



Memorandum

TO: HONORABLE MAYOR
AND CITY COUNCIL

FROM: Kerrie Romanow

SUBJECT: SEE BELOW

DATE: October 24, 2022

Approved

Date

11/2/22

COUNCIL DISTRICT: 4

**SUBJECT: SAN JOSE MUNICIPAL WATER SYSTEM'S WATER SUPPLY
ASSESSMENT FOR THE ORCHARD PARKWAY DATA CENTER
PROJECT**

RECOMMENDATION

Approve San José Municipal Water System's Water Supply Assessment for the Orchard Parkway Data Center Project.

OUTCOME

City Council approval of the Water Supply Assessment (WSA) fulfills the requirements of the California Water Code and the California Environmental Quality Act.

BACKGROUND

A WSA has been prepared for the proposed Orchard Parkway Data Center Project (Project) as required by state law. The Project site is located at the intersection of Orchard Parkway and Component Drive in the San José Municipal Water System's (Muni Water) North San José/Alviso service area.

California Water Code Section 10910 (Senate Bill 610) requires water retailers prepare a water supply assessment for certain types of proposed projects, including one that would demand an amount of water equal to or greater than that required by a 500-dwelling unit project. The Project meets the criteria for preparing a WSA, as its total water demand will exceed that threshold. As a proposed small power plant, the Project owner will be submitting to the California Energy Commission for a Small Power Plant Exemption. As the lead agency for the Project, the commission will be preparing an Environmental Impact Report. This WSA provides information for the Environmental Impact Report.

The purpose of a WSA is analyzing and documenting sources of water supply, quantify water demands, evaluate drought impacts, and provide a comparison of water supply and demand so that a determination of water supply sufficiency can be made for large development projects in connection with the City's consideration of whether to approve the project.

Per Section 15155(b) of the CEQA Guidelines and Section 10910(g) of the California Water Code, the governing body of a public water system that will serve a "water demand project" must approve a water supply assessment at a regular or special meeting. In its role as the governing body for Muni Water, City Council is the appropriate decision-making body for approving the WSA prepared for the Project.

ANALYSIS

The WSA (see Attachment) assesses whether Muni Water's existing and future water supplies for the North San José/Alviso service area would be adequate to meet the Project's projected water demands. Although Muni Water does not currently provide water to the Project site, it is the water retailer for the area and will be supplying both potable and recycled water to the Project in the future.

The WSA projects the Project's maximum water demands at approximately 692 acre-feet per year, which is equivalent to approximately 0.6 million gallons per day. Of this total, 690 acre-feet per year, or over 99% of the total demand, is projected to be supplied from recycled water and two acre-feet per year, less than 1%, is projected to be supplied by potable water. Much of the recycled water demand (680 acre-feet per year) is attributable to the data center's industrial cooling.

The Project's normal potable demands fall into growth forecasts for industrial water use identified in Muni Water's 2020 Urban Water Management Plan, and there will not be a potable supply backup for the industrial cooling needs at this site. While recycled water supply is available to serve the increased recycled water demand associated with the Project, the Urban Water Management Plan did not include this specific project in the growth assumptions.

As discussed in the WSA, potable water is provided to Muni Water's North San José service area from the San Francisco Public Utilities Commission. In 2009, Muni Water entered into both a master Water Supply Agreement (the agreement common to all Bay Area Water Supply and Conservation Agency agencies), and a Water Sales Contract (specific to Muni Water) with the San Francisco Public Utilities Commission. The City currently has a contract for up to 5,041 acre-feet per year (4.5 million gallons per day); this contract is both temporary and interruptible. The Water Supply Agreement with San Francisco Public Utilities Commission was amended and restated in 2018 and will remain in place until June 30, 2034. In addition, a 2021 Amended and Restated Water Supply Agreement is being circulated among the parties for signature. However, that amendment does not substantively alter the City's rights as described in the WSA.

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CONCLUSION

The WSA identifies the water supply sources available to meet the Project's potable and recycled water demands, and approval of the document will meet CEQA requirements identified within the California Water Code.

EVALUATION AND FOLLOW-UP

No additional follow-up action with City Council is expected at this time.

CLIMATE SMART SAN JOSE

The recommendation in this memorandum has no effect on Climate Smart San José energy, water, or mobility goals.

PUBLIC OUTREACH

This memorandum will be posted on the City's Council Agenda website for the November 15, 2022 City Council meeting.

COORDINATION

This memorandum was coordinated with the City Attorney's Office, the City Manager's Budget Office, and the Department of Planning, Building, and Code Enforcement.

COMMISSION RECOMMENDATION/INPUT

No commission recommendation or input is associated with this action.

CEQA

Statutorily Exempt, File No. PP17-001, Feasibility and Planning Studies; CEQA Guidelines Section 15262.

/s/

KERRIE ROMANOW

Director, Environmental Services

For questions, please contact Jeff Provenzano, Deputy Director at (408) 277-3671.

