 was approximately 10.15 inches (WRCC, 2023). Evapotranspiration (ET_o) data are available from the California Irrigation Management Information System (CIMIS) at the nearby Modesto station #71 (CIMIS 2023). **Table 1** summarizes representative climate data from the WRCC and CIMIS, including average monthly and annual rainfall, temperature, and ET_o. The groundwater basin recently experienced several years of drought; for the years 2018-2022, the average precipitation was only 6.5 inches compared to the 10.15 inches recorded as the long-term average.

In addition to short-term variability, climate change affects global and local climate patterns. The City of Tracy has a Local Hazard Mitigation Plan (Wood, 2019a) to assess and respond to droughts. The City views groundwater sustainability as key to having a reliable water supply during future droughts.

2.2. POPULATION

Current and projected population estimates are a key factor in the projected water demand of a region. Population projections for the Tracy Planning Area are shown in **Table 2**. While the planning area does not encompass the entire Project area, the table illustrates general regional trends. These estimates are from the Tracy UWMP 2020 which in turn relied on the methodology in the Wastewater Master Plan (Carollo, 2021). The projected population at buildout (assumed to be in 2045) was based on assumptions about the number of dwelling units for each development and planning area, the number of people expected per residential unit, and possible employment growth. The Project proposes to include 1,600 dormitory beds for university students to reside on campus. The projected population growth of the project is shown in **Table 2**.

2.3. CURRENT SITE WATER USE

The Project site currently is used for agricultural purposes, including almond and cherry orchards, and two agricultural processing and manufacturing facilities. The 1,577 acres of existing agriculture currently rely on groundwater wells and on surface water deliveries from two irrigation districts. The current agricultural operator estimates that irrigation is applied at the rate of 3.0 to 3.5 acre-feet per acre per year and has provided estimates of groundwater pumping and measured surface water deliveries. This WSA assumes 3.0 AF/Ac. Groundwater pumping is not metered and this a reasonable estimate based on the expected consumptive use of the crop, applied surface water, and irrigation efficiency.

Table 3 shows the existing water demand by assessor's parcel (APN) with the estimated groundwater pumping subdivided by groundwater basin and the surface water deliveries defined by irrigation district. Surface water deliveries were provided by the current landowner. The estimated average existing water demand is 4,538 AFY. The water demand of Par County Estates and Hillside Greens (CSA-16) also is listed.

The irrigation estimate was verified independently using OpenET, a publicly available tool to map satellite-based evapotranspiration (ET) data for agricultural parcels. According to OpenET, parcels in the Project area have an average ET from 33 to 48 inches, common for cherry and almond trees in this region. The estimated 3.0 acre-feet per acre of irrigation demand (36 inches of ET) is reasonable, acknowledging that irrigation is generally applied in excess of the ET needs of the crop; additional applied water will result in percolation to groundwater.

This is a conservative estimate because the focus of the WSA is on the incremental change in water demand between existing and proposed Project conditions. Accordingly, assumption of a relatively low existing water demand conservatively increases the change.

2.4. PROPOSED PROJECT WATER DEMAND

The proposed Project water demand includes three main land uses including commercial, industrial, and landscape irrigation area. The types of water uses are subdivided into four main categories: light industrial, commercial, university, and landscape irrigation. The Project will be developed in phases, based on market demand. Project water demand in this Water Supply Assessment is based on the Schaaf & Wheeler August 2025 Technical Memorandum (Appendix A).

Table 4 summarizes the phasing of the five districts with land uses, including the total square feet, start and end dates, and estimated years to development. Given the area of the Project and the estimated square footage, this appears to be a reasonable estimate of building coverage.

Table 5 shows the water demand of the proposed Project for industrial, hotel/commercial, VFW and university land uses (zoning) plus landscape irrigation

demand as evaluated for this WSA. Water demands are listed by Project area names, along with the respective groundwater basin, acreage, and estimated building area. Water demand is reported in terms of gallons per day per acre (gpd/ac), gallons per day (gpd), and acre-feet per year (AFY).

For industrial land uses, actual water demands depend on the specific industrial activity and vary widely, as do estimates of industrial water demand. For example, the San Joaquin Public Works (SJPW) Improvement Standard recommends a relatively high general value of 1,800 gpd/ac to evaluate all industrial water demand regardless of the specific activity (County, 2014). Another estimate is from the City of Tracy Wastewater Master Plan, which assumes 750 gpd/ac for industrial land uses to estimate wastewater generation for the plan.

For the proposed Project, which involves warehouses with relatively low water demand, the Schaaf & Wheeler estimate was based on observed measurements for nearby light industry. Similar projects in the county have been approved at this lower water use, including the Schulte Road Logistics Center that estimated water use at 7.5 gpd per employee and one employee per 1,500 square feet of warehouse, or 208 gpd/ac (Schaaf & Wheeler 2020). For this WSA, the reasonableness of this estimate was additionally verified with other industry standards. For example, the U.S. Energy Information Administration shows water use ranging from 405 to 6,000 gpd/ac (including outdoor irrigation) for warehouses to healthcare facilities respectively (EIA, 2023). Monterey Peninsula Water Management District (MPWMD) uses 23 gpd per acre for their water supply planning reflecting new warehouse construction (MPWMD, undated). The light industrial warehouses planned for this Project are likely in the lower range for industry. The Schaaf & Wheeler September 2025 TM estimates 10 gpd for 1,500 sq-ft of industrial space and 10 gpd per 250 sq-ft of office space; these are per shift estimates, and it is assumed that industrial developments are 95% warehouse and 5% office space, with two shifts per day. This results in a demand of 726 gpd/ac, which is a reasonable estimate for this type of development.

For proposed hotel/commercial and VFW uses, the Schaaf & Wheeler TM estimates water demand of 2,000 gpd/ac, from the SJPW Improvement Standard (County, 2014).

For the university, the Schaaf & Wheeler TM presents an estimated indoor water demand based on 12.81 gpd/student. This estimate was assessed independently with reference to reports on water use at various colleges published by the Association for Advancing Sustainability in Higher Education. In brief, community colleges report usage on the Sustainability Tracking, Assessment & Rating System (STARS) and indicate similar water use (8.65 to 17.24 gpd/student). As shown in **Table 5**, a rate of 12.81 gpd/student is assumed as a reasonable estimate and applied to a total of 5,000 students expected when the university reaches buildout. The Project also includes 1,600 dorm beds for students to live on-campus. These students are assumed to have an additional demand of 67.19 gpd/student for a total 80 gpd/student for on-campus students, also shown in **Table 5**.

In addition to indoor demand, **Table 5** summarizes the landscape irrigation demand as estimated in the Schaaf & Wheeler TM, which assumes that 15 percent of the total parcel area would be irrigated. Table 5 also shows residential demand for CSA-16. As discussed above, the CSA-16 existing demands are presented here as these demands may be served by the Project's proposed surface water supply, offsetting existing pumping, when surface water is available. It should be noted the nearby golf course is not expected to be served as part of CSA-16 and is not included in this WSA. The methodology to determine irrigation demand is based on an evapotranspiration (ET_o) from the City of Tracy (48.4 inches per year) and an Evapotranspiration Adjustment Factor (ETAF) to accommodate the expected landscape palette. California's Model Water Efficient Landscape Ordinance requires that an ETAF of 0.45 be used for commercial, industrial, and institutional landscaping uses. This is incorporated in ET Demand values in **Table 5**. Irrigation demand is shown separately on Table 5 because it could be satisfied by recycled water if available.

Given the above, total water use for the proposed Project is estimated to be 92 AFY, with an additional 138.1 AFY of existing demand from CSA-16 that will continue along with the Project if the above two systems are combined.

3. WATER SUPPLY

This section addresses current surface water and groundwater supply sources to the Project area. The Project proposes to use surface water, groundwater and recycled water.

3.1. CURRENT SITE WATER SUPPLY OVERVIEW

As detailed in **Table 3**, the existing water demand in the Project area is served by groundwater from two subbasins and by surface water from two irrigation districts: Byron-Bethany Irrigation District (BBID), and Del Puerto Water District (described in the next section). **Table 3** shows the source of supply for each parcel, based on the estimated water demand of 3.0 AF per acre. At the parcel level, groundwater ranges from 0 to 100 percent of the total existing supply, but averages about 57 percent of the overall supply. The average estimated annual groundwater use was 2,101 AF and 279 AF for the Tracy and Delta Mendota Subbasins, respectively, and the reported average annual surface water use was 2,158 AF.

Groundwater is pumped from 18 wells with capacities ranging from 50 gpm to 1,500 gpm. **Figure 3** shows the location of wells.

3.2. PROPOSED PROJECT SURFACE WATER SUPPLY

The Project proposes to use surface water, groundwater and recycled water, prioritizing surface water use to the maximum extent possible. The Project will drill one or more new wells and will not continue pumping the existing wells. The existing wells on the Project site will be properly abandoned as the Project is developed. Groundwater pumping to support existing agricultural uses on the Project site would be eliminated or substantially reduced as a result of the switch from primarily groundwater use to surface water, and the substantially reduced demand associated with the proposed Project (compared to existing agricultural uses) would thereby reduce groundwater pumping in the two subbasins. It is assumed that the respective irrigation districts will supply other growers in the area with this water and thus reduce their demand on the groundwater basins, which could decrease overall groundwater production. Treated recycled water from the Project will be used for on-site irrigation.

3.2.1. Surface Water Supply

Surface water currently is available from two irrigation districts: Byron-Bethany Irrigation District (BBID) and Del Puerto Water District (DPWD). These are described below, and the local extent of each is shown in **Figure 4**.

Byron-Bethany Irrigation District (BBID) – BBID is a special district that provides water supply to the cities of Mountain House and Tracy, as well as agricultural customers in their service area, which spans portions of three counties and includes the project area. BBID has a varied portfolio of water supply sources, including pre-1914 and licensed post-1914 surface water rights in the Delta, water purchased through transfers, and Central Valley Project (CVP) water delivered to agricultural, municipal and industrial customers in BBID's

CVP service area. BBID also has Warren Act contracts allowing for the conveyance of certain surface water supplies through specific CVP infrastructure.

BBID holds two appropriative water rights: (a) a vested pre-1914 appropriative water right; and (b) a post-1914 licensed appropriative water right acquired when BBID consolidated with the former West Side Irrigation District.

BBID's pre-1914 water right is based on a 1914 Notice of Appropriation of Water recorded by its predecessor in interest, the Byron-Bethany Irrigation Company (Company), in Contra Costa County. The Company perfected its pre-1914 appropriative right to divert water from a channel off of the west bank of Old River in the Delta, to provide domestic and irrigation water service to its landowners by May 18, 1914. BBID succeeded to the Company's property and interests in 1919, including this senior appropriative water right.

BBID's point of diversion is now (and has been since 1964) located within Clifton Court Forebay (the reservoir constructed as part of the State Water Project (SWP)) at the intake channel of the Banks Pumping Plant, the first pumping plant for the California Aqueduct, which conveys water from the Delta to the south. The only diverters downstream of BBID's pre-1914 water right point of diversion receive water through the SWP and are junior in terms of the hierarchy of appropriative water rights in relation to BBID. Pursuant to agreements with the Department of Water Resources, BBID has the right divert up to 50,000 AFY at BBID's diversion facilities located on the intake channel of the State Water Project.

BBID's post-1914 licensed appropriative water right, for 27,000 AFY, has a priority date of April 17, 1916. Its point of diversion is located in "Wicklund Cut," which is in an irrigation inlet off of Old River, a tributary to the San Joaquin River.

BBID's holds two CVP contracts for irrigation and M&I purposes totaling 23,100 AFY (20,600 AFY and 2,500 AFY respectively). Groundwater also has been pumped during drought to augment surface supplies. Additionally, BBID also has Warren Act contracts allowing for the conveyance of certain surface water supplies through specific CVP infrastructure. Lastly, BBID holds contracts for supplemental water that it may call on if needed and has received supplemental surface water supplies via temporary transfers during dry years.

