

4.14 UTILITIES AND SERVICE SYSTEMS

4.14.1 INTRODUCTION

The Utilities and Service Systems chapter of the EIR summarizes the setting information and identifies potential new demands resulting from the Proposed Project and Biological Resources Preservation Alternative (BRPA) on utilities and service systems, including water, sanitary sewer, electric power, telecommunication, and solid waste disposal services. The chapter evaluates the sufficiency of water supplies to meet the water demand of the Proposed Project and BRPA, the adequacy of the wastewater collection and treatment systems required to serve the Proposed Project and BRPA, and compliance with applicable regulations related to solid waste. Information for the Utilities and Service Systems chapter was drawn from a Water Supply Assessment (WSA) prepared for the Proposed Project by Brown and Caldwell (see Appendix S of this EIR),¹ Wastewater Treatment Plant Capacity Technical Memorandum (WWTP Capacity Memorandum) (see Appendix T of this EIR),² Wastewater Collection System Technical Memorandum (Wastewater Collection Memorandum)³ prepared by West Yost (see Appendix U of this EIR), and a Biological Resource Preservation Alternative – Sewer and Water Evaluation Memo prepared by Cunningham Engineering (see Appendix V).⁴ Further information was sourced from the City of Davis General Plan⁵ and the associated General Plan EIR⁶.

Impacts related to groundwater supplies and stormwater drainage are addressed in Chapter 4.8, Hydrology and Water Quality, of this EIR.

4.14.2 EXISTING ENVIRONMENTAL SETTING

The following section describes the existing utilities and service systems in the vicinity of the project site/BRPA site, including water supply, wastewater conveyance and treatment, solid waste, and gas, electric, and telecommunication infrastructure.

Water Supply

The project site/BRPA site is currently located in an unincorporated portion of Yolo County. Upon annexation of the site into the City limits, the City of Davis would be responsible for providing water to the site. The City of Davis provides water service to all residential, commercial, industrial, and irrigation customers within the City limits. Water is also provided by the City for open space and fire protection uses.

¹ Brown and Caldwell. *Water Supply Assessment for City of Davis: Village Farms Davis, Shriners, Palamino Place, and DiSC 2022*. April 24, 2024.

² West Yost. *Technical Memorandum: Davis WWTP Capacity Impacts of Proposed Village Farms Development*. April 23, 2024.

³ West Yost. *Technical Memorandum: Collection System Impacts of Proposed Village Farms Development*. April 23, 2024.

⁴ Cunningham Engineering. *Biological Resource Preservation Alternative – Sewer and Water Evaluation Memo*. November 11, 2024.

⁵ City of Davis. *City of Davis General Plan*. Adopted May 2001, Amended January 2007.

⁶ City of Davis. *Draft Program EIR for the City of Davis General Plan Update and Project EIR for Establishment of a New Junior High School*. Certified May 2001.



As shown in Figure 4.14-1, which includes the City's current service area as well as additional service areas associated with future proposed development projects, the City's water system serves customers within the City of Davis, the El Macero and Willowbank County Service Areas (CSAs), and the Davis Creek Mobile Home Park.

An additional CSA known as North Davis Meadows (NDM) is located north of the City, within the City's water service area, but is pending connections to the City's water system. The system is supplied surface water from the Woodland-Davis Clean Water Agency (WDCWA) Regional Water Treatment Facility (RWTF) and groundwater from local wells. A portion of the WDCWA surface water is delivered to UC Davis through the surface water transmission main owned and maintained by the City prior to delivery to UC Davis' transmission main.

Surface Water

The City of Davis began participating in the WDCWA in 2016. The WDCWA was created in 2009 to convey water from the Sacramento River, transmit the water for treatment to the RWTF, and deliver wholesale treated surface water to the cities of Davis and Woodland, as well as UC Davis, for use in their respective service areas.

According to the WSA, WDCWA has two separate surface water rights: 45,000 acre-feet per year (AFY) from Permit 20281 from the State Water Resource Control Board (SWRCB), and up to 10,000 AFY from a supplemental water right purchased from the Conaway Preservation Group (CPG). Both surface water rights have conditions that can limit WDCWA's ability to divert water. Permit 20281 is subject to the SWRCB's Term 91, which requires permittees to cease diverting water when the State Water Project and the Central Valley Project are releasing stored water to meet water quality and flow requirements in the Sacramento-San Joaquin Delta.

The CPG water right is subject to limitation based on Lake Shasta water levels. The City is entitled to deliveries of 10.2 million gallons per day (mgd) from the WDCWA in a normal year, totaling approximately 11,420 AFY. Table 4.14-1 summarizes the projected wholesale surface water supplies for a normal year, a single dry year, and multiple dry years. The City does not anticipate any agreement changes with the WDCWA.

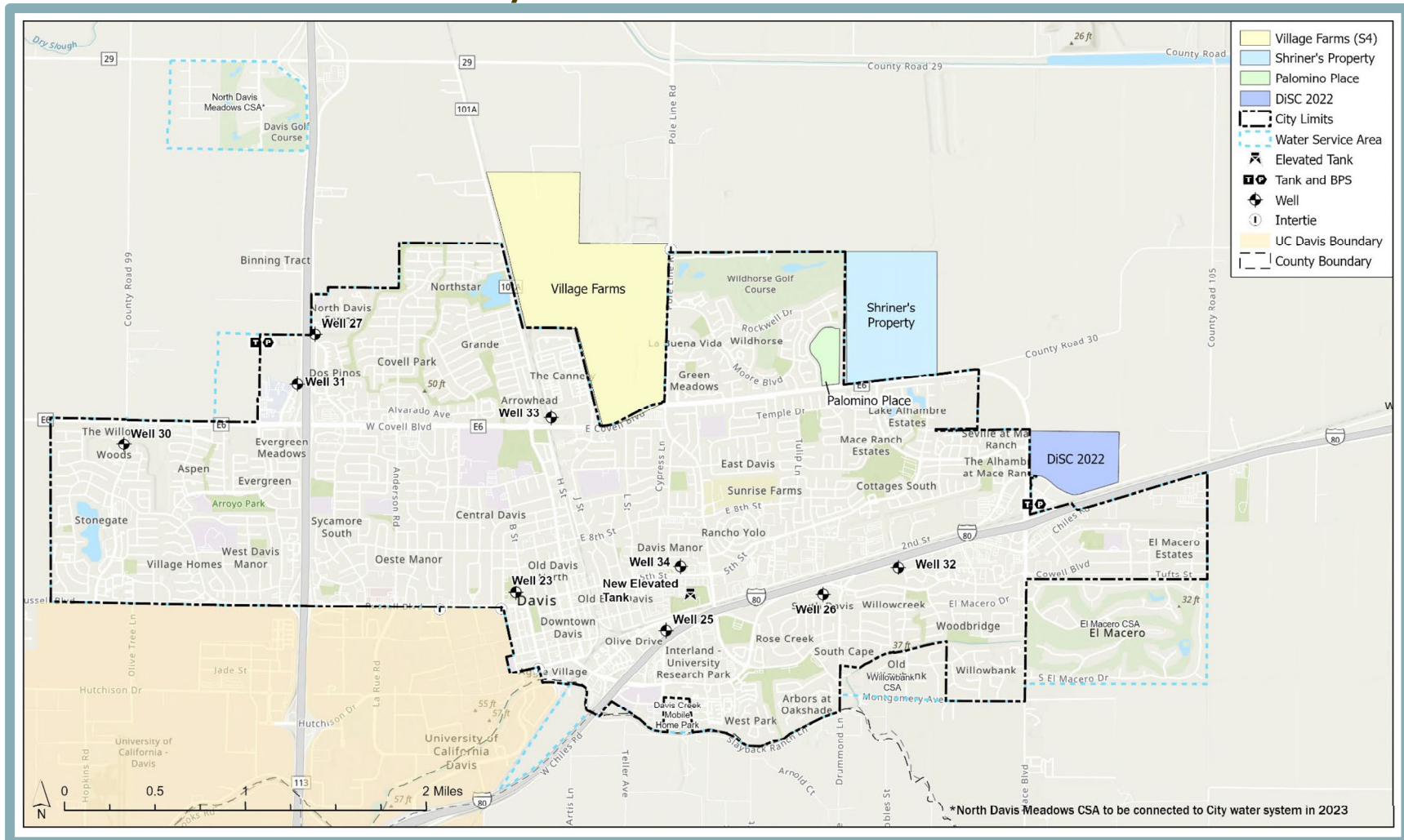
Table 4.14-1					
Projected Wholesale Surface Water Supply, AFY					
Year Type	2025	2030	2035	2040	2045
Normal Year	10,520	10,520	10,520	10,520	10,520
Single Dry Year	2,460	2,460	2,460	2,460	2,460
Multiple Dry Years	2,460	2,460	2,460	2,460	2,460
<i>Source: Brown and Caldwell, April 2024.</i>					

Groundwater

The City pumps groundwater from the Yolo Subbasin, which is a portion of the larger Sacramento Valley Groundwater Basin. According to the WSA, the Department of Water Resources (DWR) does not consider the basin to be in overdraft. Municipal water users of the Yolo Subbasin include the cities of Davis, Woodland, and Winters; UC Davis; various community services districts and areas within Yolo County; Reclamation Districts 150, 307, and 999; and the Yolo County Flood Control and Water Conservation District (YCFCWCD).



**Figure 4.14-1
City of Davis Water Service Area**



Source: Brown and Caldwell, April 2024.