Attachment – Draft Water Supply Assessment: Orchard Park Data Center

ATTACHMENT

DRAFT

WATER SUPPLY ASSESSMENT

ORCHARD PARKWAY DATA CENTER

September 2022



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Alameda, CA 94501

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www.toddgroundwater.com

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1. INTRODUCTION

1.1. PROJECT DESCRIPTION

Environmental Systems Design Inc. (ESD) is working on behalf of a client to develop two new data center buildings near the San José Airport. San José Municipal Water System (SJMWS) is providing a Water Supply Assessment (WSA) in advance of ESD's request for a Special Use Permit from California Energy Commission in August. An Environmental Impact Report (EIR) and related environmental documentation are also being developed to comply with CEQA.

The Orchard Parkway Data Center will consist of two buildings, designated SJC04 and SJC06 at the west corner of the intersection at Orchard Parkway and Component Drive in San José, California. Both buildings are four stories and 315,639 square feet each with up to 42 full-time staff and about seven visitors per day. SJC04 and SJC06 buildings will each house four data centers, called Colos (ESD, 2022b).

Domestic water demand is expected to be small and met by an estimated 1.35 acre-feet per year (AFY) of potable water. An estimated water demand of 690 AFY would be for mechanical cooling and for irrigation water, which can be served by recycled water. The SJMWS would be the retailer to the Project. **Figure 1** shows the general location of the data center located within the service area of SJMWS.

1.2. BACKGROUND

The California Water Code section 10910 (also termed Senate Bill 610 or SB610) requires that a water supply assessment (WSA) be provided to cities and counties for projects (of a specified type and size) that are subject to the California Environmental Quality Act (CEQA). Under the California Water Code Section 10912, a residential or commercial "project" is any of 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 units 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 Orchard Parkway Data Center Project includes an approximate water use of 692 AFY. The total water demand will exceed the threshold for the amount of water required by a 500-dwelling unit project. For comparison, water demand for dwelling units in San José is on the order of 0.2 AFY per unit, or about 100 AFY for 500 units. It is noted that only about 1.4 AFY will be potable water.

The City of San José recognizes the Orchard Parkway Data Center as subject to CEQA and SB610. Cities and counties are mandated to identify the public water system that might provide the Project's water supply and then to request a WSA, which includes a discussion regarding whether the public water system's total projected water supplies (available in normal, single dry, and multiple dry 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. The SJMWS is the public water provider for the Orchard Parkway Data Center and the water supply and demand information for the SJMWS is presented herein.

A foundational document for preparation of the WSA is the City of San José Urban Water Management Plan (UWMP). The 2020 UWMP, which was adopted in June 2021, is available and relevant data have been updated by the City where applicable. WSAs and UWMPs both require water supply reliability information to be provided for the water service area in five-year increments over a 20-year planning horizon.

1.3. PURPOSE

The purpose of this WSA is to document the City's existing and future water supplies for its SJMWS service area and compare them to the area's future water demand including that of the proposed Project. This comparison, conducted for both normal and drought conditions, is the basis for an assessment of water supply sufficiency in accordance with the requirements of California Water Code section 10910 (Senate Bill 610).

2. PROJECT WATER DEMAND AND SUPPLY

This section addresses water demands for the proposed land uses. Both potable and recycled water will meet water demands for this project. The primary water uses for this project will be for domestic usage, the cooling system, and irrigation. Domestic water will be supplied by potable water, while demands from the other water uses will be met with recycled water.

2.1. EXISTING WATER USE

The proposed Orchard Parkway Data Center site is largely vacant and has been for some time. While existing water use of the Development Area may include minor irrigation, water use over the past five years has been minimal and for this WSA, it is assumed to be 0 AFY.

2.2. ESTIMATED FUTURE WATER DEMAND

Estimation of the future water demand for the proposed Project involves application of water demand factors. Commercial water usage can be calculated using demand factors by square footage of the facility or by number of employees at the facility.

The only demand for potable water will be domestic use by the facility employees. There is no water demand factor specific to data centers, so the water demand factor of 29 gpd/employee for “office or industrial jobs” in North San José (Envision San José, 2010) was used to calculate the total domestic demand.

This water demand factor assumes one shift per day, with employees working only on weekdays. The Domestic Water Technical Memorandum (ESD, 2022a) for this project estimates that there will be 42 employees present during a typical Monday-Friday shift, as well as five employees present during the second and third shifts on weekdays and five employees present for three daily shifts on weekends. Consequently, the total annual demand was calculated to account for employees on both weekdays and weekends.

Table 1 documents the domestic water use calculations. Total demand assumes that 52 employees would be onsite daily during weekdays and 15 employees onsite daily during weekends, amounting to a demand of 1,508 gpd on weekdays and 435 gpd on weekends. This results in a weighted average of 1,201 gpd over the course of a week. The total annual domestic water usage would be 438,828 gallons per year, or 1.35 AFY.