Over the last two decades, certain portions of BBID's service area have been fallowed, removed from agricultural production, and developed for commercial and/or residential uses as part of the urbanization of Tracy and the surrounding area. Accordingly, BBID provides more M&I water to customers now than it has previously. BBID expects this trend will continue. As agricultural land is fallowed and replaced with M&I uses, per acre water demand decreases, increasing BBID's ability to reliably serve M&I uses.

Del Puerto Water District (DPWD) – DPWD, founded in 1947, is also a CVP contractor with a contractual entitlement of up to 140,210 AFY. The project does not plan to use water from DPWD.

3.2.2. Reliability of Surface Water Supply

The main source of water for BBID is surface water diverted from the Delta pursuant to its senior appropriative rights, along with surface water delivered to BBID under its CVP water service contracts. BBID also purchases surface water from time to time. Due to the seniority

of BBID's appropriative water rights, its CVP contractual rights, anticipated Warren Act contractual rights, and ability to acquire supplemental water during dry years, BBID's overall water supply appears reliable. CVP contract water is the primary source of surface water for DPWD. The future reliability of these surface water sources is uncertain, due to potential curtailments during dry years, and future regulations that may further limit diversions from surface water. The Project does not propose to use water from DPWD.

The State Water Resources Control Board (SWRCB) is currently considering the Bay-Delta Plan Amendment Phase 2, affecting surface water supplies diverted from the Sacramento-San Joaquin Delta and its tributaries. Two options currently being discussed are the unimpaired flow requirements (UIF) and an alternative now referred to as Healthy Rivers and Landscapes (HRL) (previously named Voluntary Agreements). Under either option the potential exists for reductions in surface water diversions; the UIF alternative, if adopted as proposed, could result in substantial reductions in available surface water supply due to the proposed requirement that a high percentage of river flow be left in stream. Given that the objectives of HRL are to provide fishery improvements while protecting water supply through-flow and non-flow measures, the surface water supply shortfalls under the HRL would be less than those under the UIF alternative.

The SWRCB-approved UIF for Phase 1 is currently being challenged in court. Phase 2 has not yet been adopted and the SWRCB recently indicated that plan implementation could take at least 5 years from adoption. The specific outcomes, including the amount and timing of any reductions in diversions, are uncertain. BBID's appropriative water rights are among the most senior in the system, and reduced diversions generally only occur, if at all, in critical dry years. BBID can seek exemptions from curtailment in times of shortage to meet public health and safety needs for M&I water. Under either the HRL or UIF alternatives, there would be minimum health and safety allocations for M&I uses, and M&I water suppliers likely would engage in water transfers to make up any critical shortfall in supply. In the litigation challenging the Phase 1 plan, the court upheld those assumptions in challenges citing CEQA and the Porter-Cologne Water Quality Act.

BBID may have sufficient surface water available to meet Project demands in all water year types, provided that such supply may be used and/or conveyed to the Project under its CVP and/or Warren Act contracts, respectively. Thus, because BBID has senior water rights, CVP water supply and Warren Act contracts, a demonstrated ability to acquire supplemental supplies during times of shortage, and the ability to receive minimum health and safety exemptions for M&I uses in dry years, a BBID surface water supply may be sufficient to meet existing and future demands. Under the most extreme conditions, surface water supply would be limited to public health and safety, which accounts for most of the non-irrigation water demand. In the event that surface water from BBID is unavailable (low probability), groundwater is available as a back up supply.

3.3. GROUNDWATER SUPPLY

As shown in **Figure 1**, the Project site overlies portions of two groundwater subbasins: the Delta-Mendota Subbasin and the Tracy Subbasin of the San Joaquin Valley Groundwater Basin. These groundwater subbasins are being managed in accordance with the Sustainable

Groundwater Management Act (SGMA). SGMA provides a framework for sustainable management of groundwater resources by local agencies and lays out a process and timeline for local agencies to achieve sustainability. In 2018, the Tracy Subbasin was categorized as a medium priority basin and Delta-Mendota Subbasin was categorized as a high priority basin (and as critically overdrafted), making both subbasins subject to SGMA (DWR, 2018). In response, local agencies have organized into Groundwater Sustainability Agencies (GSAs) and have prepared GSPs, which provide basic documentation of groundwater conditions and management planning.

The Project site is addressed in several water supply-related planning documents including the County of San Joaquin General Plan and two GSPs. The City of Tracy Urban Water Management Plan (UWMP) (EKI, 2021) addresses the City service area and sphere of influence but does not include the Project site.

Groundwater for the Project site currently is pumped from the underlying Tracy Subbasin and Delta-Mendota Subbasin of the San Joaquin Valley Groundwater Basin (see **Figure 3**). Groundwater is planned to remain a source of supply, including during drought periods when surface water allocations may be reduced, but the future demand for groundwater will be far less than the current groundwater use.

According to the Water Code, if groundwater is a source of water supply for a project, then the SB610 Water Supply Assessment must include specific groundwater information, summarized below:

- Description of the groundwater basin (e.g., basin boundaries, aquifers).
- Availability of an adopted groundwater management plan for the basin and discussion of how it affects the water supplier's use of the basin.
- Groundwater level trends and overdraft status.
- If overdrafted, management actions and projects to eliminate overdraft.
- Location and amount of groundwater extraction by the water supplier for the past five years, based on available data.
- Analysis of the location, amount, and sufficiency of groundwater that is projected to be pumped by the water supplier.

3.3.1. Groundwater Subbasin Descriptions

The Delta-Mendota Subbasin lies along the western margin of the San Joaquin Valley and spans five counties from Fresno County in the south to San Joaquin County on the north. It is bounded on the north by the Tracy Subbasin, on the east generally by the San Joaquin River and Fresno Slough, on the south by a local agency boundary, and on the west by the older geologic formations of the Coast Range. The Tracy Subbasin is bounded on northwest by the Old River, on the east by the San Joaquin River, on the west by the Coast Range and on the south by its boundary with Delta-Mendota Subbasin. The boundary between the two subbasins was modified in 2016 to include the entire DPWD in the Delta-Mendota Subbasin, resulting in a small cut out from the Tracy Subbasin (DWR 2023).

The subbasins are characterized by an alluvial groundwater system with two major aquifers separated by the low permeability Corcoran Clay; a semi-confined aquifer occurs above the

Corcoran Clay layer (Upper Aquifer) and a confined aquifer below (Lower Aquifer). The Corcoran Clay layer largely inhibits vertical flow between aquifers. It is generally pervasive throughout the Delta-Mendota Subbasin. In the Tracy Subbasin, its extent is not fully defined, and it may be absent near the foothills and beneath the Delta islands in the north.

The Tracy Subbasin GSP distinguishes Delta and Non-Delta management areas; the Tracy subbasin portion of the proposed Project is in the Non-Delta management area.

As shown on **Figures 1 and 3**, the Project overlaps the boundary between the Delta-Mendota and Tracy subbasins. This boundary is institutional in nature—based on local agency service areas—and not based on hydrologic or hydrogeologic features. Accordingly, there is general continuity of hydrogeologic layers and groundwater levels, flow, and quality across the boundary.

3.3.2. Groundwater Management Planning Status

SGMA provides a framework for sustainable management of groundwater resources by local agencies. SGMA lays out a required process, scope, and timeline and provides local agencies with broad groundwater management powers to achieve groundwater sustainability. Groundwater sustainability is defined in terms of six indicators including not only groundwater levels and storage but also subsidence, seawater intrusion, groundwater quality, and impacts on connected surface water and associated environmental benefits. SGMA is directed at groundwater basins or subbasins that have been designated by the California Department of Water Resources (DWR) as medium- or high-priority.

The Pacific Gateway Project overlies portions of two groundwater basins defined by the DWR. These are the Delta-Mendota Subbasin (DWR No. 5-022.07) and the Tracy Subbasin (DWR No. 5-022.15) of the San Joaquin Valley (see **Figure 1**). The Delta-Mendota Subbasin has been designated as high priority and as critically overdrafted. The Tracy Subbasin has been assigned medium priority by DWR and has not been designated as overdrafted.

Both subbasins are subject to and being managed in accordance with SGMA. In response to SGMA, local agencies in each subbasin have organized into GSAs and have prepared and adopted their respective GSPs. Six GSPs were prepared for Delta-Mendota Subbasin and one GSP was developed for Tracy Subbasin. The GSPs directly relevant to the Project area are:

- Delta-Mendota Subbasin Groundwater Sustainability Plan, Revised June 2024
- Tracy Subbasin Groundwater Sustainability Plan, November 2021

Because of the critically-overdrafted status of the Delta-Mendota Subbasin, completion of those GSPs was mandated for submittal to DWR by January 2020. GSPs are reviewed by DWR on a subbasin-wide basis for consistency with SGMA, so all six Delta-Mendota GSPs were reviewed jointly. DWR's initial review of the Delta-Mendota GSPs is summarized in its Consultation Initiation Letter (dated January 21, 2022), which identified deficiencies, mostly concerning lack of documentation for coordinated and consistent data, methodologies, definitions, and criteria. The GSPs were revised and resubmitted in June/July 2022.

In March 2023, DWR informed the Delta-Mendota GSAs that the actions taken to correct the deficiencies were not sufficient and that the Delta-Mendota Subbasin GSPs remain inadequate. According to SGMA, once DWR determines that a GSP is inadequate, primary jurisdiction shifts from DWR to the State Water Resources Control Board (SWRCB), which may designate the basin as probationary and intervene with an interim plan potentially including restrictions on groundwater extractions (Water Code § 10735.8). However, a GSA remains obligated to continue monitoring, annual reporting, and updating the GSP and is encouraged to continue implementation of GSP projects and management actions. The GSAs submitted a draft GSP for the Subbasin to the State Water Resources Control Board (SWRCB) in June 2024 and the GSP is currently under review.

The Tracy Subbasin GSP was approved by DWR on January 18, 2024. This indicates that the Plan includes the required components of a GSP, demonstrates an understanding of the Subbasin based on what appears to be the best available science and information, sets supported and reasonable sustainable management criteria to prevent undesirable results as defined in the Plan, and proposes a set of projects and management actions that if appropriately implemented will likely achieve the sustainability goal defined for the Subbasin. While approving the GSP, DWR also identified seven recommended corrective actions generally focusing on:

1. Revising current water budget information.
2. Clarifying and providing additional details related to management areas.
3. Refining and providing additional information related to chronic lowering of groundwater levels sustainable management criteria.
4. Refining criteria used to determine whether undesirable results due to degraded water quality are occurring.
5. Refining criteria used to determine whether undesirable results due to land subsidence are occurring.
6. Continuing to fill data gaps, collecting additional monitoring data, coordinating with resources agencies and interested parties to understand beneficial uses and users that may be impacted by depletions of interconnected surface water caused by groundwater pumping, and potentially refining sustainable management criteria.
7. Providing additional details and discussion related to the monitoring networks.

DWR staff will continue to monitor and evaluate changes in conditions in the Subbasin, including the Subbasin's progress toward achieving the sustainability goal, through annual reporting and periodic evaluations of the GSP. While the GSPs are evolving, they and the associated annual reporting are the best available documentation of groundwater conditions and management planning and thus provide the basis for the following sections.

3.3.3. Groundwater Levels, Storage, and Overdraft Condition

As described in the GSP for the Delta-Mendota Subbasin, groundwater levels show variable geographic patterns with some areas showing declines and others indicating stable or increasing levels in recent years. Groundwater levels also have varied through time, affected by factors including expansion of irrigated agriculture and increased

pumping, importation of surface water, and occurrence of drought. The GSP provides groundwater level hydrographs for selected wells; the closest to the Project Area are in San Joaquin County south of Highway 132. The two well hydrographs, representing the Upper and Lower Aquifers respectively, indicate variable groundwater levels with increases from about 1997 to 2015.