Areas outside of the cities and community service districts are predominantly agricultural. Most agricultural areas to the north of the City use groundwater, while other agricultural users within Yolo County are able to use surface water from the Sacramento River, Colusa Basin Drain, Putah Creek, Cache Creek, Yolo Bypass, Tule Canal, Willow Slough, and the Tehama-Colusa Canal.

The aquifer system under the Yolo Subbasin includes the upper Tehama Formation and is generally divided into three zones: shallow, intermediate, and deep. The City's major groundwater production zones for water supply are the intermediate and deep aquifer zones. The distinction is based on water chemistry, though both zones are geologically part of the larger Tehama Formation. The intermediate aquifer begins at a depth of approximately 200 feet and the deep aquifer at 700 feet below ground surface. Groundwater in the deep aquifer is more desirable for residential uses, while groundwater from the intermediate aquifer is more suited for irrigation water uses. Overall, high-quality water exists in the portion of the aquifer from which public community water systems draw.

According to the WSA, the projected sustainable yield of the Yolo Subbasin is 346,000 AFY. In addition, according to the Davis 2020 Urban Water Management Plan (UWMP), the groundwater storage capacity of the Yolo Subbasin between the depths of 20 to 420 feet is approximately 6.5 million AFY.⁷ Seasonal variations show the shallowest depth to water levels occurs in the spring (March/April) with greatest depths in summer (July/August), when groundwater levels are at their lowest. The City tracks groundwater levels in the intermediate and deep wells, which generally decline during dry conditions due to continued reliance on groundwater for agricultural and municipal demands. However, groundwater levels substantially recover during wet years. Over the years, the depth to water was greatest from 2013 to 2015 and from 2021 to 2022 during the recent droughts. Groundwater levels rebounded after 2015 with the start of conjunctive-use programs that coordinate the use of both surface water and groundwater, and were consistent from 2018 to 2020. Similarly, groundwater levels have since rebounded again after notable wet seasons in 2021 through 2023.

The Yolo Subbasin is subject to the 2014 Sustainable Groundwater Management Act (SGMA), which became effective January 31, 2015. The SGMA applies to the 127 high and medium priority groundwater basins designated by DWR Bulletin 118, which account for approximately 96 percent of groundwater use in California. The Yolo Subbasin is designated as a high priority subbasin under the SGMA. The SGMA requires high and medium priority basins subject to critical conditions of overdraft to be managed under a Groundwater Sustainability Plan (GSP) by January 31, 2020 (Water Code Section 10720.7[a][2]). In addition, the SGMA requires the formation of local groundwater sustainability agencies (GSAs) that must assess conditions in their local water basins and adopt locally based management plans. The SGMA provides substantial time (20 years) for GSAs to implement plans and achieve long-term groundwater sustainability.

The Yolo Subbasin Groundwater Agency (YSGA), which includes the City of Davis as a member agency, adopted the Yolo Subbasin GSP on January 24, 2022.⁸ The Yolo Subbasin GSP was approved by DWR on October 26, 2023. The Yolo Subbasin GSP establishes various standards, including, but not limited to, sustainability goals, minimum thresholds for groundwater conditions, interim milestones, monitoring protocols for the collection of groundwater, and reporting standards. Table 4.14-2 summarizes the projected groundwater supplies for a normal year, a

⁷ City of Davis. *2020 Urban Water Management Plan*. June 15, 2021.

⁸ Yolo Subbasin Groundwater Agency. *Yolo Subbasin Groundwater Agency 2022 Groundwater Sustainability Plan* Yolo County, CA. Approved January 24, 2022.



single dry year, and multiple dry years. The City's groundwater supply would meet demands during dry years when minimal surface water supply is available. During a dry year, the City's surface water supplies would be reduced, but groundwater supplies would be increased to meet demands.

Table 4.14-2 Projected Groundwater Supply, AFY				
2025	2030	2035	2040	2045
12,800	12,800	12,800	12,800	12,800
<i>Source: Brown and Caldwell, April 2024.</i>				

Water Delivery

The City's water distribution system includes three water storage tanks, nine groundwater wells comprised of five deep aquifer wells and four intermediate wells, and 191 miles of distribution and transmission mains.⁹ The three water storage tanks include the Elevated Tank, West Area Tank, and the East Area Tank. The three tanks have a combined storage of 8.2 million gallons. The West Area Tank has a booster pumping capacity of 4,200 gallons per minute (gpm) and the East Area Tank has a total pumping capacity of 8,000 gpm. The West and East Area Tanks fill during off-peak demand periods, and the booster station pumps send water back into the system during peak periods based on time and system pressure.

The City's water pipes range from two to 14 inches in diameter. Approximately 90 percent of the distribution system consists of six- to 10-inch diameter pipelines. The City's pipeline system was originally constructed to support localized supply, with wells spread throughout the City, which did not require large diameter transmission mains. However, as a result of the recent changes to the City's water supply system, treated surface water from the RWTF is distributed by way of a six-mile, 30-inch pipeline along Pole Line Road.

Currently, the City of Davis maintains a 10-inch domestic water line within East Covell Boulevard to the south of the project site/BRPA site, and a 10- and 12-inch water line within Pole Line Road to the east of the project site/BRPA site.

Wastewater Collection and Treatment

The project site/BRPA site is currently located in an unincorporated portion of Yolo County. Upon annexation of the site into the City limits, the City of Davis would be responsible for providing wastewater conveyance and treatment services to the site. The City of Davis provides wastewater conveyance and treatment for all residents and businesses within the City of Davis and the unincorporated areas of North Davis Meadows, El Macero, Davis Creek Mobile Home Park, and the Teichert Construction Complex.

Wastewater Treatment Plant Capacity

The City of Davis is authorized by the Central Valley Regional Water Quality Board (RWQCB) to discharge treated wastewater from the City's wastewater treatment plant (WWTP) under Order R5-2018-0086 and National Pollutant Discharge Elimination System (NPDES) Permit No.

⁹ City of Davis. *City Water Infrastructure*. Available at: <https://www.cityofdavis.org/city-hall/public-works-utilities-and-operations/water/city-water-infrastructure>. Accessed September 2024.



CA0079049, effective as of December 7, 2018.¹⁰ Under the Permit Order, the WWTP is permitted to treat an average dry-weather flow (ADWF) of 7.5 mgd. ADWF is defined as the average of the three consecutive lowest-flow calendar months. For the City of Davis, the foregoing period usually coincides with the period of July through September. The existing treatment system design capacity is 6.0 mgd ADWF. The City has the ability to discharge treated wastewater from two different discharge points (Discharge Point Nos. 001 and 002). The treatment system for both discharge points consists of a mechanical bar screen, aerated grit tank, three primary sedimentation tanks, three facultative oxidation ponds, two aerated ponds, a polishing pond, an overland flow system, disinfection, and dechlorination. However, prior to the discharge at Discharge Point No. 002, the disinfected effluent passes through treatment wetlands. Each discharge point is located in a different receiving water. Treated wastewater is discharged from Discharge Point No. 001 to the Willow Slough Bypass, a water of the U.S., and part of the Yolo Bypass flood protection structure within the Sacramento River watershed. Treated wastewater is discharged from Discharge Point No. 002 to the Conaway Ranch Toe Drain, a water of the U.S., and a part of the Yolo Bypass within the Sacramento River watershed.

Wastewater Collection System

The City of Davis wastewater collection system conveys wastewater for the area within the City limits to the WWTP, located at 45400 County Road (CR) 28H. The collection system includes 164 miles of gravity sewers, 3,224 manholes, six pump stations, 2.63 miles of force mains ranging in size from four to 14 inches, and approximately 123 miles of sewer laterals.¹¹

Within the project site/BRPA site vicinity, the existing sewer collection system includes a 42-inch sewer line that traverses through the project site/BRPA site in a north-to-south direction and pivots towards the east along the northern site boundary. In addition, a 12-inch sewer line extends east along Channel A from the north-to-south 42-inch sewer line.

Solid Waste Disposal

Solid waste collection and disposal in the City of Davis is provided by Recology Davis, which was renamed from Davis Waste Removal. Recology Davis has a drop-off and buy-back center and provides residential curbside, apartment, and business collection services. In addition to the weekly garbage service, Recology Davis provides green waste and recycling pickup and street sweeping service. Recoverable items include mixed paper, glass, aluminum cans, steel and tin cans, some plastics, corrugated cardboard, yard waste, and used motor oil. In July of 2016, Recology Davis began an organics collection program to allow for collection of organic material and food waste. The program will help achieve the City's goal of diverting waste sufficient to reduce citywide waste disposal to zero pounds per person per day by year 2025.

All non-recyclable, non-organic waste generated by the City of Davis is disposed of at the 770-acre Yolo County Central Landfill, which is located off CR 28H, near its intersection with CR 104. The landfill is owned and operated by the Yolo County Department of Public Works and Transportation. According to the California Department of Resources Recycling and Recovery (CalRecycle), the Yolo County Central Landfill is permitted to accept a maximum of 49,035,200

¹⁰ Central Valley Regional Water Quality Control Board. *Order R5-2018-0086, NPDES No. CA0079049, Waste Discharge Requirements for the City of Davis Wastewater Treatment Plant, Yolo County*. Adopted December 2018.