2.3. ESTIMATED FUTURE RECYCLED WATER USE

Most of the water used by the Orchard Parkway Development will be recycled water. Recycled water will be used for the facility’s cooling system and outdoor irrigation. It is understood that this facility will only use recycled water for its cooling facility.

The data center operations produce heat that must be cooled. Recycled cooling water will be pumped from fluid coolers into indoor air handling units with cooling coils. Several innovations allow this project to consume less water than similar data centers. First, this site eliminates mechanical refrigerating, reducing the total water requirement for the evaporative project. The project design provides temperature and humidity conditions to reduce water requirements, and it will utilize innovative heat rejection equipment designed to conserve water.

The annual recycled water demand for cooling was calculated based on the total energy demand (for 76.8-megawatt IT load) and the local ambient temperatures variations, factoring in the water conservation techniques. The facility is expected to operate 24 hours a day and 7 days a week throughout the year. The annual recycled water consumption for cooling is estimated to be 221.5 million gallons per year, or 679.8 AFY, as shown in **Table 2**.

An estimate of the total water demand for irrigation was calculated by ESD based on the proposed landscape palette for the site. Outdoor landscape is expected to cover 300,000 square feet, about 6.9 acres. The estimated volume of water needed to support the landscaping is 3,300,000 gallons or 10.2 AFY. Total water supply for irrigation is expected to be satisfied by recycled water (ESD, 2022c).

In summary, this project is estimated to utilize 679.8 AFY of recycled water for cooling operations and 10.20 AFY for irrigation (**Table 2**). In total, it is anticipated to use 690.0 AFY of recycled water.

2.4. FUTURE WATER CONSERVATION

The sole use for potable water is indoor domestic use. The plumbing fixtures will be LEED certificated including ultra-low flow toilets. No additional water conservation is expected for this indoor use. Recycled water will be used to satisfy the cooling and irrigation demand. As recycled water is a drought resilient water supply, it is not anticipated that the project will reduce water use during drought conditions.

2.5. PROJECT WATER SUPPLY

The project plans to use potable water for domestic uses only and recycled water for the cooling and irrigation. The project proponent has plans to buildout the recycled water infrastructure and is responsible for connecting the Data Center to the existing SJWMS infrastructure. There will not be a potable supply back up for the cooling at the project site.

3. SAN JOSÉ MUNICIPAL WATER SYSTEM DEMAND

This section summarizes water demands for the SJWMS service area, the proposed retailer for the Project. The first part describes the factors affecting total water demand, including climate, population, and employment, plus the mix of customer types, such as residential, commercial, agricultural, and industrial. The second part documents water demands, not only under normal climatic conditions, but also during drought.

Figure 2 shows the SJMWS service area and the project location in the North San José portion of the SJMWS service area.

3.1. CLIMATE

Climate has a considerable influence on water demand on a seasonal and annual basis. This influence increases with the portion of water demand for outside uses, specifically landscape irrigation.

Table 3 summarizes representative climate data for the City, including average monthly and annual rainfall and evapotranspiration (ETO) from the California Irrigation Management Information System, Union City (CIMIS) station (CIMIS, 2022). The City has a semi-arid, Mediterranean climate, characterized by dry summers and wet winters with year-round moderate-to-warm temperatures. Reflecting this pattern, water demand in the City is greater in the summer than in the winter.

As it would for the entire region, climate change may affect future water supply availability for the City by reducing water availability, changing local precipitation patterns, and increasing water demands. As discussed in greater detail below, the City largely relies on groundwater but is increasing its recycled water supply source to help offset potable demand.

3.2. POPULATION

City population, a key factor in water demand, is analyzed in the 2020 UWMP. **Table 4** reproduces the UWMP population and employment values for the City's water service area with projections to 2045.

3.3. CURRENT WATER USE SECTORS AND WATER DEMAND

Table 5 documents the historical water demand for the City's service area by water use sectors for 2020 from the most recent UWMP. The water use sectors (customer types) are listed on the left. Recycled water demand is currently 4,097 AFY and is used for non-potable demands for irrigation and industrial uses (such as Metcalf Energy Center).

3.4. PROJECTED WATER DEMAND

Table 6 summarizes the projected water demands for the City's service area from 2025 to 2045. This table is from the SJMWS 2020 UWMP. The 21,643 AFY used in 2020 (**Table 5**) is expected to almost double to 40,965 AFY by 2045.

The projected water demand is primarily based on population growth and land use projections, as indicated in the San José Envision General Plan (2010). It was assumed in the 2010 General Plan that the water demand would increase in proportion to population and employment. The 2020 UWMP has incorporated per capita water demand reduction due to

conservation, particularly for residential customers. The potable demand for this project is within the increase projected by the General Plan and UWMP.

Recycled water demand is expected to increase by 80 percent from 2020 to 2045 (City of San José, 2021). Recycled water demand for this project is not included in these projected growth estimates; however, recycled water supplies are available to meet this project's demands.