The 2019 GSP for the Northern and Central Delta-Mendota Region characterized the water balance in the area near the project site. The old GSP, which may be replaced by the revised Subbasin wide GSP submitted to the SWRCB in 2024, presents water budget analyses for the Upper Aquifer and Lower Aquifer, respectively, for historical (2003 – 2012), current (2013) and projected periods (2014-2070). Under projected conditions (with climate change but without projects and management actions), average annual change in storage is projected to persist at rates of -42,000 AFY in the Upper Aquifer and -6,000 AFY in the Lower Aquifer. The GSP notes that average outflows are greater than inflows, meaning that overdraft conditions persist.

As documented in the GSP for the Tracy Subbasin, groundwater levels generally have been stable, and recover after periods of pumping with only a few areas indicating declining groundwater levels. While groundwater levels in most of the subbasin are stable or rising, the GSP identified five wells in the Non-Delta Management area with declining groundwater levels based on long-term records (1998-2020). Two of these wells are located south of Tracy and east of the Project Area; these appear to be constructed in both the Upper and Lower aquifers. New replacement monitoring wells are planned that will distinguish the aquifers and level trends.

The change in groundwater storage was estimated for the entire Tracy Subbasin using groundwater modeling; cumulative change in groundwater storage for 1975 through 2015 increased on average by about 3,000 AF per year. Water budgets presented in the GSP for the Non-Delta management area indicate a slight surplus for the historical water budget. The projected water budget with climate change but without projects or management actions shows a slight deficit. The deficit, about 800 acre-feet per year (AFY), is occurring in the Upper Aquifer, with the lower Aquifer showing a slight surplus of about 100 AFY.

3.3.4. Groundwater Management Actions and Projects

Consistent with SGMA, both GSPs provide documentation of groundwater conditions in terms of the six indicators of groundwater sustainability. These indicators are groundwater conditions occurring throughout the Subbasin that, when significant and unreasonable, cause undesirable results. The undesirable results include chronic groundwater level decline, groundwater storage depletion, seawater intrusion, groundwater quality degradation, land subsidence, and depletion of interconnected surface water.

Each GSP presents a sustainability goal (absence of undesirable results within 20 years) and ways to measure sustainability indicators including minimum thresholds and measurable objectives. Both have monitoring programs for sustainability and annual reporting.

The GSP for the Northern and Central Delta-Mendota Region provides projects and management actions to achieve subbasin-wide sustainability, including elimination of overdraft. Projects involve recharge and recovery, stormwater recharge, drain water reuse, recycled water development and use, and reservoir expansion. Management actions include drought contingency planning in urban areas, monitoring to fill data gaps, well permitting procedures, and minimization of subsidence. Currently, no pumping restrictions have been proposed for the Northern and Central Delta-Mendota Region; however, the GSAs maintain the flexibility to implement such demand management actions if needed. It is expected that municipal and industrial water suppliers may be able to seek relief from future pumping restrictions to satisfy minimum health and safety requirements. However, the Delta-Mendota GSAs are still working actively with the SWRCB to revise their GSP and additional projects and management actions for demand management may be added to the Subbasin GSP.

The GSP for the Tracy Subbasin provides a summary of sustainability, noting that the Delta management area will not require active groundwater management by the GSAs to maintain sustainability. The Non-Delta management area (where the Project Area is located) is where most agricultural, domestic, and municipal wells are present and where groundwater is used; this area may require active management to be sustainable.

Accordingly, the GSP provides a summary of sustainability in the Non-Delta area. While no seawater intrusion has occurred, there has been some lowering of groundwater levels, a slight reduction in storage, and land subsidence due to groundwater extraction. There may be surface water depletion, and groundwater quality is naturally poor quality. One project is proposed to reduce groundwater pumping by 1,000 AFY. This involves expanding Banta Carbona Irrigation District (BCID) capabilities to provide surface water in lieu of groundwater pumping. Management actions involve modification of the San Joaquin County Well Ordinance to create surface water protection zones near rivers, canals, and sloughs in the Non-Delta Management Area. Improvements to the numerical groundwater model have been identified to reduce uncertainties in water budgets.

3.4. RECYCLED WATER

The Project will have an irrigation water system that consists of a recycled water storage tank and booster station, located at the wastewater treatment plant, and supplemental irrigation wells to offset demands in excess of recycled water capacity. **Table 6** summarizes the estimation of recycled water supply. Based on the Schaaf & Wheeler calculations of wastewater generation (493,160 gpd), as much as 552 AFY of recycled water could be generated and used for irrigation on site. Wastewater is generally consistent over the course of the year, whereas ET and irrigation demands generally peak during the hot summer months. **Table 6** shows the possible volume of irrigation demand that could be satisfied by recycled water assuming 1) that most of the wastewater generated can be treated to recycled water standards, 2) wastewater generation is even through the year, and 3) water can be used within the month it is generated. Up to 266 AFY of recycled water could satisfy the non-potable irrigation demand of the project.

3.5. PROPOSED PROJECT WATER SUPPLY

3.5.1. Surface Water

The Project proposes to continue use of available surface water supply from BBID. Projected potable water demand for the Project is proposed to be satisfied with surface water from BBID, as a first priority, supplemented by groundwater as needed. The future reliability of the surface water source delivered by BBID is discussed in more detail in Section 3.2.

The development is in the process of obtaining a will-serve letter from BBID for up to 1,100 AFY of surface water deliveries. BBID has indicated that it may have adequate water supply to meet Project demands in any year type, assuming such supply can be used and/or conveyed under its CVP and/or anticipated Warren Act contracts. This conclusion is supported by the fact that the Project, including any future surface water delivered to CSA-16, will require substantially less water than BBID historically has provided to the Project site, and that BBID has the ability to prioritize uses of water in times of shortage, including to ensure that sufficient water is available for public health and safety purposes. Additional treatment of surface water will be required for M&I uses, and the Project is working with the County Public Works to obtain the proper permits.

There is potential to combine the Project's water system with that of the nearby community water system, CSA-16. The existing CSA demand currently served by groundwater would be served with available additional surface water.

The difference between existing surface water use and future use under the Project would be available for other uses, as determined by BBID and DPWD, including use by other local growers. Because surface water is less expensive than groundwater, it is reasonable to assume that growers currently relying on groundwater for agricultural irrigation would switch from groundwater to surface water to the extent it is available.

3.5.2. Groundwater

The potable water system proposes to use surface water, with groundwater serving as backup supply if needed. The Project well will be equipped with a wellhead treatment system, if deemed necessary from water quality testing. Depending on surface water availability, and production capacity of the initial well, additional backup wells may be added to the distribution system as the Project expands.

Preliminary hydrogeologic and water quality testing have not been performed, so well location details beyond the initial well are undetermined at this time. The Project will comply with all GSP and County regulations to properly site and permit the well(s). The project applicant has identified a well location in Delta Mendota but given the sensitive nature of the critically overdrafted basin, the applicant is actively looking for well locations in the Tracy subbasin. Currently, a well has been identified in the Tracy Subbasin and is being tested to assess water quality. It is expected that the well will be drilled below the Corcoran Clay in either basin, as the clay layer is relatively shallow in this area (approximately 200 ft).

Table 3 shows the existing groundwater use by subbasin based on the crop area. Based on location of irrigated fields, 2,253 AFY is currently pumped from the Tracy subbasin and 279 AFY is pumped in Delta-Mendota. While most of the irrigated fields are in the Tracy subbasin, they may be supplied by wells pumping in the Delta Mendota subbasin.

If, in the event of surface water interruption and the project is unable to find a suitable well site in the Tracy subbasin, and additional groundwater is needed from the Delta Mendota Subbasin, then additional pumping reduction in that subbasin would be needed.

The project is currently in negotiations with the landowner for possible changes in land use outside the project area. The landowner is willing to limit groundwater pumping from existing volumes (by reducing crop area or increasing surface water purchases). This is documented in a letter, included as Appendix B. The landowner would designate wells #4, #5, and #6 as Curtailment Wells and limit use during dry years. Further documentation will be developed if surface water proves unreliable.

Actions would need to be taken to reduce existing pumping in the subbasin to ensure there is net zero pumping increase in this critically overdrafted basin. Such actions could include one or more of the following actions: temporary or permanent fallowing of crop acres; crop substitution; water conservation; or a replacement water supply for agriculture.

3.5.3. Recycled Water

Projected non-potable (irrigation) water demands will be served with recycled water, supplemented with groundwater and surface water when demand is higher than available recycled water supply. The recycled water will be generated by the Project. Wastewater from the Project will be treated onsite at a package wastewater treatment facility with a drying sludge press system for solids. The wastewater treatment site will also house recycled water facilities, including a pump station and above ground storage tank. The Project plans on continuing to use BBID water for irrigation demands to supplement the recycled water supplies with the added benefit of reducing the summertime salt and nitrate concentrations in the recycled water. Recycled water demand and availability are shown in **Table 6**. An estimated 266 AFY of recycled water will be available to meet non-potable irrigation demand.

3.5.4. Other Supplies

While not a direct source of supply, the Project has several stormwater detention basins to recharge storm water to the aquifer. This recharge will replenish the local groundwater and help to improve groundwater levels in the vicinity of any Project pumping.

3.6. CURRENT AND PROJECTED GROUNDWATER DEMAND FOR THE REGION

The historical groundwater demands and supplies for the Tracy and Delta Mendota (North Central region) subbasins are shown in **Table 7 and 8**, respectively. Both GSPs document the demand and supply by source in different types of water years (e.g., wet, dry). The Tracy Subbasin relies on groundwater for 37 percent of the total demand on

average, increasing to 39 percent during dry years when surface water allocations are reduced. The Delta Mendota Subbasin relies on groundwater for 20 percent of total demand on average.

Both GSPs focus on groundwater demand and the associated change in storage into the future for their respective subbasins. The forecasted pumping and storage with climate change (including the groundwater management projects outlined in the GSP) are shown in **Table 9**, for both Tracy and Delta Mendota (North Central) subbasins.

As indicated in **Table 9**, both GSPs anticipate an increase in groundwater pumping over the next 10 years (to 2033) but ultimately envision a decrease in groundwater pumping as new supplies, projects, and management actions are implemented. Tracy Subbasin shows an increase in storage under all years indicating a sustainable groundwater supply to meet demand. The Delta Mendota Subbasin forecasts a negative change in storage during dry years. The subbasin is already deemed to be critically overdrafted, and the continued negative storage change indicates that overdraft conditions are not likely to improve without additional action in the future.

4. COMPARISON OF SUPPLY AND DEMAND

The WSA must compare supply and demand for the groundwater basin where the Project is located. **Table 10** summarizes water demand and supply projections for the Project in five- year increments to 2050 for normal years, respectively. The table shows the current (2025) water demand and supply at the Project site including the agricultural water demand. As the project is developed, the agricultural water demand is incrementally phased out. During construction, some water demand may be needed for construction but is not included here. Finally, the future phasing is based on the economic analysis projections but may differ based on market demand.

Agricultural uses are expected to continue on parcels in the project area that have not yet begun construction. Once under development, the agricultural demand will be replaced by construction water demand and then finally project demand. Because the existing demand of the agricultural parcels are significantly higher than the project demand, the project will also result in substantial decrease in water demand. On average, agricultural water use is 3.0 AFY/ac whereas project area water demand is 1.45 AFY/ac (excluding landscape irrigation that is expected to be satisfied by recycled water). Construction water is expected to be negligible, short term, potentially trucked in on a temporary basis, and will be significantly less than the replaced agricultural water use. As such, construction water demand is not included in the five-year interval phasing projections.