¹¹ City of Davis. *Wastewater*. Available at: <https://www.cityofdavis.org/city-hall/public-works-utilities-and-operations/wastewater>. Accessed September 2024.



cubic yards (CY) of waste.¹² The landfill has a remaining capacity of 33,140,373 CY and is anticipated to operate through the year 2124. The landfill also includes a recycling drop-off facility, a wood-processing facility, and a methane gas collection facility, and accepts drop-offs of household hazardous waste free to County residents on designated Saturdays.

Electricity and Natural Gas

Gas and electric service in the City of Davis has been historically provided by Pacific Gas & Electric Company (PG&E) under a franchise granted to PG&E by the City. Based in San Francisco, PG&E is an investor-owned utility and the largest provider of gas and electric services in northern and central California. PG&E provides electricity to roughly 5.1 million customers and provides natural gas to nearly 4.2 million customers. A mix of generating sources, including hydropower, gas-fired steam, and nuclear energy, powers the electric system.

On October 25, 2016, the Davis City Council adopted Resolution Number 16-153, Series 2016, which approved the Joint Exercise of Powers Agreement with Yolo County to form the Valley Clean Energy Alliance, which is now referred to as simply Valley Clean Energy (VCE). The resolution adopted by the City, along with similar resolutions adopted by the City of Woodland and Yolo County, led to the formation of the VCE joint powers authority. Beginning in June 2018, the VCE began serving the electricity needs of the cities of Woodland, Davis, and unincorporated areas of Yolo County. Customers within the participating areas have the opportunity to continue receiving service from PG&E or receive energy from VCE. While VCE supplies the energy for customers enrolled in the VCE program, VCE electricity is transmitted through PG&E-owned-and-operated distribution and power lines.

Telecommunications

Residents in Davis subscribe to a mix of wireline providers and resellers including AT&T of California, Comcast, Omsoft, and Davis Community Network. A few businesses also use fixed wireless providers, including DigitalPath, Inc. and Winters Broadband.

Comcast has provided six strands of fiber to 22 “Major Facilities” throughout the City and connects three Yolo County facilities located within the City of Davis, which provides interconnection with the greater Yolo County fiber network. The Comcast network, known as the “I-Net” or Institutional Network, enables the City to provide connectivity for municipal operations, utilities, public safety, and general administration.¹³

4.14.3 REGULATORY CONTEXT

The following discussion contains a summary of regulatory controls pertaining to utilities and service systems, including federal, State, and local laws and ordinances.

Federal Regulations

The federal environmental policies and regulations relevant to utilities and service systems are primarily related to water quality, which is addressed in Chapter 4.8, Hydrology and Water Quality, of this EIR.

¹² California Department of Resources Recycling and Recovery. *SWIS Facility/Site Activity Details Yolo County Central Landfill (57-AA-0001)*. Available at: <https://www2.calrecycle.ca.gov/SolidWaste/Site/Details/689>. Accessed April 2024.

¹³ Magellan Advisors, LLC. *Final Yolo Broadband Strategic Plan*. March 26, 2015.



State Regulations

The following are the State environmental policies and regulations relevant to utilities and service systems.

California Green Building Standards Code

The 2022 California Green Building Standards Code, otherwise known as the CALGreen Code (California Code of Regulations [CCR] Title 24, Part 11), is a portion of the California Building Standards Code (CBSC), which became effective on January 1, 2023. The CBSC is adopted every three years by the Building Standards Commission (BSC).

The purpose of the CALGreen Code is to improve public health, safety, and general welfare by enhancing the design and construction of buildings through the use of building concepts having a reduced negative impact or positive environmental impact and encouraging sustainable construction practices. The CALGreen standards regulate the method of use, properties, performance, types of materials used in construction, alteration repair, improvement and rehabilitation of a structure or improvement to property. The provisions of the code apply to the planning, design, operation, construction, use, and occupancy of every newly constructed building or structure throughout California. Requirements of the current CALGreen Code include, but are not limited to, the following measures:

- Mandatory reduction in indoor water use through compliance with specified flow rates for plumbing fixtures and fittings;
- Mandatory reduction in outdoor water use through compliance with a local water-efficient landscaping ordinance or the DWR's Model Water Efficient Landscape Ordinance (MWELO);
- 65 percent of construction and demolition waste must be diverted from landfills;
- Mandatory inspections of energy systems to ensure optimal working efficiency;
- Inclusion of electric vehicle (EV) charging stations or designated spaces capable of supporting future charging stations; and
- Low-pollutant-emitting exterior and interior finish materials, such as paints, carpets, vinyl flooring, and particle boards.

The CALGreen standards also include voluntary efficiency measures that are provided at two tiers and implemented at the discretion of local agencies and applicants. According to Section A4.602 of Appendix A4 of the CALGreen Code, CALGreen's Tier 1 standards call for a 15 percent improvement in energy requirements, stricter water conservation, 65 percent diversion of construction and demolition waste, 10 percent recycled content in building materials, 20 percent permeable paving, 20 percent cement reduction, and cool/solar-reflective roofs. CALGreen's more rigorous Tier 2 standards call for a 30 percent improvement in energy requirements, stricter water conservation, 80 percent diversion of construction and demolition waste, 15 percent recycled content in building materials, 30 percent permeable paving, 25 percent cement reduction, and cool/solar-reflective roofs. The City of Davis has adopted Tier 1 of the CALGreen standards.

Senate Bill 7

On September 25, 2016, Senate Bill (SB) 7 was signed into law. The purpose of SB 7 is to further the State's water conservation efforts by requiring that new apartment buildings constructed after January 1, 2018, include submeters for every rental unit. Specifically, the bill authorizes the



Department of Housing and Community Development to develop, and propose for adoption, building standards that require the installation of water meters or submeters in multi-family residential buildings. In addition, if submeters are used to charge tenants separately for water use, SB 7 imposes requirements on landlords related to sub-metered water service to individual dwelling units.

California Water Code

The California Water Code requires coordination between land use lead agencies and public water purveyors. The purpose of this coordination is to ensure that prudent water supply planning has been conducted and that planned water supplies are adequate to meet both existing demands and the demands of planned development.

Water Code Sections 10910 through 10915 (inclusive), sometimes referred to as SB 610, require land use lead agencies: 1) to identify the responsible public water purveyor for a proposed development project, and 2) to request from the responsible purveyor a WSA. The purposes of the WSA are (a) to describe the sufficiency of the purveyors' water supplies to satisfy the water demands of the proposed development project, while still meeting the current and projected water demands of customers, and (b) in the absence of a currently sufficient supply to describe the purveyor's plans for acquiring additional water. Water Code Sections 10910 through 10915 delineate the specific information that must be included in the WSA.

As stated in CEQA Guidelines Section 15155, which reflects SB 610 requirements, any development with water demand exceeding the equivalent demand associated with 500 dwelling units is considered a "water-demand project" and is required to prepare a WSA. The Proposed Project and BRPA would each include a total of 1,800 dwelling units. Thus, a WSA is required for the Proposed Project and BRPA.

California Integrated Waste Management Act – Assembly Bill 939

To minimize the amount of solid waste that must be disposed of by transformation (i.e., recycling) and land disposal, the State Legislature passed the California Integrated Waste Management Act of 1989 (Assembly Bill [AB] 939), effective January 1990. According to AB 939, all cities and counties are required to divert 25 percent of all solid waste from landfill facilities by January 1, 1995, and 50 percent by January 1, 2000. Solid waste plans are required to explain how each city's AB 939 plan will be integrated within the respective County plans, which must promote source reduction, recycling and composting, and environmentally safe transformation and land disposal. Cities and counties that do not meet this mandate are subject to \$10,000-per-day fines.

In 2007, SB 1016 amended portions of AB 939, which allows the California Integrated Waste Management Board (CIWMB) to use per capita disposal as an indicator in evaluating compliance with the requirements of AB 939. Jurisdictions track and report their per capita disposal rates to CalRecycle.

Assembly Bill 1327

AB 1327, the Solid Waste Reuse and Recycling Access Act of 1991, requires jurisdictions to adopt ordinances requiring development projects to provide adequate storage area for collection and removal of recyclable materials. The City of Davis has adopted a solid waste management ordinance under Chapter 32 of the Davis Municipal Code.



Assembly Bill 1881

AB 1881, the Water Conservation in Landscaping Act of 2006, required the DWR to update the MWELO. AB 1881 also required local agencies to adopt the updated model ordinance or an equivalent ordinance by January 1, 2010. If local jurisdictions failed to adopt the updated model ordinance or an equivalent by January 1, 2010, the DWR's updated model ordinance would automatically be adopted by statute. The City has adopted the MWELO (City of Davis Municipal Code Section 39.02.045[a][4]).

Local Regulations

The following are the local policies and regulations relevant to utilities and service systems.

City of Davis General Plan

The applicable Davis General Plan policies and standards related to utilities and service systems are presented below.

Water Chapter

Goal WATER 1 Minimize increases in water use. Reduce per capita water consumption by 20 percent as compared to historic use through programs encouraging water conservation.

Policy WATER 1.1 Give priority to demand reduction and conservation over additional water resource development.

Policy WATER 1.2 Require water conserving landscaping.

Policy WATER 1.3 Do not approve future development within the City unless an adequate supply of quality water is available or will be developed prior to occupancy.

Goal WATER 5 Remain within the capacity of the City wastewater treatment plant.

Policy WATER 5.1 Evaluate the wastewater production of new large scale development prior to approval to ensure that it will fall within the capacity of the plant.

Policy WATER 5.2 Provided that the existing plant capacity is not exceeded, require new large scale development to pay its fair share of the cost of extending sewer service to the site.