4. SAN JOSÉ MUNICIPAL WATER SYSTEM WATER SUPPLY

4.1. WATER SUPPLY

The water supply for the North San José/Alviso area currently is provided primarily by the City of San Francisco Public Utilities Commission (SFPUC) Hetch Hetchy water system, with local groundwater serving as a backup water supply. Recycled water has been used in the area since 1999. Proposed sources of water supply include additional imported water from the Hetch Hetchy water system, groundwater from the Santa Clara Valley groundwater basin (which is managed by Valley Water in collaboration with local water agencies), and additional recycled water. In addition, water conservation is anticipated to reduce water demand from current projected amounts.

The main source of water supply in the North San José/Alviso service area is imported water from SFPUC. Given that the Project mostly involves recycled water, it is noted that annual deliveries in 2020 for the entire SJMWS service area was over 4,000 AFY, and 1,136 AF was delivered to the north San José area (Harvie, 2022).

4.2. WHOLESALE WATER SUPPLY

4.2.1. SFPUC

North San José/Alviso is provided water from the SFPUC Hetch Hetchy aqueduct by means of two turnouts. In 2009, SJMWS accepted both a master Water Supply Agreement (the agreement common to all Bay Area Water Supply and Conservation Agency (BAWSCA) agencies), and a Water Sales Contract (specific to SJMWS). The City of San José currently has a contract for up to 5,041 AFY (4.5 million gallons per day or mgd); this contract is both temporary and interruptible. The Water Supply Agreement with SFPUC was amended and restated in 2018 and now will remain in place until June 30, 2034. In addition, a 2021 Amended and Restated Water Supply Agreement is being circulated among the parties for signature. However, that amendment does not substantively alter the City's rights as described in this WSA.

The supply for the City of San José is interruptible but the supply cannot be interrupted until ten years after San José has received notice of SFPUC's intention to reduce or interrupt deliveries. BAWSCA continues to work on long-term reliable water supply strategies to ensure future supply to the member agencies.

As part of the Water Supply Agreement, SJMWS may purchase excess water, providing that the combined purchases of SJMWS and the City of Santa Clara do not exceed 9 mgd. SJMWS is committed to purchasing the maximum amount of water available and reducing its reliance on other sources due to the uncertainties regarding the availability and sustainability of the groundwater basin. Links to the most recent Water Supply Agreement and Water Sales Contract are included in the references.

4.3. GROUNDWATER SUPPLY (VALLEY WATER)

Groundwater has long been a source of supply for SJMWS. Groundwater is available from the Santa Clara Valley groundwater basin, which is managed by SCVWD in collaboration with other agencies. SJMWS currently operates groundwater production wells in the Coyote and Santa Clara subbasins, which together comprise the larger Santa Clara Valley Groundwater Basin (designated by the DWR as groundwater basin number 2-9.02). The locations of the subbasin boundaries are provided on **Figure 1**. The City of San José currently has four wells in the project's North San José service area, two of which are permitted for active use; additional City wells located in other service areas are not able to provide water supply to the project's service area.

4.3.1. Santa Clara Valley Groundwater Basin

The Santa Clara Valley Groundwater Basin is divided into three main subareas, Santa Clara subbasin, Coyote subbasin, and Llagas subbasin, shown on **Figure 1**.

Most SJMWS service areas, including North San José, Evergreen, and Edenvale, overlie the Santa Clara subbasin, part of the larger Santa Clara Valley Groundwater Basin, designated by the Department of Water Resources (DWR) with groundwater basin number 2-9.02 (DWR, 2004). The Santa Clara subbasin occupies a structural trough between the Diablo Range on the east and the Santa Cruz Mountains on the west. It extends from the northern border of Santa Clara County to Coyote Narrows. The Santa Clara valley is drained to the north by tributaries to San Francisco Bay including Coyote Creek and the Guadalupe River.

The principal water bearing formations of the Santa Clara subbasin are alluvial deposits of unconsolidated to semi-consolidated gravel, sand, silt, and clay (DWR, 2004). The permeability of the valley alluvium is generally high and most large production wells derive their water from it (DWR, 1975). The southern portion and margins of the subbasin are unconfined areas, characterized by permeable alluvial fan deposits. A confined zone is created by an extensive clay aquitard in the northern portion of the subbasin (SCVWD, 2001). This aquitard divides the water-bearing units into an upper zone and a lower zone; the latter is tapped by most of the local wells.

Groundwater in the Santa Clara subbasin is recharged through natural infiltration along stream channels and by direct percolation of precipitation. In addition, SCVWD maintains an active artificial recharge program. Groundwater flow generally is from the margins of the basin toward San Francisco Bay.

4.3.2. Water Resources Management

Valley Water is the groundwater management agency in Santa Clara County (as authorized by the California legislature under the Santa Clara Valley Water District Act) and has the primary responsibility for managing the Santa Clara Valley groundwater basin. Valley Water has worked for decades to minimize subsidence and protect groundwater resources through artificial recharge of the groundwater basin, water conservation, acquisition of surface water and imported water supplies, and prevention of water waste.