Project water demand is not expected to change in dry or multiple dry years. Much of the demand is for commercial and industrial uses that would remain constant and already include water conservation measures. Outdoor irrigation demand is primarily met by recycled water, which would not be affected by drought conditions.

The future demand for groundwater depends on surface water availability, which can vary by water year type. During wet and normal years, all the Project demand may be met with surface water. Depending on future regulatory requirements, surface water supplies may be sufficient to meet Project demands in dry and critically dry years. Based on the sustainability projections in the relevant GSPs, and the Project's total water demand, the Project demand also can be met with groundwater. As shown on **Table 10**, the projected future demand of the project for primary supply sources (not including recycled water) is 8 AFY, which is below the current demand of existing uses at the Project site of 4,538 AFY and below the total existing groundwater use within the Project site of 2,380 AFY. (See **Table 3**). The Project's maximum groundwater use would be within the sustainable yield estimates under both adopted GSPs. By reducing surface water use on the site, the Project also will allow additional surface water supplies to serve growers currently relying on groundwater in the Delta Mendota and Tracy Subbasins ; because surface water is typically less expensive than groundwater, it is reasonable to assume the project will result in a net reduction in pumping in the Project area, which will contribute to the long-term sustainability of the basins.

Groundwater pumping from the Delta Mendota Subbasin will need to comply with any restrictions on groundwater extractions imposed by the GSAs or by SWRCB, unless specifically excluded. Neither GSP currently proposes limits on groundwater pumping for

M&I uses. The currently proposed supply well is located within the Delta Mendota Subbasin; however the project proponent is assessing an existing well location in the Tracy Subbasin pending water quality testing. If the water supply well for the project relies on the Delta Mendota Subbasin, steps will be taken to reduce existing water demand in the Subbasin so that there is no net increase in groundwater demand. Three existing wells in Delta Mendota Subbasin will become curtailment wells and pumping will be reduced as needed (Appendix B).

Accordingly, it can be concluded that adequate groundwater is available to supply the Project, even if no surface water were available, as long as the existing pumping in the Delta Mendota Subbasin is decreased to allow for no net increase.

5. CONCLUSIONS

Findings of this WSA are summarized below.

- The Pacific Gateway Project is in a currently unincorporated area of San Joaquin County.
- The proposed developed area is a 1,577-acre mixed-use logistics hub including a university campus, VFW post, business park, retail commercial, and a park. The proposed project will be developed in phases.
- A WSA as per SB610 is required because of the extent of development.
- The water demand of the Pacific Gateway Project is expected to be 2 AFY as estimated by Schaaf & Wheeler; this is a reasonable estimate.
- The Project's proposed supply portfolio prioritizes the use of surface water. The surface water demand of 8 AFY for the Project is lower than the existing demand of 2,158 AFY. Reduced surface water demand below existing demand will free up additional surface water for other uses.
- The Project's irrigation demand, 266 AFY, will be satisfied with recycled water.
- The Project area overlies both the San Joaquin Valley – Tracy Subbasin (5-022.15) and the San Joaquin Valley – Delta-Mendota Subbasin (5-022.07).
- Existing water use for the Project site is greater than proposed future uses.
- Water source options for the Project include surface water from BBID and local groundwater, as well as recycled water. BBID has stated that it may have sufficient supply to meet Project demand in all years, assuming such supply can be used and/or conveyed under its CVP and/or anticipated Warren Act contracts, respectively. Surface water previously delivered to the agricultural uses on site that exceed Project demand will be used elsewhere in the subbasin and may offset existing groundwater pumping.
- Total groundwater use is expected to be substantially less than the current groundwater demand. If needed, additional demand from the Delta Mendota Subbasin will be mitigated such that there is no net increase in groundwater pumping from the Subbasin.
- The Project proponent is actively assessing well locations in the Tracy Subbasin, pending water quality testing.
- Sufficient groundwater supplies are available to serve the Project's demands, and pumping at the projected Project level is consistent with the Tracy GSP and the Delta-Mendota GSP.

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TABLES

Table 1
Climate Data

	Average Rainfall (inches)	Average ETo (inches)	Average Temperature (°F)
January	2.21	1.0	45.06
February	1.62	1.5	50.41
March	1.43	2.9	54.33
April	0.79	4.5	59.49
May	0.44	6.1	65.56
June	0.09	7.3	71.91
July	0.02	7.9	75.43
August	0.07	6.7	74
September	0.19	5.3	71.08
October	0.49	3.2	63.59
November	1.08	1.3	53.55
December	1.72	0.7	45.59
Average Calendar Year Total	10.15	48.40	60.8
Monthly Average	0.85	4.03	60.8

Source:

(a) Temperature and precipitation data from Western Regional Climate Center Tracy Carbona Station (048999) updated April 2023

(b) Reference evapotranspiration data from Tracy UWMP 2020 Table 3-3 (California Code of Regulations, Title 23, Division 2, Chapter 2.7, Model Water Efficient Landscape Ordinance.)

Table 2
Population Projections

	2020	2025	2030	2035	2040	2045
Tracy Planning Area*	96,345	109,900	120,367	130,833	141,300	166,700
Project	0	0	0	533	1,067	1,600

*Source: Tracy UWMP 2020 Table 3-1

Table 3
Existing Site Water Demand

APN	Acreage (Ac)	Groundwater* (AFY)		Surface Water Deliveries (AFY)		Total (AFY)
		Tracy	Delta Mendota	BBID	Del Puerto	
East Industrial Area						
253-140-09	3.06	9.18				9.2
253-140-10	37.06	14.25		96.93		111.2
253-140-11	40.13	15.43		104.96		120.4
253-140-13	25.9	77.70				77.7
253-140-14	14.17	5.45		37.06		42.5
253-140-15	12.92	38.76				38.8
253-140-16	27.09	10.42		70.85		81.3
253-140-17	40.11	15.43		104.90		120.3
253-140-19	6.2	18.60				18.6
253-140-20	34.11	13.12		89.21		102.3
253-140-21	40.09	15.42		104.85		120.3
253-140-22	17.83	53.49				53.5
253-140-23	22.3	8.58		58.32		66.9
253-140-24	9.26	27.78				27.8
253-140-25	30.86	11.87		80.71		92.6
Central Industrial Area						
253-180-02	60.03	180.09				180.1
253-180-11	182.85	548.55				548.6
253-900-110	61.7	0.00		185.10		185.1
253-190-21	39.91		88.65		31.08	119.7
253-190-22	39.98		88.80		31.14	119.9
253-180-060	4.47	13.41				13.4
East Industrial Area						
253-260-090	119.46	239.38		119.00		358.4
253-260-120	119.46	115.48		242.90		358.4
253-260-130	202.83	194.49		414.00		608.5
253-290-050	103	121.50		187.50		309.0
253-290-110	40.01	107.08			12.948	120.0
253-290-120	14.92	39.32			5.441	44.8
253-290-130	19	50.34			6.662	57.0
Gateway Center						
253-260-050 (Not Planted)	0.99	0.00				0.0
253-260-140 (Not Planted)	59.1	0.00				0.0
University Center						
253-190-05 (Not Planted)	7.65	0.00		0.00		0.0
253-190-04	66.05	156.30		41.85		198.2
253-190-19	37.94		84.27		29.55	113.8
Off-Site Basin						
253-200-190	40		17.47		102.53	120.0
Subtotal Project Area	1,580	2,101	279	1,938	219	4,538
Par County Estates (CSA-16)						
Par County Estates	191	151.70				151.7
TOTAL	1,772	2,253	279	1,938	219	4,690

*Groundwater pumping is estimated

Table 4
Project Phasing

District	Use	Square Feet	Start	End	Years
Initial Phase					
Pacific Gateway East	Industrial	3,962,000	2026	2032	6
University Center	VFW	11,500	2026	2028	2
University Center	University	25,000	2026	2028	2
Subtotal		3,998,500			
Balance of East District					
Pacific Gateway East		7,162,274	2032	2039	7
University Center		1,239,150	2028	2048	20
Total Development					
Pacific Gateway East	Industrial	11,124,274	2026	2039	13
Pacific Gateway Central	Industrial	6,856,474	2038	2047	9
Pacific Gateway West	Industrial	6,168,882	2047	2056	9
Gateway Center	Industrial	525,370	2042	2046	4
University Center	University	1,264,150	2026	2046	20
	University (Expansion)	115,000	2046	2048	2
	University - Dorm Beds (# beds)	1,600	2030	2045	15
	Industrial Park (Business)	93,000	2028	2034	6
	Commercial Retail/Service	38,908	2030	2038	8
	VFW	11,500	2026	2028	2
	EV Charging Lot	-	2032	2033	1
Gateway Center	Hotel	60,000	2030	2032	2
	Commercial Retail/Service/Hotel	49,592	2026	2032	6
Total		26,307,150	2026	2056	30

Source: Ridgeline Property Group, Pacific Gateway Development Phasing Plan, October 2024

Table 5
Project Water Demands

Area Name	Groundwater Subbasin	Zoning	Building Area (ac)	Rate	Unit	Average Daily Demand (gpd)	Indoor Use (AFY)	Estimated Irrigation Area (ac)	ET Demand (AFY)	Total Water Demand (AFY)
Pacific Gateway East	Delta-Mendota/Tracy	Industrial	255.4	726	gpd/ac	185,405	207.7	100.0	112.6	320.3
Pacific Gateway Central	Delta-Mendota/Tracy	Industrial	157.4	726	gpd/ac	114,275	128.0	61.7	69.4	197.4
Pacific Gateway West	Tracy	Industrial	141.6	726	gpd/ac	102,815	115.2	55.5	62.4	177.6
Gateway Center	Delta-Mendota/Tracy	Industrial	12.1	726	gpd/ac	8,756	9.8	4.7	5.3	15.1
Gateway Center	Delta-Mendota/Tracy	Hotel/Commercial	2.5	2,000	gpd/ac	5,032	5.6	1.0	1.1	6.7
University Center	Delta-Mendota/Tracy	University	31.7	12.81	gallons per student per day	64,050	71.7	12.4	14.0	85.7
University Center	Delta-Mendota/Tracy	University	N/A	67.19	gallons per student per day	107,504	120.4	N/A	N/A	120.4
University Center	Delta-Mendota/Tracy	VFW	0.3	2,000	gpd/ac	528	0.6	0.1	0.1	0.7
University Center	Delta-Mendota/Tracy	Industrial	2.1	726	gpd/ac	1,550	1.7	0.8	0.9	2.7
University Center	Delta-Mendota/Tracy	Commercial	0.9	2,000	gpd/ac	1,786	2.0	0.3	0.4	2.4
Subtotal Project Demand:			603.9				662.8	236.6	266.2	929.0
CSA-16	Tracy	Residential	N/A	N/A		123,290	138.1	-	-	138.1
Total			603.9				800.9	236.6	266.2	1,067.1

Source: Schaaf & Wheeler, Pacific Gateway Water and Sewer Demands and System Requirements, August 2025.

Note: University demand assumes 12.81 GPD/student for 5,000 students. The 1,600 students living on campus are assumed to have an additional 67.19 GPD/student demand.