Materials, Solid Waste and Recycling Chapter

Goal MAT 1 Enhance the quality of the environment by conserving resources and minimizing waste by reducing, reusing, recycling, and re-buying.

Policy MAT 1.1 Promote reduced consumption of non-renewable resources.

Goal MAT 2 Provide adequate waste disposal capacity for Davis.



Policy MAT 2.1 Plan for the long-term waste disposal needs of Davis.

Davis Municipal Code

The Davis Municipal Code ordinances related to utilities and service systems that are applicable to the Proposed Project and BRPA are presented below.

Davis Municipal Code Chapter 32, Management of Solid Waste

Davis Municipal Code Article 32.01 contains various requirements and standards for existing and new developments related to solid waste, including specific regulations for waste collection service in individually serviced residences, commercial businesses, and other generators, including multi-family residences. Additionally, Article 32.04 of the Municipal Code establishes requirements for the diversion of construction and demolition debris, including requiring construction projects to provide proof of diversions.

Davis Municipal Code Article 38.01, Underground Utility Districts

Davis Municipal Code Article 38.01 requires that if underground construction is necessary to provide utility service within an area where poles, overhead wires, and associated overhead structures are prohibited, the supplying utility must furnish that portion of the conduits, conductors, and associated equipment required, consistent with the requirements established by the California Public Utilities Commission. Underground construction must occur in accordance with established construction standards and completed in such time to allow for the removal of overhead facilities deemed to be a risk to public health and safety.

Davis Municipal Code Article 40.42, Water Efficient Landscaping

The purpose of the landscaping standards set forth by Davis Municipal Code Article 40.42 is to comply with the Water Conservation in Landscaping Act of 2006, Government Code Sections 65591 et. seq. and to establish standards and procedures that promote the design, installation, and management of water-efficient landscaping. Article 40.42 applies to residential projects with developer-installed and homeowner-provided landscaping, non-residential projects and public agency projects, existing landscaping, and cemeteries.

City of Davis 2020 Urban Water Management Plan

In June 2021, the City of Davis prepared the UWMP to address current and future water demands and supplies, as required by the Urban Water Management Planning Act of 1983. The UWMP also discusses the conservation and efficient use of water in the City's service area, and the development and implementation of plans to assure reliable water service in the future. The UWMP contains projections for future water use, discusses the reliability of the City's water supply, describes the City's water treatment system, and contains a water shortage contingency plan. The UWMP also contains demand management measures to reduce water demands.

4.14.4 IMPACTS AND MITIGATION MEASURES

The section below describes the standards of significance and methodology used to analyze and determine the potential impacts related to utilities and service systems associated with the Proposed Project and BRPA. In addition, a discussion of the specific potential impacts, as well as mitigation measures where necessary, are also presented.



Standards of Significance

In accordance with Appendix G of the CEQA Guidelines, impact determinations regarding public utilities and service systems require consideration as to whether the Proposed Project and BRPA would:

- Require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects;
- Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years;
- Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
- Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals; or
- Comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

Impacts related to groundwater supplies and stormwater drainage facilities are addressed in Chapter 4.8, Hydrology and Water Quality, of this EIR.

Method of Analysis

Information related to water supply was primarily drawn from the WSA (see Appendix S of this EIR) prepared by Brown and Caldwell. Information related to wastewater conveyance and treatment was primarily drawn from the Wastewater Collection Memorandum (see Appendix U of this EIR) and WWTP Capacity Memorandum (see Appendix T of this EIR), respectively, both of which were prepared by West Yost. The method of analysis used in each of the aforementioned assessments is discussed further below.

Water Supply Assessment

Water supply projections for the City's existing water service area are discussed above in the Existing Environmental Setting section of this chapter and are based on projections included in the City's Draft 2023 Water System Optimization Plan (WSOP), which was prepared by Brown and Caldwell and includes a revised water demand analysis and updated supply projections, making the water demand and supply analysis in the 2023 WSOP more current than what was included in the City's 2020 UWMP.

The projected water demands for the existing water service area (excluding UC Davis, but including North Davis Meadows) in the WSA are based on the 2023 WSOP and are summarized in Table 4.14-3. The water demand projections for 2025 through 2045 assume a normal water year type and do not include the Proposed Project or BRPA.

To calculate the projected water demands for the Proposed Project, the WSA relied upon unit water demand factors (UWDFs) from a 2015 WSA prepared for the City of Davis by Brown and Caldwell, as the 2015 WSA UWDFs result in the highest demand estimate for the Proposed Project, as compared to the UWDFs used in the 2023 WSOP, and are, thus, conservative.



Table 4.14-3
Historical and Projected Water Demands by Sector for the Existing Water Service Area
(AFY)^{1,2,3}

Year	2021	2022	2025	2030	2035	2040⁴	2045⁴
Single-Family Residential	5,130	4,820	5,100	5,350	5,260	5,200	5,200
Multi-Family Residential	1,930	2,070	1,750	1,886	1,860	1,840	1,840
CII ⁵	860	870	600	800	840	850	850
CII Irrigation	1,320	1,320	1,410	1,440	1,510	1,570	1,570
Losses	980	820	930	830	830	840	840
Total	10,120	9,910	9,790	10,310	10,300	10,290	10,290

¹ Individual values are rounded to nearest 10, which may result in some rounding errors in totals.

² Based on data from the 2023 WSOP.

³ Demands are the same as those in a normal year, but dry years are projected to include water demand that will increase in the summer due to decreased precipitation and increased ETo rates.

⁴ Demand levels off due to the City reaching single- and multi-family buildout in 2029 and 2031, respectively. Full buildout is estimated to occur in 2039 and reduction occurs in projected demands due to water savings.

⁵ Commercial, Industrial, and Institutional.

Source: Brown and Caldwell, April 2024.



The 2015 WSA UWDFs are summarized in Table 4.14-5. The projected water demands for the Proposed Project are summarized in Table 4.14-6. The projected water demand for the BRPA is summarized in Table 4.14-7.

Wastewater Collection System Technical Memorandum

An analysis completed by West Yost in 2022 established a then-current per capita ADWF of 62 gallons per day (gpd) per capita, based on WWTP influent flow data for non-drought years in 2012, 2013 and 2017 through 2019. Since then, another non-drought year occurred in 2023. With the addition of 2023 flows, the Wastewater Collection Memorandum updated current ADWF per capita flows to be slightly lower at 61 gpd per capita. The preferred methodology in the Wastewater Collection Memorandum for establishing service area population was as follows:

1. The population density was assumed to be 2.4 persons per equivalent dwelling unit (EDU), based on a review of recent U.S. Census information and discussions with City staff; and
2. The service population for the existing sewer connections was estimated from the 2.4 persons/EDU times the number of EDUs. The actual service area population may be slightly lower (based on recent U.S. Census data); however, this approach adds an appropriate level of conservatism to the analysis.

The Wastewater Collection Memorandum evaluated four development scenarios: existing development conditions within City limits (Scenario 1); existing development conditions including the approved and reasonably foreseeable projects identified in Table 4.14-4, respectively (i.e., buildout conditions) (Scenario 2); existing development conditions plus the Proposed Project (Scenario 3); and the City's General Plan buildout conditions plus the Proposed Project (Scenario 4).

Total EDUs for each of the foregoing scenarios were established from the EDU values listed above in conjunction with a City staff-derived estimate for the total existing unit count within the City limits of 28,553 EDUs. Corresponding service area populations were established by multiplying the total EDUs by 2.4 persons per EDU. Those populations were then multiplied by the current ADWF per capita of 61 gpd per capita to obtain estimates of the ADWF for each scenario. The total EDUs for Scenarios 1 through 4 are summarized in Table 4.14-4.

Table 4.14-4 Total EDUs, Service Area Populations, and ADWFs for Scenarios 1 through 4			
Scenario	Total Dwelling Units (EDUs)	Estimated Service Area (persons)¹	ADWF (mgd)²
Existing City Limits ³	28,553	68,530	4.2
Buildout ⁴	31,410	75,380	4.6
Existing Plus Proposed Project	30,353	72,850	4.4
Buildout Plus Proposed Project	33,210	79,700	4.9
¹ Population = EDUs X 2.4 persons per EDU. ² Based on a detailed unit count conducted by City staff. ³ ADWF = population X 61 gpd per capita. ⁴ Buildout = existing connections plus Nishi, Bretton Woods, DiSC 202 and Shriners residential connections and DiSC 2022 non-residential connections.			
Source: West Yost, April 2024.			



Table 4.14-5 Unit Water Demand Factors for the Proposed Project											
Use	GPD/ Dwelling Unit	GPD/ acre	GPD/ Employee	GPD/ Employee (Indoor)	GPD/1,000 sf (Manufacturing or Development Water)	GPD/ Room	GPD/ Visitor or Customer	GPD/ Person (Indoor)	GPD/ Connection	Gallons per Capita per Day Through 2020	Gallons per Capita per Day After 2020
Single-Family Residential	345	--	--	--	--	--	--	57	345	--	--
Multi-Family Residential	174	--	--	--	--	--	--	57	3,888	--	--
CII	--	2,400	38	15	90	--	--	--	1,890	--	--
Landscape	--	2,712	--	--	--	--	--	--	--	--	--
Retail/Convention	--	--	--	--	--	--	3	--	--	164	150
Hotel	--	--	--	--	--	150	--	--	--	--	--
Source: Brown and Caldwell, April 2024.											