The Sustainable Groundwater Management Act (SGMA), passed in 2014, required medium and high priority basins to establish Groundwater Sustainability Agencies (GSA) and to prepare Groundwater Sustainability Plans (GSPs) or Alternatives to GSPs (Alternative Plan). Santa Clara subbasin is a high priority basin that is not critically overdrafted. SGMA listed Valley Water as one of 18 exclusive agencies to comply with SGMA and officially began the GSA for the Santa Clara subbasin. Valley Water submitted their 2016 Groundwater Management Plan (GWMP) as their first Alternative Plan to DWR in 2016. In 2021, Valley Water submitted an updated GWMP to fulfill the periodic evaluation of the Alternative Plan under SGMA. The 2021 GWMP contains detailed information about groundwater management, hydrogeological conceptual model of the basin, an update of basin conditions (including groundwater levels and water quality, conjunctive water management plans, basin management programs (including minimum thresholds), and detailed descriptions of their monitoring networks (Valley Water, 2021).

Valley Water is dedicated to providing a reliable water supply to the people and businesses of Santa Clara County. In order to meet these water needs in the future and manage potential risk; Valley Water maintains a flexible management of the water resources. The groundwater supply management program is intended to replenish the groundwater basin, sustain the basin's water supplies, help mitigate groundwater overdraft, and sustain storage reserves for use during dry periods. Valley Water operates artificial recharge systems to augment groundwater supply. Valley Water also conserves local surface water, provides imported water, operates water treatment plants, maintains water conveyance systems, supports water recycling, and encourages water conservation. Valley Water works to maintain each subbasin at "full" capacity, banking water locally to protect against drought or emergency water supply interruptions. This strategy allows Valley Water to carry over surplus water in the subbasins from wet to dry periods.

4.3.3. Available Groundwater

The total available groundwater in a normal year, or sustainable yield, of the Santa Clara Subbasin is determined by Valley Water. While Valley Water is the Groundwater Sustainability Agency and responsible for overseeing the sustainable operation of the basin, they do not directly provide groundwater to retailers like SJMWS. Valley Water maintains local sources, recharge ponds, and imported water contracts as potential tools in the operation of the basin (Valley Water, 2021).

SJMWS - North San José

The City of San José currently has four wells in North San José (the area of the proposed project). The wells, installed in 1981 and 1983, are 600 to 615 feet in depth with screens generally between 200 and 615 feet in depth. The combined capacity of the four wells is reported at 6,500 gpm (Harvie, 2022). However only two of the wells are active wells in routine use, while the other two are maintained and permitted as a backup, emergency supply source. No additional wells would be needed to meet the small potable demand for the proposed project.

No entitlement or water rights to groundwater are indicated because the Santa Clara Valley groundwater basin has not been adjudicated and groundwater entitlements or rights have not otherwise been defined.

4.4. RECYCLED WATER

The City of San José operates the South Bay Water Recycling (SBWR) system and distributes recycled water produced at the San José-Santa Clara Water Regional Wastewater Facility located in Alviso. The SBWR program delivers disinfected tertiary treated wastewater from the RWF through an extensive recycled water distribution system consisting of over 150 miles of pipeline. The recycled water is used for non-potable purposes such as agriculture; industrial cooling and processing; and irrigation of golf courses, parks, and schools. During the peak summer season, SBWR diverts between 15 and 20 MGD of recycled water for irrigation and industrial uses to over 900 customers throughout San José, Santa Clara, and Milpitas (City of San José, 2021).

Recycled water can provide for landscape irrigation, ornamental features (fountains), toilet flushing, and specific industrial uses. In 2020, total recycled water use in SJMWS service areas amounted to 4,097 AF.

SJMWS currently has programs in place to encourage the use of more recycled water, including:

- Lower cost of recycled water than potable water.
- Regulatory approval for recycled water usage.
- Ordinances requiring the use of recycled water for irrigation where available.
- Prohibition against the use of potable water for uses appropriate to recycled water.
- Support for developers' expansion of system to areas where recycled water is unavailable.

By 2045, recycled water use in SJMWS is expected to be 7,413 AFY, an 81 percent increase to the current volumes (City of San José, 2021). This WSA only looks at the long-term water system capacity. The ability of the recycled water to meet the peak demand of the project will be determined by the infrastructure designed and implemented by the project proponent.

4.5. WATER SUPPLY IN NORMAL AND DROUGHT PERIODS

Table 7 summarizes current water supply sources by volume in 2020 and **Table 8** shows projected water supply reported in five-year increments in order to provide a long-term overview. The additional recycled water supply for the project is added to the projected system wide recycled water supply as documented in the UWMP. While the recycled water supply is available to serve the increased demand, the UWMP did not include this specific project in the growth assumptions. As indicated, SJMWS relies on multiple sources for water supply, in the project service areas, which include imported water from the San Francisco Public Utility Commission (SFPUC), groundwater from the Santa Clara Valley groundwater basin (which is managed by Valley Water in collaboration with local water agencies), and

additional recycled water. In addition, water conservation is anticipated to reduce water demand from current projected amounts.