Table 6
Maximum Recycled Water Supply to Meet Irrigation Demands

Monthly Reference Evapotranspiration, ETo (inches)		Percent of Annual ET by Month	Expected Irrigation Demand by Month (AFM)	Max Recycled Water (AFM)	Available Recycled Water (AFM)
January	1.0	2%	6	46	6
February	1.5	3%	8	46	8
March	2.9	6%	16	46	16
April	4.5	9%	25	46	25
May	6.1	13%	34	46	34
June	7.3	15%	40	46	40
July	7.9	16%	43	46	43
August	6.7	14%	37	46	37
September	5.3	11%	29	46	29
October	3.2	7%	18	46	18
November	1.3	3%	7	46	7
December	0.7	1%	4	46	4
Total	48.4	100%	266	552	266

Table 7
Historical Water Demand and Supply for Tracy Subbasin

Component	<i>Wet</i>	<i>Above Normal</i>	<i>Below Normal</i>	<i>Dry</i>	<i>Critical</i>	<i>All</i>
Total Demand (AFY)	363,090	379,703	356,239	400,306	430,139	392,407
<i>Total Surface Water Supplies</i>	<i>277,530</i>	<i>279,349</i>	<i>257,007</i>	<i>279,357</i>	<i>303,248</i>	<i>285,603</i>
<i>Total Groundwater Supplies</i>	<i>149,385</i>	<i>161,391</i>	<i>152,962</i>	<i>178,608</i>	<i>186,106</i>	<i>167,400</i>
Urban Groundwater	25,887	27,033	25,172	26,878	23,908	25,471
Agricultural Groundwater	123,498	134,358	127,790	151,730	162,198	141,928
Total Water Supplies (AFY)	426,915	440,740	409,969	457,965	489,354	453,002

Source: Tracy GSP Table 7-2 (1974-2015),

Table 8
Historical Water Demand and Supply for Delta Mendota Subbasin
(North Central Region)

Component	<i>Wet</i>	<i>Normal</i>	<i>Dry</i>	<i>All</i>
Total Demand (AFY)	535,000	504,667	536,250	527,000
<i>Total Surface Water Supplies</i>	<i>438,667</i>	<i>390,333</i>	<i>425,250</i>	<i>419,000</i>
<i>Total Groundwater Supplies</i>	<i>96,333</i>	<i>114,333</i>	<i>111,000</i>	<i>108,000</i>
Urban Groundwater	4,000	3,667	3,750	4,000
Agricultural Groundwater	92,333	110,667	107,250	104,000
Total Water Supplies (AFY)	535,000	504,667	536,250	527,000

Source: Delta Mendota GSP Table 5-20 (2003-2012)

Table 9
Future Groundwater Pumping by Subbasin (with Climate Change and Projects)

Subbasin	2020	2025	2030	2035	2040	2045
Tracy Subbasin						
Groundwater Pumping (AFY)	182,100	200,477	240,325	217,861	201,081	167,655
Change in Storage (AFY)	221,012	32,076	15,510	16,828	197,505	149,414
Delta Mendota Subbasin (North Central)						
Groundwater Pumping	115,000	78,000	144,000	61,000	100,000	84,000
Change in Storage (AFY)	-129,000	60,000	-90,000	68,000	-74,000	37,000

From Table 5-33 and 5-34 of the Delta Mendota GSP and Appendix M of the Tracy Subbasin GSP

Table 10
Projected Total Water Demand and Supply for Project (AFY)

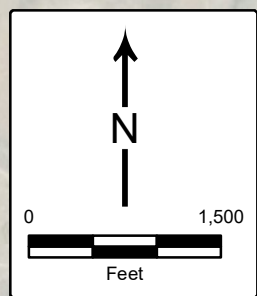
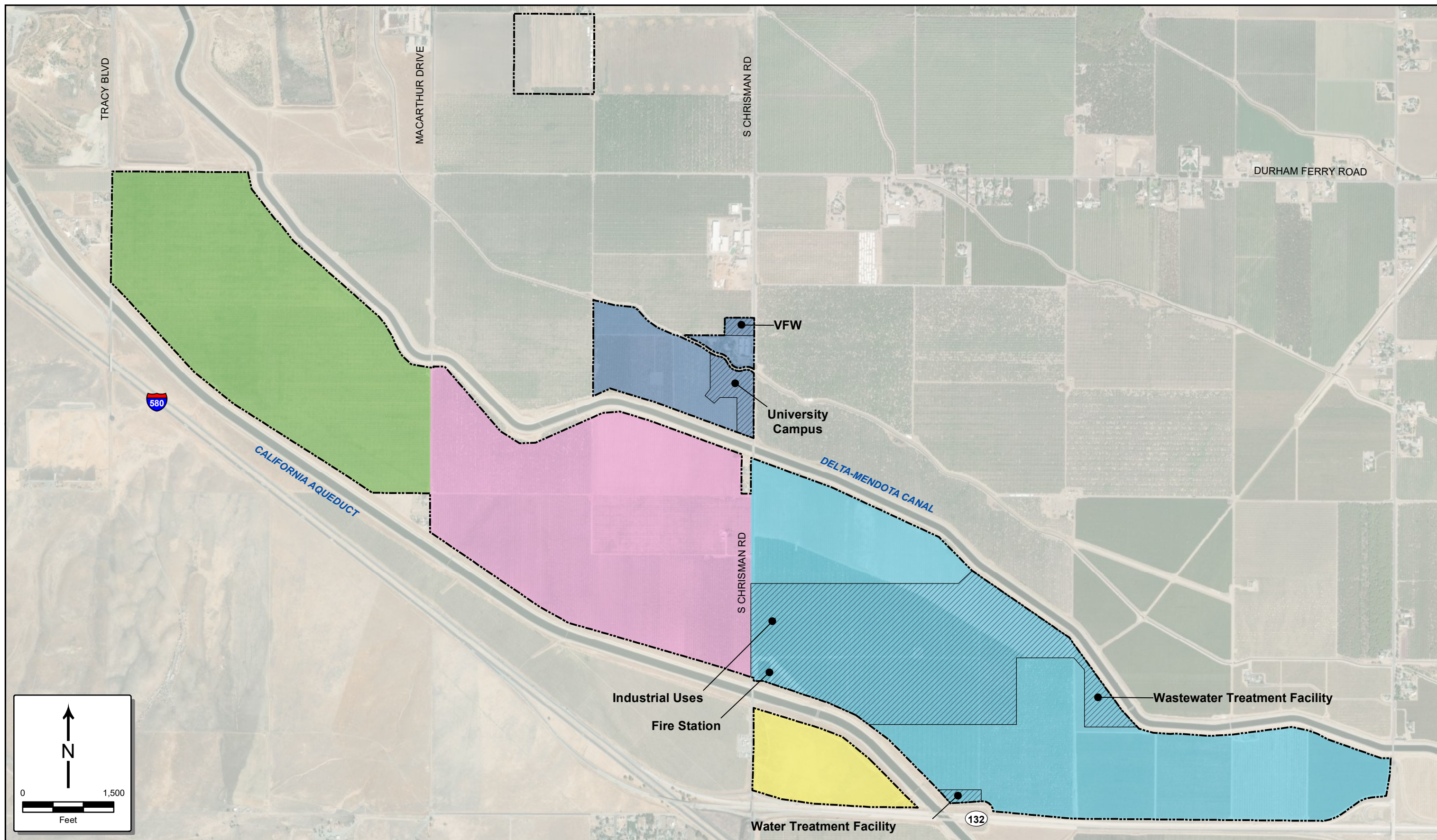
Source	2025 (Existing Uses)	2030*	2035	2040	2045	2050
Total Surface Water Supplies	2,158	2,158	1,704	1,228	1,201	801
<i>Project</i>	0	198	332	532	540	663
<i>CSA-16**</i>	0	138	138	138	138	138
<i>Agriculture</i>	2,158	1,822	1,233	558	522	0
Total Groundwater Supplies	2,670	2,138	1,448	655	613	0
CSA-16 (Tracy Subbasin)	138	0	0	0	0	0
<i>Agriculture (Tracy Subbasin)</i>	2,253	1,902	1,288	583	546	0
<i>Agriculture (Delta-Mendota Subbasin)</i>	279	236	160	72	68	0
Total Recycled Water Supplies	0	41	114	197	202	266
Subtotal Project Water Supplies (AFY)***	0	378	585	868	880	1,067
Total All Water Supplies (inc. Agriculture)	4,828	4,338	3,266	2,081	2,016	1,067

* Construction use not included, assumed negligible

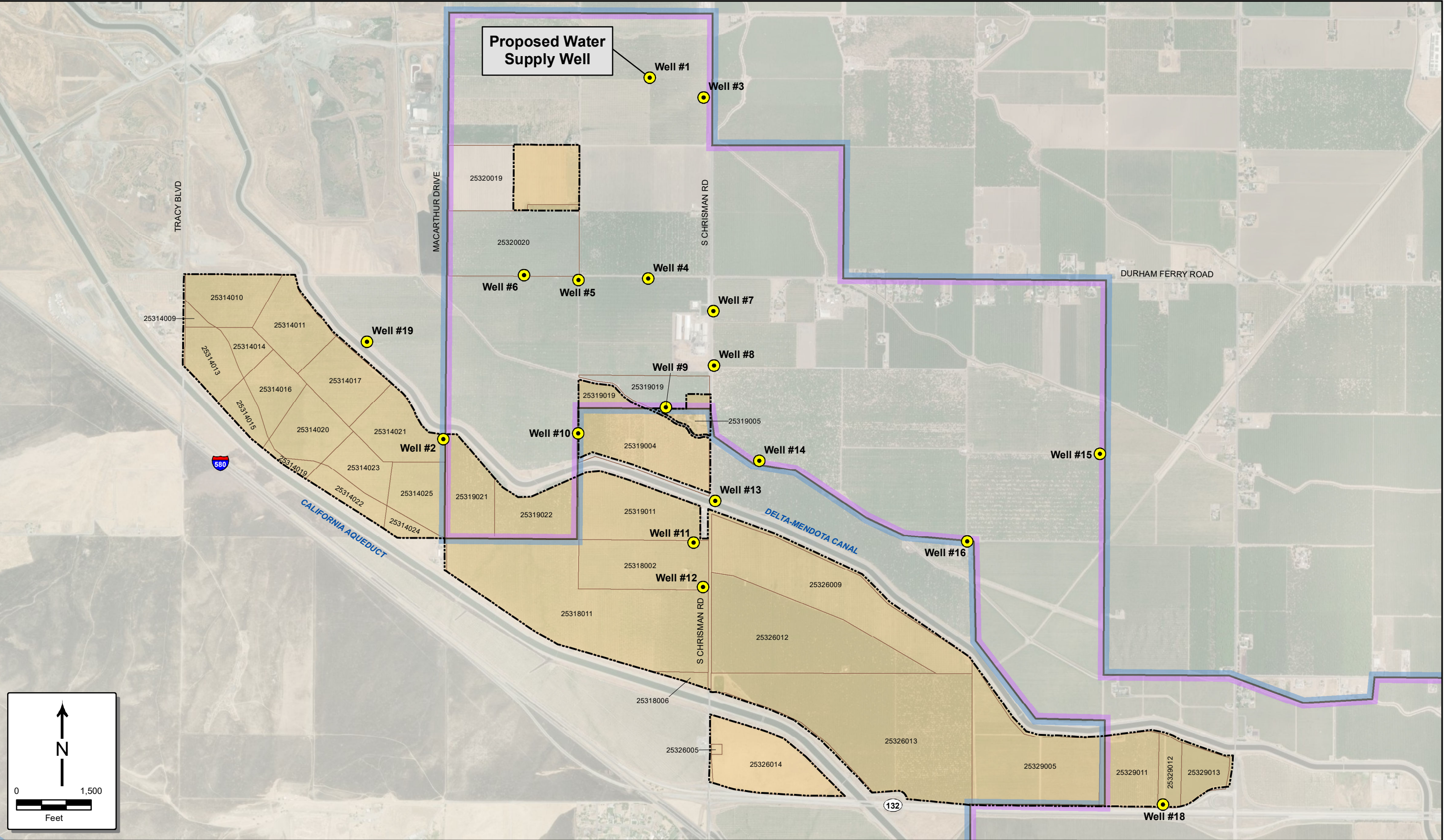
** CSA-16 Future demand is shown as possible surface water supply. Existing demand is included in the groundwater supply. Higher surface water demand in 2030 is due to lower availability of recycled water while project is developed.