Table 4.14-6 Projected Water Demands for the Proposed Project							
Land Use Designation	Land Use	Estimated City Billing Classification ¹	Acres	Dwelling Units	Unit Water Demand Factor	Average Day Demand	Average Day Demand ²
					GPD/Unit or GPD/Acre	GPD	AFY
Park/Open Space	Park/Recreation	Irrigation	27.8	--	2,712	75,400	85
	Neighborhood Greenbelt	Irrigation	39.7	--	2,712	107,800	121
	Urban Agricultural Transition Area	--	118.4	--	0	0	0
Neighborhood Retail	Neighborhood Retail	Commercial	2.8	--	2,400	6,800	8
Public/Semi-Public	Education Farm	Public (School)	2.8	--	2,400	6,700	8
	City Stormwater Conveyance	--	25.8	--	0	0	0
	Public Day School	Public (School)	2.4	--	2,400	5,800	6
	Public Safety Center	Public (City)	2.5	--	2,400	6,000	7
High Density Residential	West Park	Multi-Family Residential/Irrigation	7.9	240	174	41,800	47
Medium High Density Residential	North Park Apartments	Multi-Family Residential/Irrigation	11.6	200	174	34,800	39
Medium Density Residential	Central Village	Single-Family Residential	40.0	320	345	110,400	124
	Parkside Village West	Single-Family Residential	15.1	150	345	51,800	58
	Parkside Village East	Single-Family Residential	16.1	150	345	51,800	58
	West Park North	Single-Family Residential	5.9	60	345	20,700	23
Low Density Residential	North Village	Single-Family Residential	64.8	220	345	75,900	85
	East Village	Single-Family Residential	39.6	220	345	75,900	85
	South Village	Single-Family Residential	53.0	240	345	82,800	93
Total	--	--	476.2	1,800	--	754,500	850
¹ Assumed billing classifications and land use categories from the 2023 WSOP. ² Gpd converted to AFY. Individual values are rounded to nearest 1 and totals to nearest 10, which may result in some rounding errors in the totals.							
Source: Brown and Caldwell, April 2024.							

Table 4.14-7 Projected Water Demands for the BRPA						
Land Use Designation	Land Use	Acres	Dwelling Units	Unit Water Demand ¹	Average Day Demand	Average Day Demand
				GPD/Unit or GPD/Acre	GPD	AFY
Park/Open Space	Park/Recreation	27.1	--	2,712	73,500	82
	Neighborhood Greenbelt	40.8	--	2,712	110,600	124
	Urban Agricultural Transition Area	118.4	--	0	0	0
Natural Habitat Area	Natural Habitat Area	47.1	--	0	0	0
Neighborhood Retail	Neighborhood Mixed Use	2.9	--	2,400	7,000	8
Public/Semi-Public	Education Farm	2.8	--	2,400	6,700	8
	City Stormwater Conveyance	21.4	--	0	0	0
	Public Day School	2.4	--	2,400	5,800	6
	Public Safety Center	2.5	--	2,400	6,000	7
High Density Residential	West Park South	7.1	210	174	36,500	41
	West Park North	5.1	150	174	26,100	29
Medium Density Residential	East Village	41.4	265	345	91,400	102
	Central Village East	20.7	155	345	53,500	60
	Central Village West	19.4	160	345	55,200	62
	North Park Village	38.2	391	345	134,900	151
	Parkside Village East	8.1	68	345	23,500	26
	Parkside Village West	8.1	91	345	31,400	35
Low Density Residential	North Village	61.4	310	345	107,000	120
Total	--	474.9	1,800	--	769,100	862
¹ Based on 2023 SB 610 Water Supply Assessment of Village Farms Davis Table 3-4.						
Source: Brown and Caldwell, April 2024.						

For buildout conditions, several previously approved developments need to be considered in the current analysis. These proposed developments include the following:

- Nishi development, located in the triangle between Interstate 80 (I-80), the Union Pacific Railroad (UPRR), and the western end of Olive Drive;
- Bretton Woods development, located in west Davis north of Covell Boulevard and west of Sutter Davis Hospital;
- Davis Innovation and Security Campus (DiSC) 2022 development, which includes the Mace Triangle property and is located on the northeast side of the City, north of I-80 and east of Mace Boulevard;
- Shriners development, located north of East Covell Boulevard and east of the Wildhorse agricultural area; and
- Palomino Place project, located at the southeast corner of the Wildhorse Ranch.

The Palomino Place project is within the existing City limits, and wastewater generation from the area is already accounted for in the City's existing sewer system model. Therefore, Palomino Place does not require further consideration.

The other four developments would consist of 700, 240, 460 and 1,200 residential EDUs, respectively. The DiSC 2022 development also includes 58 acres of non-residential development, equivalent to 257 EDUs using 2.4 persons per EDU and 61 gpd/capita from the West Yost analysis combined with a unit wastewater flow factor of 647 gpd per acre from the Mace Ranch Water Supply Assessment and a study on the Impacts of Innovation Center/Nishi Property Development on WWTP Capacity. The combination of existing sewer connections plus connections from the four foregoing developments, all of which are outside the existing City Limits, is referred to as “buildout” conditions.

West Yost used the proposed 1,800 EDUs planned for the Proposed Project, 2.4 persons per EDU, and 61 gpd per capita to obtain an ADWF of 0.264 mgd. For the BRPA, Cunningham Engineering confirmed that the ADWF would be the same as the Proposed Project.¹⁴

The ADWF for the buildout scenario in the Wastewater Collection Memorandum hydraulic model totaled 4.27 mgd, whereas the buildout ADWF from the WWTP Capacity Memorandum totaled 4.32 mgd. To align the two analyses, the buildout flows in the hydraulic model were scaled up to match the buildout flow value from the WWTP Capacity Memorandum.

The modeled buildout PWWF values and flow depth (d) to pipe diameter (D) (d/D) results, both with and without the Proposed Project, are shown in Table 4.14-8 for each of the gravity mains between East Covell Boulevard and the WWTP.

Wastewater Treatment Plant Capacity Technical Memorandum

The WWTP Capacity Memorandum builds upon a capacity analysis of the WWTP completed by West Yost for the City in 2022, which provided then-current WWTP influent flows, loads and service area population, and defined the capacity of each WWTP process unit in terms of ADWF. The 2022 West Yost capacity analysis identified the WWTP's ADWF capacity as 4.3 mgd, the average of ADWFs for the recent non-drought years 2012, 2013 and 2017 through 2019.

¹⁴ Cunningham Engineering. *Biological Resource Preservation Alternative – Sewer and Water Evaluation Memo* [Table S-1]. November 11, 2024.