While **Tables 7 and 8** document past, current and future water supply under normal conditions, **Tables 9, 10 and 11** quantify the amount of potable water supply during normal and drought conditions, for current conditions and for projected conditions within the SJMWS service area. These tables were presented in the SJWMS 2020 UWMP to document the expected changes in potable supplies. Recycled water supplies are not included in these tables as no change is expected from normal conditions.

Water supplies in a single dry year are shown in **Table 10**. During dry periods, a reduction of imported water volume from SFOUC is expected, based on their supply reliability analysis. The difference between water supply and demand during a single dry year is expected to be met through conservation measures. These measures are identified and discussed in SJMWS' Water Shortage Contingency Plan.

Table 11 shows the available potable water supplies for multiple dry years, similar to those that occurred from 1987 through 1992 and 2012 through 2015. As with the single dry year, SFPUC supplies would be reduced in line with the reliability analysis, 46 to 64 percent. Valley Water supplies, both imported water and groundwater, would also be reduced. However, Valley Water plans to manage the reductions through short term water conservation, use of reserves, and supplemental water sources.

In the first year of drought, Valley Water would rely on available reserves. In subsequent years, as reserves are depleted, Valley Water would need to rely on short-term water use reductions and supplemental supplies. SJMWS would coordinate regularly with Valley Water during any dry period to utilize supplies which are most readily available (City of San José, 2021).

5. COMPARISON OF SUPPLY AND DEMAND

The WSA must compare supply and demand for the groundwater basin where the Project is located. **Tables 9, 10, and 11** show water supply projections for the SJMWS Service Area in five-year increments to 2045 for normal, single-dry, and multiple-dry years, respectively. The tables exclude recycled water, which is drought resilient and 100 percent available in all years. **Tables 9, 10, and 11** are based on the assumptions outlined in the UWMP and summarized in Section 4.5. While the demand is expected to be higher than the project supply, the small shortfalls will be met through water conservation and programs detailed in the Water Shortage Contingency Plan (WSCP).

Potable water supply is sufficient to meet the projected domestic use (1.35 AFY). Recycled water supply is sufficient to meet the project cooling uses and irrigation demand (679.8 AFY).

6. CONCLUSIONS

Findings of this WSA are summarized below.

- The Orchard Parkway Data Center is located in the North San José portion of the SJMWS service area.
- A WSA as per SB610 is required because the project is anticipated to use more than the equivalent demand of 500 residences.
- SJMWS, the Project water supply retailer, has a water supply portfolio including local groundwater, imported water from SFPUC and/or Valley Water, and recycled water.
- Sufficient water supplies are available to serve the Project's demands including the small potable use and the non-potable demand to be served by recycled water.

Contingent upon the development of the appropriate infrastructure for recycled water, the project has sufficient water supply.

7. REFERENCES

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ESD, Domestic Water Service, July 2022a.

ESD, Projected Water Usage and Clear Water Discharge for SJC04 and SJC06 Data Centers, July 2022b.

ESD, Recycled Water Service of Irrigation Water, June 2022c.

Harvie, Nicole, personal communication, July 2022.