***Subtotal Project Water Supplies includes Project, CSA-16, and Recycled Water (shaded)

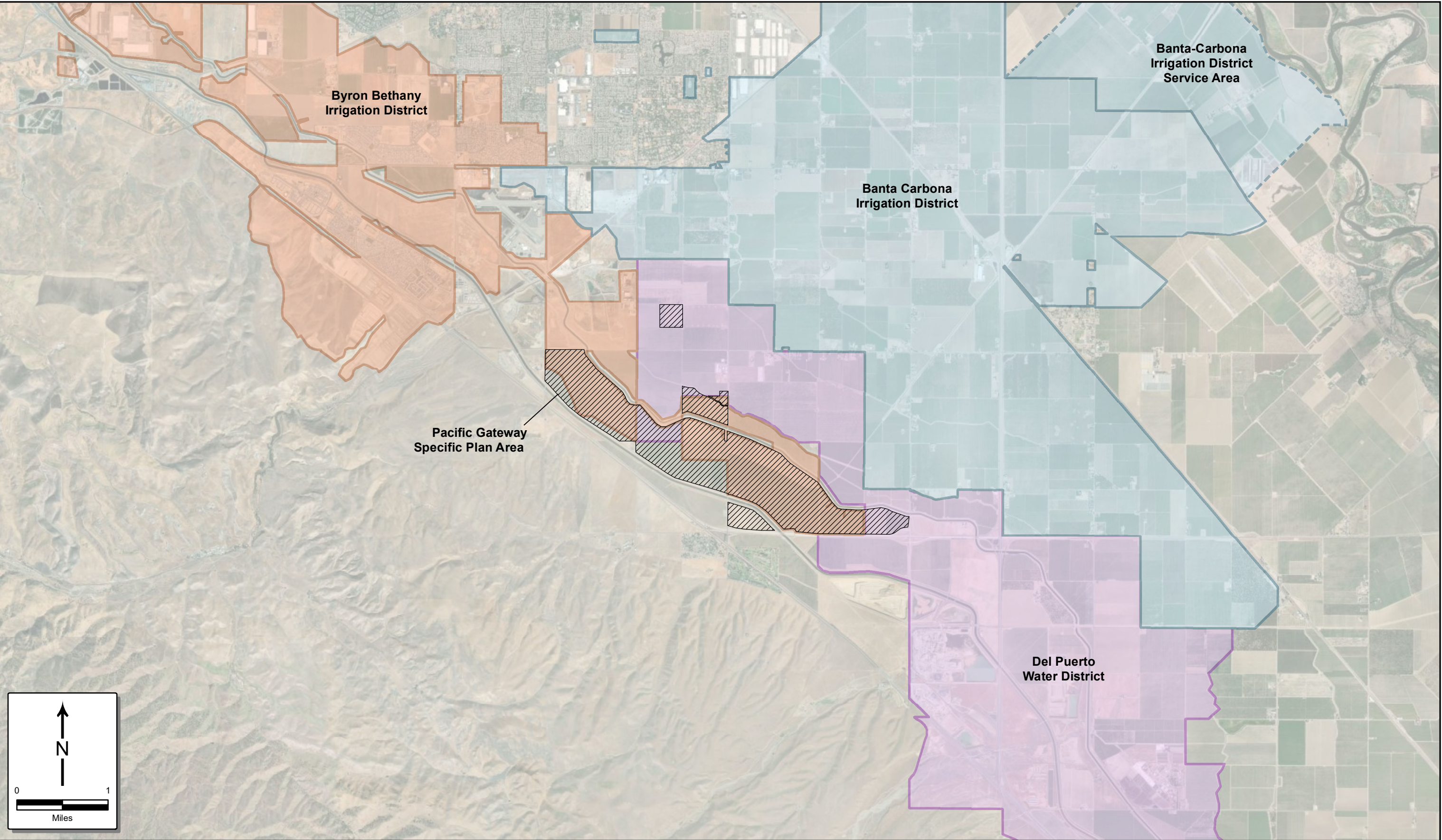
FIGURES

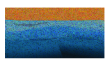


- | | | |
|---------------------|-------------------------|----------------------|
| Project Boundary | University Center | Pacific Gateway East |
| Initial Development | Pacific Gateway West | Gateway Center |
| | Pacific Gateway Central | |



Groundwater Basin			August 2025		Figure 3 Raney Pacific Gateway Current Well Locations
Tracy (5-022.15)	Project Boundary	Existing Well Location			
Delta-Mendota (5-022.07)	Parcel Boundary	Raney Pacific Gateway Specific Plan Area			



  Banta Carbona Irrigation District  Banta-Carbona Irrigation District Service Area  Byron Bethany Irrigation District  Del Puerto Water District  Pacific Gateway Specific Plan Area			August 2025 TODD  GROUNDWATER		Figure 4 Irrigation District Service Areas
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APPENDIX A

TECHNICAL MEMORANDUM

DATE: August 21, 2025
TO: Carter Reiff, PE
FROM: Glen M. Anderson, PE
SUBJECT: Pacific Gateway – Water and Sewer Demands and System Requirements

Introduction

As part of the preliminary development plans for the Pacific Gateway development (Project), Kier & Wright has contracted Schaaf & Wheeler to establish required water demands for the proposed development, and to provide recommendations on water system requirements. This memorandum serves to provide estimated water requirements for the development as well as preliminary water system infrastructure requirements.

The Project consists of developing existing farmland into industrial usage, as well as the addition of a university. The Project will convert approximately 1,577 acres of existing agriculture land into a mixed-use, master planned development consisting of modern industrial facilities, a university, business park, general commercial and the VFW Tracy post. The property is located in San Joaquin County, south of the city of Tracy. The project is enclosed by Tracy Blvd. on the west, S Bird Rd. on the east, and is predominantly located between the California Aqueduct and the Delta Mendota Canal excepting the University, AB FAB, and VFW sites north of the Delta Mendota Canal, and a portion south of the California Aqueduct, and north of Highway 132. The project area is shown in Figure 1.

WATER DEMANDS

Domestic Water Demand

The San Joaquin Public Works (SJPW) Improvement Standard, Section 4-2.0, establishes that industrial development site water demands shall be set at levels of similar facilities, or a minimum of 1,800 gallons per day per acre (gpd/ac). The 1,800 gpd/ac water demand is inconsistent with, and substantially greater than, demand assumptions recently approved by the County for industrial developments. Following the County-approved demand patterns of nearby industrial developments and based on developer expectations of the reasonably foreseeable future uses within the proposed project, Schaaf & Wheeler has established a proposed average day demand of 10 gpd per 1,500 square feet of industrial building per shift and 10 gpd per 250 square feet of office space within the industrial development, per shift. For this project, it is assumed that industrial developments will work two shifts per day and that the industrial development is 95% warehouse and 5% office space.

For commercial parcels, the SJPW Improvement Standard requires 2,000 gpd/ac.

Schaaf & Wheeler assumed the University would accommodate an average of 600 students per day initially and 5,000 students per day at buildout, each generating an average day water demand of 12.81 gallons per day per student based upon research conducted. At buildout, 1,600 student beds are anticipated, bringing the total water use per day for those 1,600 students to 80 gallons per day.

The proposed development is in discussions to join the water system that currently serves Community Service Area 16 (CSA 16), to the south of the development. CSA 16 serves a total of 55 connections within

Par Country Estates and Hillside greens. An estimate of CSA 16's water demands is included in the water demand estimates, based on historic water use.

Due to the size of the Project, it is anticipated that construction will occur in phases. Refer to shading in Figure 1 indicating the initial phase of development.

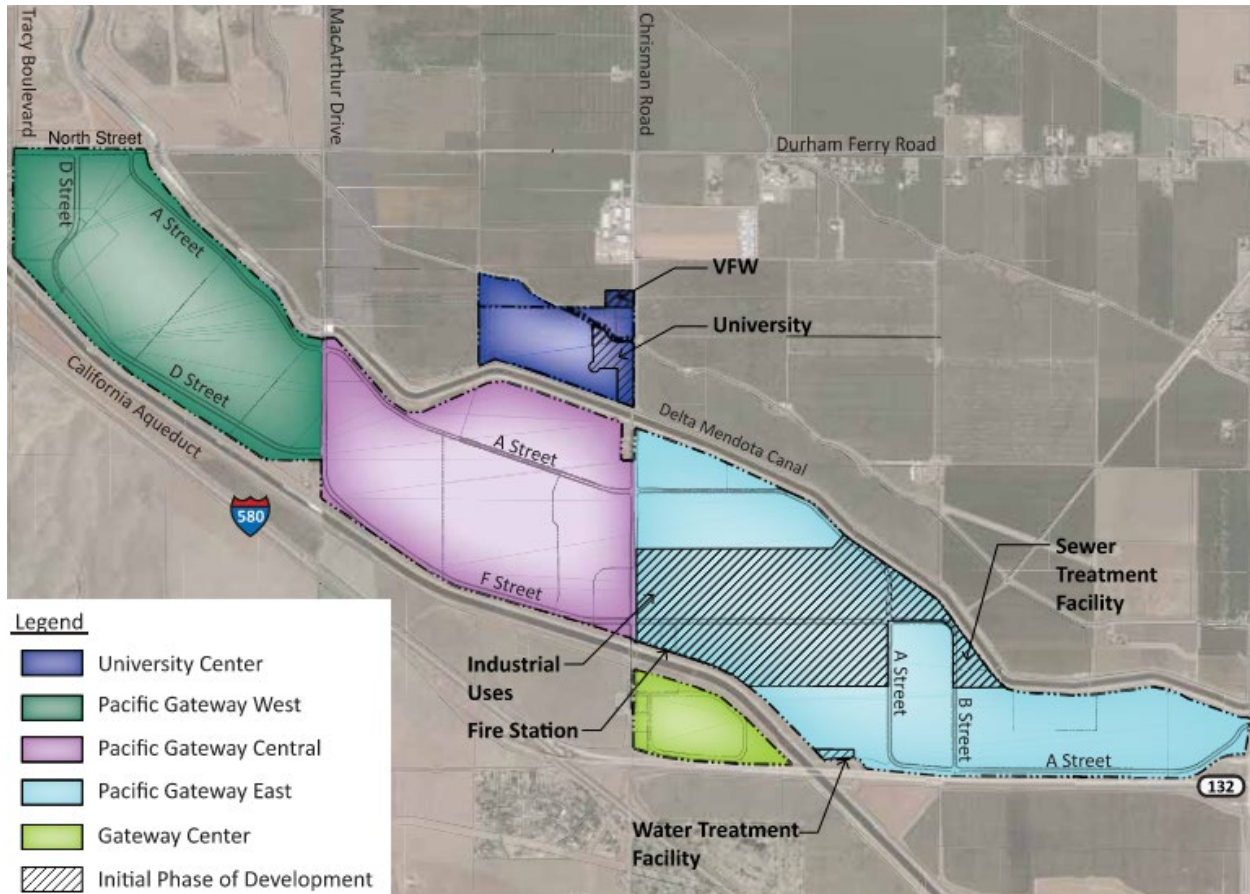


Figure 1. Project Area

Estimated building square footages are established for each of the areas identified. The estimated building size and associated average day water demands (ADD) for each area are summarized in Table 1.

The Maximum Day Demand (MDD) and Peak Hour Demand (PHD) are both essential when designing components of the overall water system for the project. Peaking factors of 2.2 (Maximum Day Demand) and 3.8 (Peak Hour Demand) were utilized from section 4-2.0 of the 2014 SJPW Standards.