Table 4.14-8 Modeled Wastewater Flows							
System ID			Existing Pipe Diameter (inches)	Modeled PWWF (mgd)		d/D Results	
Gravity Main	Upstream Node	Downstream Node		Buildout	Buildout Plus Village Farms	Buildout	Buildout Plus Village Farms
O14-004.1	O14-004	N14-004	42	8.07	8.05	0.41	0.41
N14-004.1	N14-004	N14-003	42	8.07	8.05	0.41	0.41
N14-003.1	N14-003	N14-002	42	8.07	8.05	0.41	0.41
N14-002.1	N14-002	N14-001	42	8.06	8.04	0.41	0.41
N14-001.1	N14-001	M14-004	42	8.06	8.04	0.48	0.48
M14-004.1	M14-004	M14-003	42	8.04	8.02	0.65	0.66
M14-003.1	M14-003	M14-002	42	8.06	8.48	0.65	0.66
M14-002.1	M14-002	M14-001	42	8.04	8.46	0.59	0.60
M14-001.1	M14-001	L14-001	42	8.15	8.45	0.54	0.55
L14-001.1	L14-001	L14-002	42	8.15	8.45	0.53	0.54
L14-002.1	L14-002	L14-003	42	8.15	8.45	0.51	0.52
L14-003.1	L14-003	L14-004	42	8.14	8.45	0.44	0.45
L14-004.1	L14-004	M15-001	42	8.14	8.45	0.42	0.43
M15-001.1	M15-001	M15-002	42	8.14	8.44	0.60	0.61
M15-002.1	M15-002	M15-003	42	8.13	8.44	0.60	0.61
M15-003.1	M15-003	M15-004	42	8.13	8.43	0.47	0.48
M15-004.1	M15-004	M15-005	42	8.12	8.43	0.47	0.48
M15-005.1	M15-005	M15-006	42	8.12	8.42	0.47	0.48
M15-006.1	M15-006	M16-001	42	8.11	8.41	0.48	0.49
M16-001.1	M16-001	M16-006	42	8.10	8.41	0.49	0.50
M16-006.1	M16-006	M16-002	42	8.94	9.23	0.49	0.50
M16-002.1	M16-002	M16-003	42	8.93	9.23	0.49	0.50
M16-003.1	M16-003	M16-004	42	8.93	9.22	0.49	0.50
M16-004.1	M16-004	M16-005	42	8.92	9.21	0.48	0.49
M16-005.1	M16-005	M17-001	42	8.92	9.21	0.47	0.48
M17-001.1	M17-001	M17-002	42	8.91	9.20	0.47	0.48
M17-002.1	M17-002	M17-003	42	8.91	9.20	0.47	0.48
M17-003.1	M17-003	M17-004	42	8.90	9.19	0.47	0.49
M17-004.1	M17-004	M17-005	42	8.90	9.18	0.48	0.50
M17-005.1	M17-005	M18-012	42	8.89	9.18	0.50	0.52
M18-012.1	M18-012	M18-006A	42	8.89	9.17	0.50	0.52
M18-006A.1	M18-006A	M18-006	42	9.79	10.44	0.50	0.52
M18-006.1	M18-006	M18-007	42	9.78	10.44	0.49	0.51
M18-007.1	M18-007	M18-008	42	9.78	10.43	0.49	0.51
M18-008.1	M18-008	M18-009	42	9.78	10.43	0.49	0.51
M18-009.1	M18-009	M18-010	42	9.77	10.43	0.49	0.51
M18-010.1	M18-010	M18-011	42	9.77	10.42	0.49	0.51
M18-011.1	M18-011	M19-001	42	9.77	10.42	0.48	0.49
M19-001.1	M19-001	M19-002	42	9.76	10.41	0.48	0.49
M19-002.1	M19-002	M19-003	42	9.76	10.41	0.48	0.50
M19-003.1	M19-003	M19-004	42	9.76	10.41	0.48	0.50
M19-004.1	M19-004	M19-005	42	9.75	10.40	0.49	0.51
M19-005.1	M19-005	M20-001	42	9.75	10.40	0.50	0.52
M20-001.1	M20-001	M20-002	42	9.75	10.40	0.50	0.52
M20-002.1	M20-002	M20-003	42	9.74	10.61	0.48	0.51
M20-003.1	M20-003	M20-004	42	9.74	10.61	0.48	0.50
M20-004.1	M20-004	M20-005	42	9.74	10.61	0.47	0.50
M20-005.1	M20-005	M20-006	42	9.73	10.61	0.44	0.46
M20-006.1	M20-006	M20-007	42	9.73	10.60	0.43	0.45
M20-007.1	M20-007	L21-001	42	10.80	11.68	0.56	0.59
L21-001.1	L21-001	L21-002	42	10.79	11.67	0.58	0.61
L21-002.1	L21-002	L21-003	42	10.78	11.66	0.60	0.63
L21-003.1	L21-003	L21-004	42	10.78	11.66	0.64	0.67
L21-004.1	L21-004	L21-005	42	10.77	11.65	0.64	0.67
L21-005.1	L21-005	L21-006	42	10.76	11.65	0.53	0.56
L21-006.1	L21-006	L21-007	42	10.76	11.64	0.54	0.56
L21-007.1	L21-007	L21-008	42	10.75	11.63	0.54	0.56
L21-008.1	L21-008	L21-009	42	10.75	11.63	0.54	0.56
L21-009.1	L21-009	L21-010	42	10.74	11.62	0.53	0.56
L21-010.1	L21-010	K21-001	42	10.74	11.62	0.53	0.56
K21-001.1	K21-001	K21-002	42	10.73	11.61	0.53	0.56
K21-002.1	K21-002	K21-003	42	10.73	11.61	0.53	0.56
K21-003.1	K21-003	K21-004	42	10.72	11.60	0.53	0.55
K21-004.1	K21-004	K21-005	42	10.72	11.60	0.52	0.54
K21-005.1	K21-005	J21-WWTP	42	10.72	11.60	0.50	0.52
Note: gravity mains with d/D ratios of greater than the City's design criteria of 0.6 are highlighted in yellow.							
Source: West Yost, April 23, 2024.							



The associated service area population for the current ADWF was about 69,000 people, and the associated per capita ADWF was 62 gpd per capita.

A target design ADWF of 5.3 mgd was established in the 2022 West Yost capacity analysis using the 62 gpd per capita and a previously established design population for the WWTP of 85,700 people. Thus, the WWTP Capacity Memorandum identified the WWTP's ADWF capacity as 5.3 mgd. The WWTP Capacity Memorandum evaluated the same four development scenarios used in the Wastewater Collection Memorandum. As previously discussed, the buildout ADWF in the Wastewater Collection Memorandum hydraulic model totaled 4.27 mgd, whereas the buildout ADWF from the WWTP Capacity Memorandum totaled 4.32 mgd. To align the two analyses, the buildout flows in the hydraulic model were scaled up to match the buildout flow value from the WWTP Capacity Memorandum. The WWTP Capacity Memorandum relied on the following information:

- The total EDUs anticipated for existing and planned sewer connections within the City Limits is 28,553 EDUs, which includes Palomino Place;
- Buildout of the collection system also includes the Nishi, Bretton Woods, DiSC 2022, and Shriners developments, which would consist of 700, 240, 460, and 1,200 EDUs, respectively;
- The DiSC 2022 development also includes 58 acres of non-residential development, equivalent to 257 EDUs using 2.4 persons per EDU and 61 gpd/capita from the West Yost analysis combined with a unit wastewater flow factor of 647 gpd per acre from the Mace Ranch Water Supply Assessment and a study on the Impacts of Innovation Center/Nishi Property Development on WWTP Capacity;
- The Proposed Project would add an additional 1,800 EDUs;
- The total EDUs that must be accounted for through the capacity study is 33,210 EDUs;
- At 2.4 persons per EDU, the total population is anticipated to be 79,700; and
- With the addition of 2023 flows to the WWTP influent flow analysis, an updated current ADWF per capita flow is calculated as 61 gpd per capita, which is slightly lower than that established in the 2022 West Yost capacity analysis.

The calculated EDUs, service area populations, and ADWFs for the development scenarios of interest are shown in Table 4.14-4.

Project-Specific Impacts and Mitigation Measures

The following discussion of impacts is based on the implementation of the Proposed Project in comparison with the standards of significance identified above.

4.14-1 Require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects. Based on the analysis below, the impact is *less than significant*.

The following discussion includes an analysis of potential impacts related to the new utility infrastructure installed as part of the Proposed Project and BRPA, the construction or relocation of which could cause significant environmental effects.



Because the Proposed Project and BRPA would require generally similar utility improvements, the following evaluation applies to both development scenarios.

Proposed Project, Biological Resources Preservation Alternative

The following discussions evaluate the potential for the proposed water, wastewater, electric power, and telecommunication improvements to result in significant environmental effects.

Water Conveyance Infrastructure

Upon annexation of the project site/BRPA site into the City limits, water service would be provided to the Proposed Project or BRPA by the City of Davis. In the immediate project vicinity, East Covell Boulevard contains an existing 10-inch line and Pole Line Road contains an existing water line that ranges in diameter from 10 inches to 12 inches. As shown in Figures 3-9 and 3-19 in Chapter 3, Project Description, of this EIR and reproduced herein as Figure 4.14-2 and Figure 4.14-3, new eight-inch, 10-inch, and 12-inch water lines would be installed and extended into the project site/BRPA site within the new on-site internal streets from the existing water lines in East Covell Boulevard and Pole Line Road. From the new water lines, water service would be provided to each structure through new water laterals. In addition, the Proposed Project and BRPA would include installation of off-site water line improvements in three existing roadways in the project vicinity. Within Fifth Street, southeast of the project site near Pole Line Road, 75 linear feet of 10-inch water line would be replaced with water lines 12 to 16 inches in diameter. At the Anderson Road/Alvarado Avenue intersection, 150 linear feet of 10-inch water line would be replaced with water lines 12 to 14 inches in diameter. Within Sycamore Lane, near West Covell Boulevard, 75 linear feet of 12-inch water line would be replaced with new 12-inch water lines.

Installation of the new water supply infrastructure, including new fire water lines and hydrants, would occur either in existing road right-of-way (ROW) or in areas proposed for disturbance as part of development of the Proposed Project or BRPA. All potential physical environmental impacts that could result from development of the Proposed Project and BRPA, including the new on-site and off-site water distribution infrastructure, have been evaluated throughout the technical chapters of this EIR. All new water infrastructure would be designed consistent with the applicable standards established by the City of Davis Public Works Department Standard Specifications.