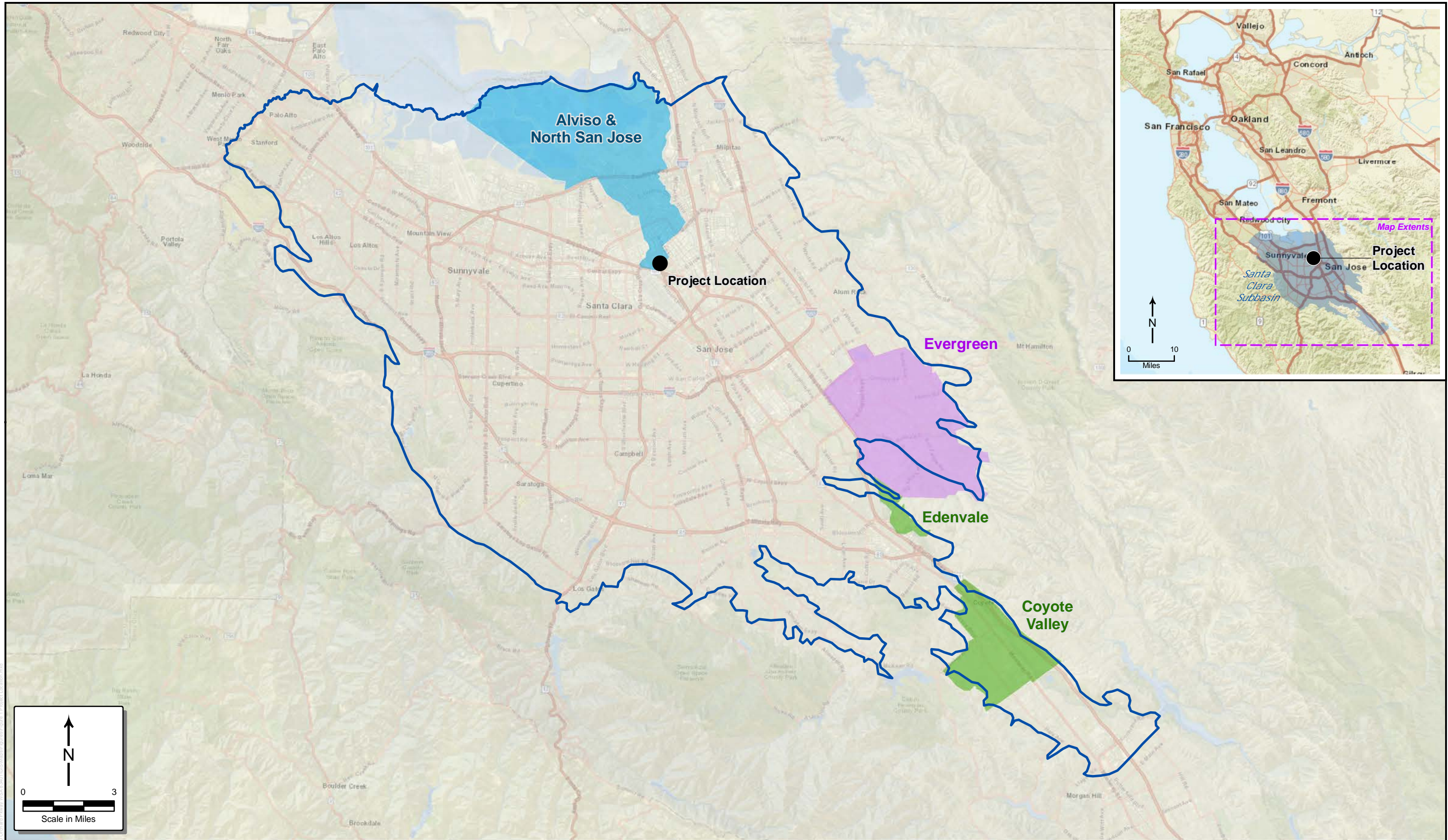
San Francisco Public Utility Commission (SFPUC), Amended and Restated Water Supply Agreement between the City and County of San Francisco and Wholesale Customers in Alameda County, San Mateo County and Santa Clara County, <https://records.sanjoseca.gov/Contracts/CON634897-002.pdf>

San Francisco Public Utility Commission (SFPUC), Water Sales Contract between City and County of San Francisco and City of San José, <https://records.sanjoseca.gov/Contracts/CON6348980.PDF>

San José Municipal Water System, Urban Water Management Plan 2020, June 2021.

Santa Clara Valley Water District (SCVWD), Santa Clara Valley Water District Groundwater Management Plan, July 2001.

Valley Water, Groundwater Management Plan for Santa Clara and Llagas Subbasins, 2021.



- Project Location
- Santa Clara Subbasin
- Alviso & North San Jose Service Areas
- Evergreen Service Area
- Edenvale and Coyote Valley Service Areas

July 2022		Figure 1 Project Location with Municipal Water System Service Areas

Table 1. Estimation of Future Potable Water Demand, Project

Water Demand	Water Demand Factor ¹	Weekday Demand	Weekend Demand	Weighted Avg Daily Demand (gpd)	Avg Demand (AFY)
Domestic Use for Employees	29 gpd/person	1,508	435	1,201	1.35
Total				1,201	1.35

Notes:

¹ North San Jose factor from San Jose Envision WSA, 2010

² Estimated a 2.5 factor to estimate peak water demand from average demand

Table 2. Estimation of Future Recycled Water Demand, Project

Water Demand	Avg Daily Demand (gpd)	Avg Demand (AFY)
Cooling System ¹	606,886	679.80
Irrigation ²	9,106	10.20
Total	615,992	690.00

Notes:

1 Source: ESD 2022b

2 Source: ESD 2022c

Table 3. Local Climate Data

Month	Average Total Monthly Evapotranspiration (2010-2021)	Average Total Monthly Precipitation (in) (2010-2021)	Average Temperature (F) (2010-2021)	Average Minimum Temperature (F) (2010-2021)	Average Maximum Temperature (F) (2010-2021)
January	1.4	2.6	48.4	39.0	59.4
February	2.0	2.1	50.9	40.8	62.1
March	3.2	2.7	53.8	43.8	64.5
April	4.5	1.4	56.8	47.4	67.6
May	5.4	0.5	58.8	50.5	69.5
June	6.1	0.1	62.9	53.9	74.8
July	6.3	0.0	64.5	56.2	75.9
August	5.6	0.0	64.7	56.6	76.4
September	4.4	0.1	64.3	54.4	77.1
October	3.2	1.0	60.8	49.4	74.2
November	1.7	1.6	53.0	42.7	65.0
December	1.3	3.3	48.3	39.0	59.0
Annual	45.1	15.6	57.3	47.8	68.8

Source: California Irrigation Management Information Systems (<https://cimis.water.ca.gov/>) from Station 171, Union City