Fire Water Demand

The expected fire flow demand requirements were established from the 2019 California Fire Code (CFC). With the large building sizes anticipated, a base fire flow of 8,000 gpm for 4 hours is assumed. However, it is presumed that the buildings will be equipped with fire suppression systems, that will allow for a significant reduction in fire flow to 2,000 gpm for 2 hours. To be conservative, the fire demand was set at 2,000 GPM for 4 hours. The final fire demand for the industrial warehouse buildings may be adjusted later in the planning process.

Table 1. Average Water Demands

Area	Landuse	Initial Phase Area (SF)	Buildout Area (SF)	Initial Phase Water Demand (GPD)	Buildout Water Demand (GPD)	Initial Phase Water Demand (AFY)	Buildout Water Demand (AFY)
Pacific Gateway East	Industrial	3,962,000	11,124,274	66,033	185,405	74.0	207.7
Pacific Gateway Central	Industrial	0	6,856,474	0	114,275	0.0	128.0
Pacific Gateway West	Industrial	0	6,168,882	0	102,815	0.0	115.2
Gateway Center	Industrial	0	525,370	0	8,756	0.0	9.8
Gateway Center	Hotel/Commercial	0	109,592	0	5,032	0.0	5.6
University Center	University*	25,000	1,379,150	7,686	171,554	8.6	192.2
University Center	VFW**	11,500	11,500	528	528	0.6	0.6
University Center	Industrial	0	93,000	0	1,550	0.0	1.7
University Center	Commercial	0	38,908	0	1,786	0.0	2.0
CSA-16	Residential***	NA	NA	123,290	123,290	138.1	138.1
Total		3,998,500	26,307,150	197,537	714,990	221.3	800.9
*University Assumes 600 students in first phase and 5,000 at buildout, with each student accounting for 12.81 GPD. Also assumes that 1,600 student beds are included at buildout with an additional water demand of 67.19 GPD per bed (80 GPD per bed total).							
**VFW treated as commercial							
*** CSA-16 parcels presumed to be on Septic and treated at place of use. CSA-16 estimate is based on peak record water use for CSA-16.							

Irrigation Water Demand

The anticipated irrigation demand for the project site was estimated using the Estimated Total Water Use (ETWU) calculations. It is assumed that fifteen percent (15%) of the total area will be designated as Landscape Area (LA). Additionally, since the project intends to join CSA 16, the irrigation calculation should include the required irrigation for the Golf Course served by CSA 16. In Total, the estimated landscape area is approximately 314 acres. The evapotranspiration (ET_o) of 48 inches is used for the project to match the nearby City of Tracy, as directed by the County. The Evapotranspiration Adjustment Factor (ETAF) is 0.45 (non-residential). Table 2 displays the irrigation demand for the development totaling 266.2 ac-ft/year. To determine these values the formula $ETWU = (Et) \times (0.62) \times [(ETAF \times LA)]$ was used.

Table 2. Estimated Irrigation Demand

Pacific Gateway Irrigation Demand Estimates		
Total Area	1577	Acres
Landscape Area %	15	%
Landscape Area	236.6	Acres
ET _o	48.4	in/year
ET _o	4.03	ft/year
ETAF	0.45	unitless
Irrigation Demand	266.2	ac-ft/year

WATER SUPPLY

Capacity

As previously discussed, the Project site is currently used for agricultural purposes, with much of the land used for growing almonds. Water for the existing site is supplied through existing groundwater wells and surface water turnouts. Documentation on the existing wells indicate capacities ranging from 50 gpm to 1,500 gpm.

According to the University of California Drought Management program, almond trees require between 41 and 54 inches of water per year. This translates to between 3.4 and 4.5 acre-feet per acre. The Project's current land owner has indicated that the properties are currently watered at a rate between 3.0 and 3.5 acre-feet per acre. With one acre-foot being equivalent to 325,851 gallons, and assuming the low end of required watering, this is an average flow of 2,678 gpd/acre (1.86 gpm/acre). For the proposed development, the predevelopment water demand is estimated at approximately 3.63 million gallons per day. Post development water demand is estimated at approximately 0.49 million gallons per day – approximately 1/7th the existing use.

Domestic Water Sources

It is anticipated that the Project's domestic water needs could be met through surface water supplies from the Byron-Bethany Irrigation District (BBID), use of existing groundwater wells, development of new groundwater wells, or some combination of these. The Project is located near County Service Area 16 (CSA-16), and it is possible the Project could be added and physically connect to the service area of CSA-16.

The Project's water source(s) will require treatment for domestic use to meet drinking water standards. Domestic water will be provided to the proposed project through a dedicated domestic water system.

Fire Water Sources

It is anticipated that the Project's fire water needs will be met through the domestic sources previously listed or through the construction of up to two groundwater wells, constructed in accordance with the State's standards or through an untreated surface water turnout. If untreated water is used for fire protection, it will be provided to the proposed project through a dedicated fire water system. If treated water is to be used for fire protection, it can be supplied through the domestic water system within the proposed project.

Irrigation Water Sources

It is anticipated that the Project's irrigation water needs will be met through use of recycled water in combination with untreated surface water from BBID. Irrigation water will be provided to the proposed project through a dedicated recycled water system.

WATER SYSTEMS

Domestic Water System

To determine required pipe sizing, a pipe network was created in EPANET, and peak hour water demands were placed strategically at locations to simulate maximum water demands at potential building location. In addition to the pipes, approximate booster pump station and storage tank sizes were determined.

Preliminary pipe sizes were determined using the EPANET model and vary between 6-inch through 12-inch pipe within the project. If domestic water is used for fire protection, it is assumed that the pipelines will be sized to meet the required fire flows as discussed later in this memorandum.

In addition to the system pipeline, storage tank(s) will be required for the domestic water system. State standards require a minimum storage volume equivalent to 8 hours of the MDD, plus the required fire flow demand. Since the fire system is entirely separate from domestic system, the domestic system is only required to store 8 hours of MDD flow. Table 3 summarizes the Project's required domestic storage in million gallons (MG). While only approximately 520,000 gallons of storage is required for domestic purposes, dead storage within tanks and commonly available storage tank requirements lead Schaaf & Wheeler to recommend a minimum of 700,000 gallons of domestic storage. This storage may be split between two reservoirs, depending on project phasing and ultimate pressure zone configuration. A booster pump system will be installed adjacent to the storage tank(s) to supply water to the domestic system.

Table 3. Required Domestic Storage

Area	Landuse	Initial Phase Area (SF)	Buildout Area (SF)	Initial Phase Water Storage (MG)	Buildout Water Storage (MG)
Pacific Gateway East	Industrial	3,962,000	11,124,274	0.0484	0.1360
Pacific Gateway Central	Industrial	0	6,856,474	0.0000	0.0838
Pacific Gateway West	Industrial	0	6,168,882	0.0000	0.0754
Gateway Center	Industrial	0	525,370	0.0000	0.0064
Gateway Center	Hotel/Commercial	0	109,592	0.0000	0.0037
University Center	University*	25,000	1,379,150	0.0056	0.1258
University Center	VFW**	11,500	11,500	0.0004	0.0004
University Center	Industrial	0	93,000	0.0000	0.0011
University Center	Commercial	0	38,908	0.0000	0.0013
CSA-16	Residential***	NA	NA	0.0904	0.0904
Total		3,998,500	26,307,150	0.1449	0.5243
*University Assumes 600 students in first phase and 5,000 at buildout, with each student accounting for 12.81 GPD. Also assumes that 1,600 student beds are included at buildout with an additional water demand of 67.19 GPD per bed (80 GPD per bed total).					
**VFW treated as commercial					
*** CSA-16 parcels presumed to be on Septic and treated at place of use. CSA-16 estimate is based on peak record water use for CSA-16.					

Fire Water System

Schaaf & Wheeler prepared a fire flow model, similar to the domestic model, using EPANET. The model revealed that for a fire flow of 2,000 gpm, 12-inch pipeline is sufficient.

As previously stated, the identified design fire flow assumed for this project is 2,000 gpm for a 4-hour duration. State standards require that the project store the fire flow, which will require 480,000 gallons of fire storage. Given dead volume within the storage tanks, it is estimated that a 600,000 gallon storage tank will be required. It may be possible to split this storage volume between multiple tanks, but a fire pump will be necessary at each tank location.

Irrigation Water System

Because little is known about the irrigation requirements at this time, no model has been created for the irrigation system. That said, because irrigation is a non-essential use, irrigation schedules can be adjusted to minimize system peaks and reduce system component size. It is estimated that 8-inch pipe will be sufficient to meet irrigation demands. The irrigation system will consist of a recycled water storage tank and booster station, located at the wastewater treatment plant.

WASTEWATER SYSTEMS

Sewage Collection System

The Project's wastewater will be collected from each parcel through a traditional wastewater gravity flow collection system that will be supplemented with lift stations at canal crossings and if dictated by the ultimate project design. Wastewater will be routed to the Project's wastewater treatment plant (WWTP), located at the south-eastern portion of the project. Figure 3 shows the conceptual layout of the collection system and the location of the WWTP.

Average day sewage flow is estimated to be 80% of the average daily potable water demand. Table 4 summarizes average daily sewage flow for the Project.

Manning's equation was used to generate a preliminary estimate of sewer pipe sizes within the project. It is estimated that 6-inch through 12-inch sewer pipes will be adequate for the Project. The Project's wastewater will be collected from each parcel through a traditional wastewater gravity flow collection system that will be supplemented with lift stations at canal crossings and if dictated by the ultimate project design. Wastewater will be routed to the Project's wastewater treatment plant (WWTP), located at the south-eastern portion of the project. Figure 3 shows the conceptual layout of the collection system and the location of the WWTP.