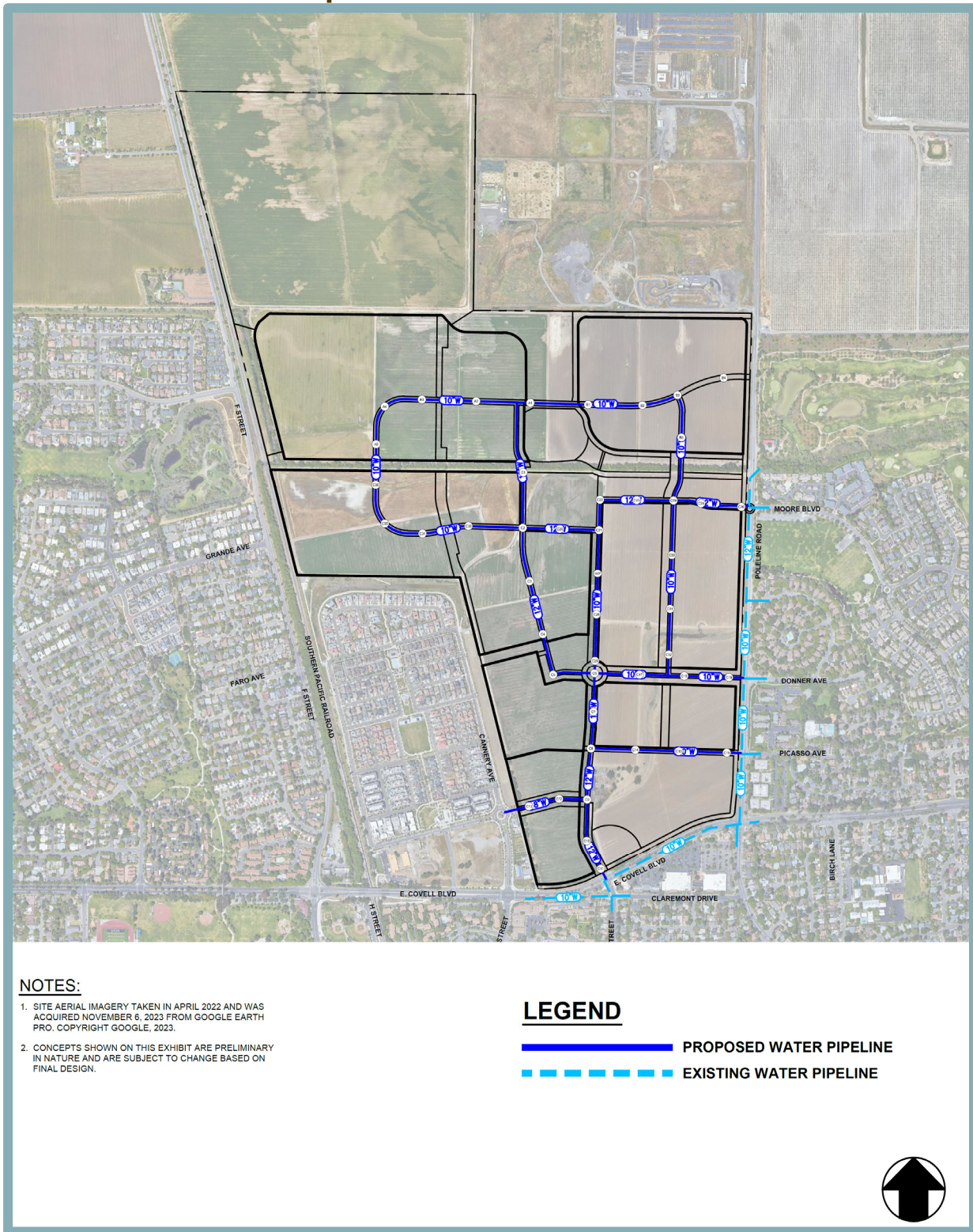
Based on the above, the Proposed Project and BRPA would not require or result in the relocation or construction of new or expanded water facilities, the construction or relocation of which could cause significant environmental effects.

Wastewater Infrastructure

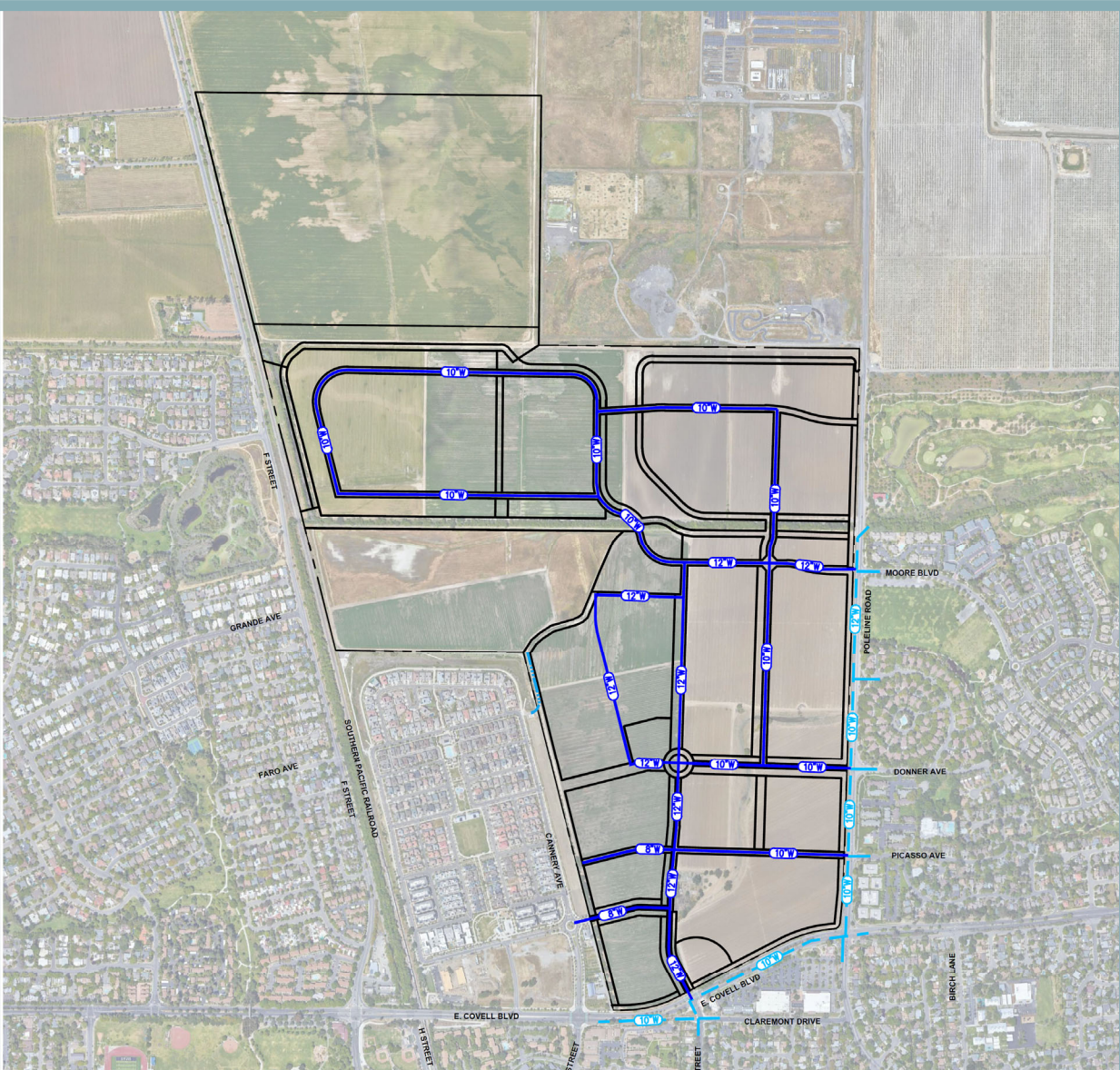
Upon annexation of the project site/BRPA site into the City limits, wastewater conveyance service would be provided to the Proposed Project or BRPA by the City of Davis. An existing 42-inch sewer line traverses through the project site/BRPA site in a north-to-south direction and pivots towards the east along the northern site boundary. As shown in Figures 3-10 and 3-20 in Chapter 3, Project Description, of this EIR and reproduced herein as Figure 4.14-4 and Figure 4.14-5, new eight-inch, 10-inch, and 12-inch sewer lines would be installed and extended into the project site/BRPA site within the new on-site internal streets.



**Figure 4.14-2
Proposed Water Infrastructure**



**Figure 4.14-3
Biological Resources Preservation Alternative Water Infrastructure**



NOTES:

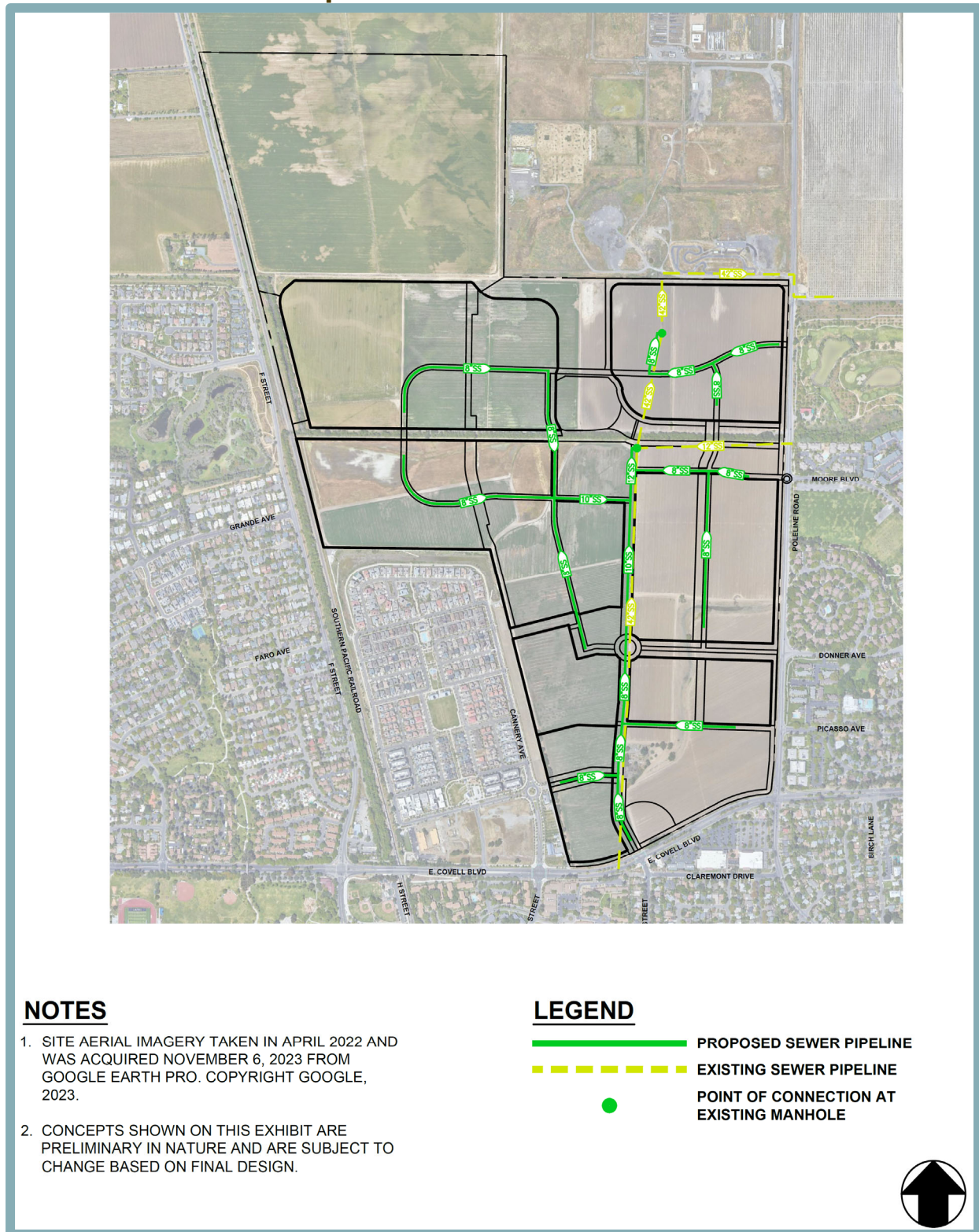
1. SITE AERIAL IMAGERY TAKEN IN APRIL 2022 AND WAS ACQUIRED NOVEMBER 6, 2023 FROM GOOGLE EARTH PRO. COPYRIGHT GOOGLE, 2023.
2. CONCEPTS SHOWN ON THIS EXHIBIT ARE PRELIMINARY IN NATURE AND ARE SUBJECT TO CHANGE BASED ON FINAL DESIGN.