Table 4. Current and Projected Population and Employment in SJMWS Service Area

Year	2020	2025	2030	2035	2040	2045
Population	132,644	150,368	168,092	194,985	217,685	222,661
Jobs	90,001	94,006	95,626	100,473	111,355	118,367

Source: UWMP 2020 Tables 3-2, 3-3

Table 5. Historical Water Demand by Water Use Sectors (AFY)

Water Use Sector	Actual 2020 Water Demand (AFY)	
Water Use Sector	Level of Treatment when delivered	Volume (AFY)
Single-Family Residential	Drinking Water	7,920
Multi-Family Residential	Drinking Water	2,694
Commercial	Drinking Water	1,040
Industrial	Drinking Water	1,837
Institutional/Government	Drinking Water	176
Landscape Irrigation	Drinking Water	2,873
System Losses/Fire Service		1,006
Recycled Water	Non Potable Water	4,097
TOTAL		21,643

Source: UWMP 2020 Tables 4-1 and 4-3

Table 6. Projected Water Demand by Water Use Sectors (AFY)

Customer Type	Projected Water Demand (AFY)				
	2025	2030	2035	2040	2045
Potable Demand					
Single-Family Residential	9,107	10,293	10,917	12,338	12,621
Multi-Family Residential	2,932	3,171	3,463	3,763	3,849
Commercial/Institutional	1,642	1,920	2,436	3,376	3,446
Industrial	2,562	3,197	4,086	5,546	5,665
Institutional/Governmental	208	239	286	356	365
Landscape Irrigation	3,401	3,930	4,586	5,584	5,712
Losses	1,228	1,406	1,569	1,852	1,894
Non-Potable Demand					
Recycled Water	4,776	5,456	6,279	7,368	7,413
TOTAL	25,856	29,612	33,622	40,183	40,965

Source: 2020 UWMP Table 4-2 (with recycled water)

Table 7. Current Water Supply (AFY)

Supply Type	Existing Water Supply (AFY)
	2020
Groundwater	885
Imported - Valley Water	11,930
Imported SFPUC	4,731
Recycled Water	4,097
TOTAL	21,643

Source: 2020 UWMP Table 6-9

Table 8. Projected Water Supply (AFY)

Supply Type	Projected Water Supply (AFY)				
	2025	2030	2035	2040	2045
Potable Supply (Valley Water, Groundwater, SFPUC)*	21,080	24,156	27,343	32,815	33,552
Recycled Water Supply - System wide*	4,776	5,456	6,279	7,368	7,413
Recycled Water Supply - Project	690	690	690	690	690
TOTAL	26,546	30,302	34,312	40,873	41,655

*Source: 2020 UWMP Table 6-10

Table 9. Normal Year Supply and Demand Comparison, Potable (AFY)

		2025	2030	2035	2040	2045
Normal Year	Supply totals	21,080	24,156	27,343	32,815	33,552
	Demand totals	21,080	24,156	27,343	32,815	33,552
	Difference	0	0	0	0	0

Note: Table excludes recycled water which is 100% available in all years

Source: UWMP 2020 Table 7-5

Table 10. Single Dry Year Supply and Demand Comparison, Potable (AFY)

		2025	2030	2035	2040	2045
Single Dry Year	Supply totals	19,265	22,330	25,505	30,977	31,257
	Demand totals	21,080	24,156	27,342	32,814	33,553
	Difference	(1,815)	(1,826)	(1,837)	(1,837)	(2,296)

Note: Table excludes recycled water which is 100% available in all years

Source: UWMP 2020 Table 7-6

Difference is expected to be made up through the Water Shortage Contingency Plan (WSCP)

Table 11. Multiple Dry Years Supply and Demand Comparison, Potable (AFY)

		2025	2030	2035	2040
First Year	Supply Totals	19,265	22,330	25,505	30,977
	Demand Totals	21,080	24,156	27,342	32,814
	Difference	(1,815)	(1,826)	(1,837)	(1,837)
Second Year	Supply Totals	19,421	22,508	26,140	30,666
	Demand Totals	21,695	24,793	28,437	32,962
	Difference	(2,274)	(2,285)	(2,297)	(2,296)
Third Year	Supply Totals	20,036	23,145	27,235	30,813
	Demand Totals	22,310	25,431	29,531	33,110
	Difference	(2,274)	(2,286)	(2,296)	(2,297)
Fourth Year	Supply Totals	20,652	23,783	28,329	30,636
	Demand totals	22,926	26,068	30,626	33,258
	Difference	(2,274)	(2,285)	(2,297)	(2,622)
Fifth Year	Supply Totals	21,267	24,420	29,200	30,784
	Demand Totals	23,541	26,705	31,720	33,405
	Difference	(2,274)	(2,285)	(2,520)	(2,621)

Note: Table excludes recycled water which is 100% available in all years

Source: UWMP 2020 Table 7-7

Difference is expected to be made up through the Water Shortage Contingency Plan (WSCP)