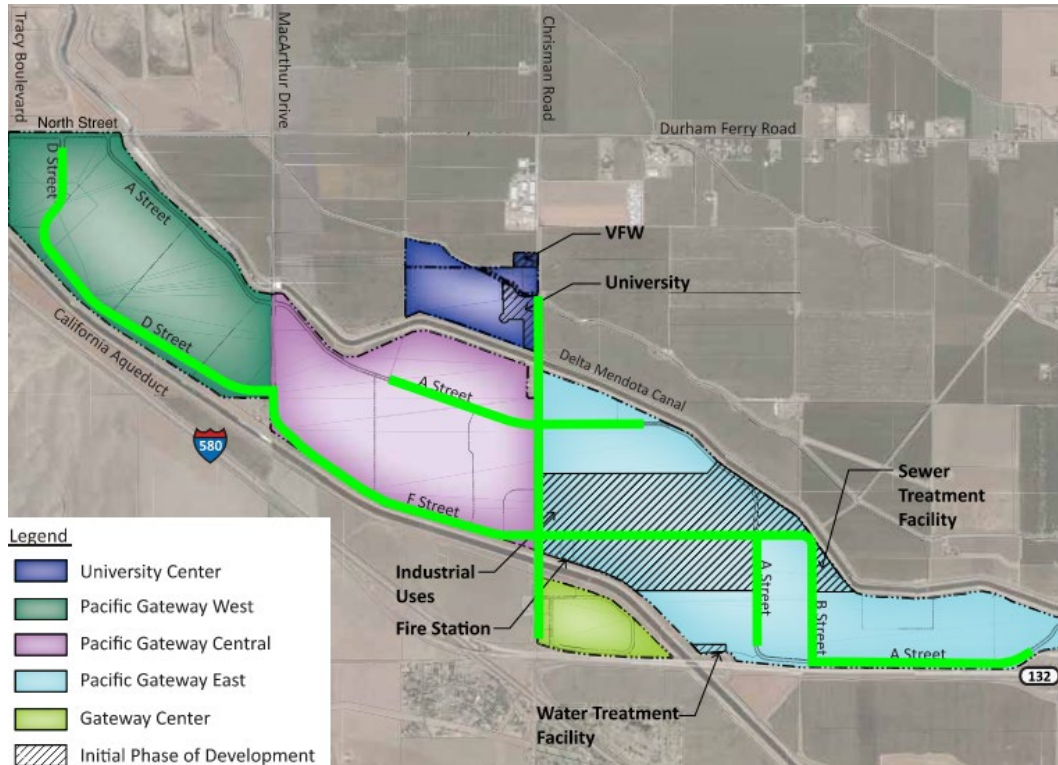


Figure 3. Wastewater Collection System

Table 4. Sewer Generation Rates

Area	Landuse	Initial Phase Area (SF)	Buildout Area (SF)	Initial Phase Water Demand (GPD)	Buildout Water Demand (GPD)	Initial Phase Sewage Generation (GPD)	Buildout Sewage Generation (GPD)
Pacific Gateway East	Industrial	3,962,000	11,124,274	66,033	185,405	52,827	148,324
Pacific Gateway Central	Industrial	0	6,856,474	0	114,275	0	91,420
Pacific Gateway West	Industrial	0	6,168,882	0	102,815	0	82,252
Gateway Center	Industrial	0	525,370	0	8,756	0	7,005
Gateway Center	Hotel/Commercial	0	109,592	0	5,032	0	4,025
University Center	University*	25,000	1,379,150	7,686	171,554	6,149	137,243
University Center	VFW**	11,500	11,500	528	528	422	422
University Center	Industrial	0	93,000	0	1,550	0	1,240
University Center	Commercial	0	38,908	0	1,786	0	1,429
CSA-16	Residential***	NA	NA	123,290	123,290	98,632	98,632
Total		3,998,500	26,307,150	197,537	714,990	59,398	473,360
*University Assumes 600 students in first phase and 5,000 at buildout, with each student accounting for 12.81 GPD. Also assumes that 1,600 student beds are included at buildout with and additional water demand of 67.19 GPD per bed (80 GPD per bed total).							
**VFW treated as commercial							
*** CSA-16 parcels presumed to be on Septic and treated at place of use. CSA-16 estimate is based on peak record water use for CSA-16.							

Sewage Treatment System

The project WWTP will be centered around a packaged membrane bioreactor wastewater treatment system with ultraviolet light disinfection. The WWTP will be expandable to accommodate phased construction, up to buildout. An operating permit issued by the Central Valley Regional Water Control Board (CVRWQB) will establish operating, performance, and reporting requirements for on-site treatment and disposal facilities.

It is proposed that the wastewater be treated to the Disinfected Tertiary Recycled Water Standard, suitable for use throughout the project site to irrigate landscaping and/or the surrounding farms in the area. The WWTP is proposed to include the following components, in quantities corresponding to the level of buildout:

1. A flow equalization system (sewage pump station wet well).
2. Rotary drum screens for screenings removal.
3. Compactor for screenings disposal at landfill.
4. Packaged MBR-based waste water treatment train.
5. Recycled water disinfection system.
6. Recycled water pump station.
7. Diesel engine-driven emergency generator.
8. Ancillary supporting equipment, as required.

Figure 4 depicts a preliminary WWTP site plan.

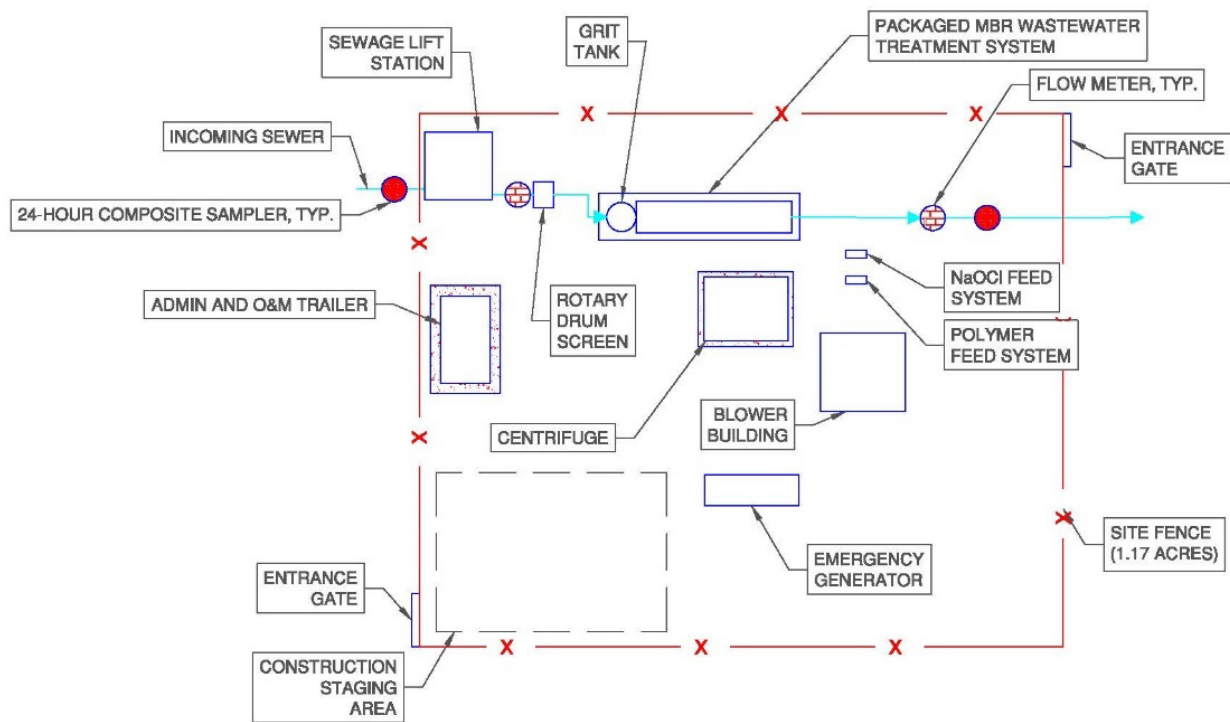


Figure 4. Preliminary WWTP Layout

APPENDIX B



Integrity • Experience • Performance

May 12, 2025

VIA EMAIL

Mike Sandhu
230 Sterling Drive, Suite 233
Mountain House, CA 95391

**Re: Pacific Gateway
Curtailment Wells
Potential Alternative Supply Well**

Dear Mike,

As discussed, Raney Planning & Management, together with Todd Groundwater, are preparing the Environmental Impact Report and Water Supply Assessment, respectively, for Pacific Gateway. The Water Supply Assessment presumes use of the Proposed Water Supply Well shown on Exhibit A (attached). We have tested this well's potability and, with treatment, it will meet State public water quality drinking standards. However, the Proposed Water Supply Well is in the Delta Mendota Subbasin, which is currently over-drafted.

To memorialize our conversations, you own Wells #4, #5 and #6 (Curtailment Wells) indicated on Exhibit A, which are also located in the Delta Mendota Subbasin. I understand you are willing to limit use of the Curtailment Wells by taking one or two offline in dry years.

We also discussed a Potential Alternative Supply Well identified on Exhibit A, which is in the Tracy Subbasin. Should this well be determined suitable to treat to State public water quality drinking standards, I understand you will make this well available to the Project.

I appreciate your cooperation. Thank you.

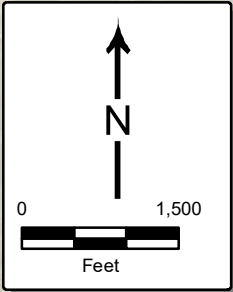
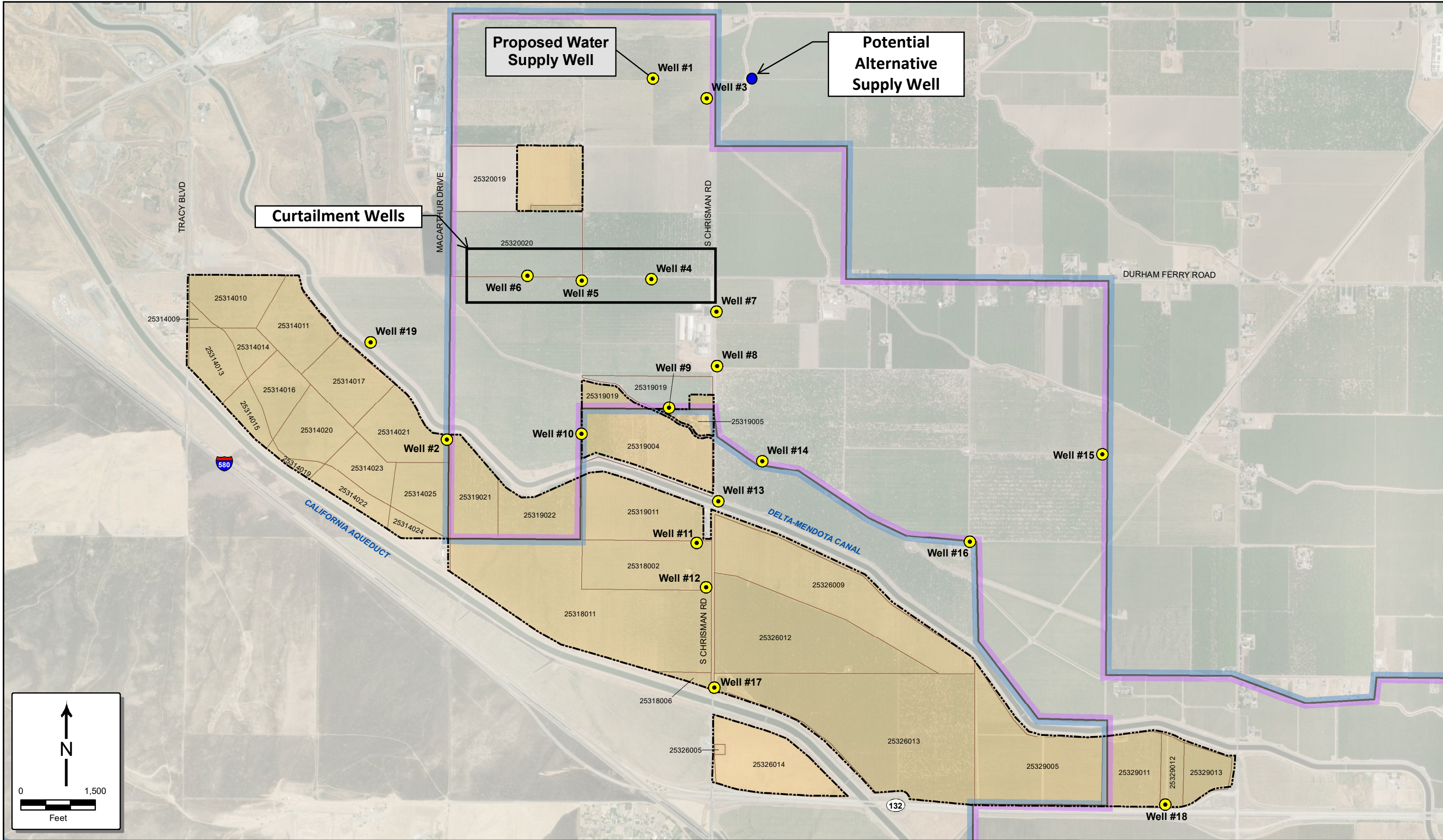
Sincerely,
Ridgeline Property Group

A handwritten signature in blue ink, appearing to read 'Steve Arthur', written over a light blue rectangular background.

Steve Arthur
Partner

Cc: Peggy Grillo, Ridgeline Property Group, VP Development

Exhibit A



Groundwater Basin

Tracy (5-022.15)

Project Boundary

Existing Well Location

Delta-Mendota (5-022.07)

Parcel Boundary

Raney Pacific Gateway Specific Plan Area

May 2025

TODD
GROUNDWATER

Figure 4
Raney Pacific Gateway
Current Well Locations