LEGEND

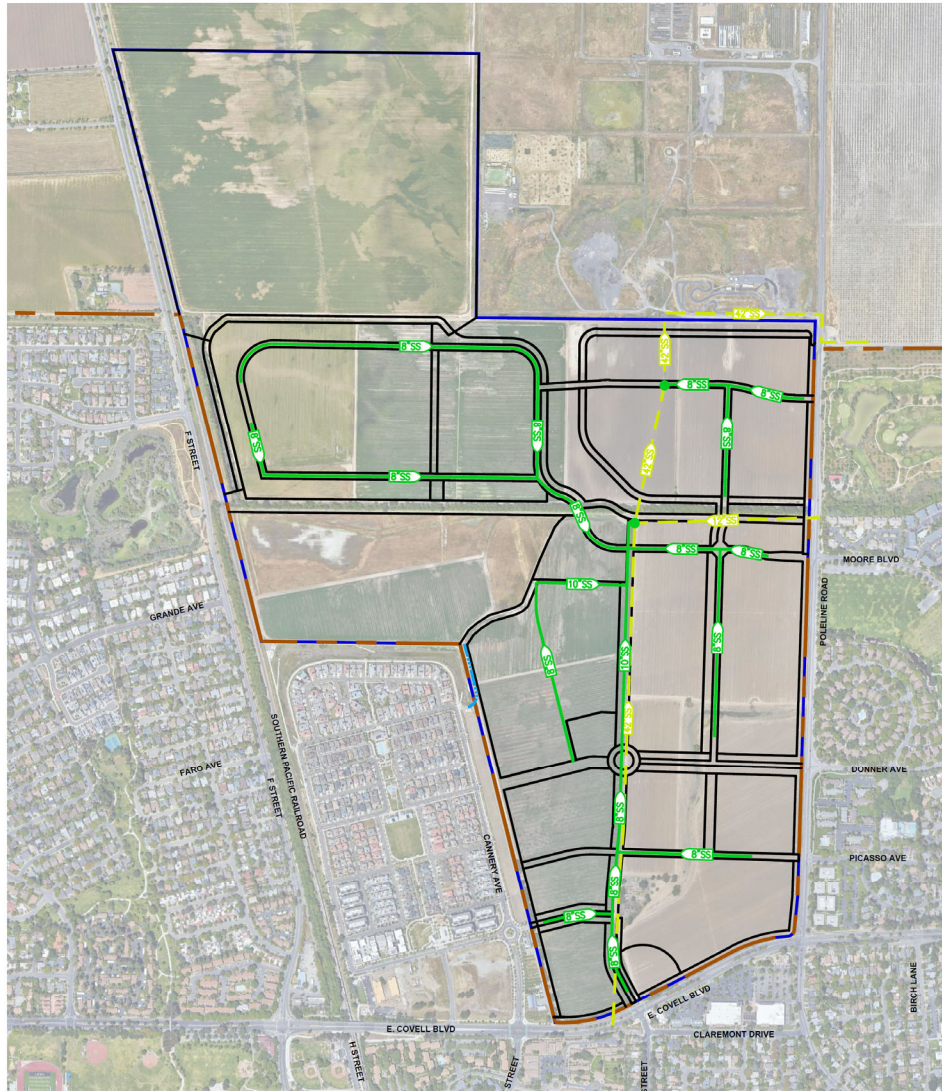
- PROPOSED WATER PIPELINE
- - - - EXISTING WATER PIPELINE



**Figure 4.14-4
Proposed Sewer Infrastructure**



**Figure 4.14-5
Biological Resources Preservation Alternative Sewer Infrastructure**



NOTES:

1. SITE AERIAL IMAGERY TAKEN IN APRIL 2022 AND WAS ACQUIRED NOVEMBER 6, 2023 FROM GOOGLE EARTH PRO. COPYRIGHT GOOGLE, 2023.
2. CONCEPTS SHOWN ON THIS EXHIBIT ARE PRELIMINARY IN NATURE AND ARE SUBJECT TO CHANGE BASED ON FINAL DESIGN.

LEGEND

- PROPOSED SEWER PIPELINE
- - - EXISTING SEWER PIPELINE
- POINT OF CONNECTION AT EXISTING MANHOLE



From the new sewer lines, sewer conveyance services would be provided to each structure through new sewer laterals.

All potential physical environmental impacts that could result from development of the Proposed Project and BRPA, including new on-site sewer infrastructure, have been evaluated throughout the technical chapters of this EIR. The new sewer infrastructure would be designed and constructed in accordance with the applicable standards set forth in the City of Davis Public Works Design Standards, ensuring the new sewer lines are constructed in conformance with proper materials and sizing.

In addition, according to the Wastewater Collection Memorandum, the Proposed Project and BRPA are anticipated to result in wastewater ADWF flows of 0.264 mgd. The modeled buildout PWWF values and d/D results, both with and without the Proposed Project/BRPA, are shown in Table 4.14-8 for each of the gravity mains between East Covell Boulevard and the WWTP. The City's design criteria allows for a maximum d/D ratio of 0.6. The gravity mains with d/D ratios of greater than 0.6 are highlighted to identify an exceedance of the City's design criteria. As shown in Table 4.14-8, four gravity main segments do not exceed the criteria without the Proposed Project/BRPA but exceed the criteria after the flows from the Proposed Project/BRPA are added. However, the Wastewater Collection Memorandum found that the effect of the Proposed Project/BRPA is very slight, increasing the d/D ratio at the identified sewer main segments from 0.6 to 0.61. Such an increase does not warrant system improvements. Thus, the Wastewater Collection Memorandum concluded wastewater flows generated by the Proposed Project/BRPA could be accommodated by the existing conveyance system.

Based on the above, the Proposed Project and BRPA would not require or result in the relocation or construction of new or expanded wastewater facilities, the construction or relocation of which could cause significant environmental effects.

Electricity and Telecommunications Infrastructure

The Proposed Project and BRPA would connect to existing electricity and telecommunications infrastructure located in the project vicinity. It should be noted that the proposed residences would be all-electric and, thus, would not connect to existing natural gas infrastructure. Given that the project site/BRPA site is adjacent to existing development, the Proposed Project and BRPA would not require major infrastructure improvements related to existing electrical and telecommunications utilities beyond the necessary infrastructure to connect to existing systems.

The new connections to existing electricity and telecommunications infrastructure would be installed consistent with Davis Municipal Code Article 38.01, ensuring that the new infrastructure is installed underground in accordance with established construction standards, as well as with the rules and regulations authorized by the State Public Utilities Commission.

Based on the above, development of the Proposed Project and BRPA would not require or result in the relocation or construction of new or expanded electricity and



telecommunications facilities, the construction or relocation of which could cause significant environmental effects.

Conclusion

Based on the above, development of the Proposed Project and BRPA would not require or result in the relocation or construction of new or expanded water, wastewater, electricity, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects. Therefore, a ***less-than-significant*** impact could occur.

Mitigation Measure(s)

None required.

4.14-2 Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, single dry, and multiple dry years. Based on the analysis below, the impact is *less than significant*.

The following discussions evaluate the potential for the City to have sufficient water supplies available to serve the Proposed Project and BRPA. Although the Proposed Project and BRPA would both include development of 1,800 dwelling units, as well as neighborhood services and public, semi-public, and educational uses, the following discussion evaluates the water demand associated with each development scenarios separately.

Proposed Project

As part of the WSA and as summarized in Table 4.14-9, the total projected water supplies and demand during normal, single dry, and multiple dry years from 2025 to 2045 was calculated for the City of Davis, including demands associated with the Proposed Project.

As shown in Table 4.14-9, the City's projected available water supply would meet the anticipated demand for water generated by the Proposed Project and the City's existing commitments, as well as reasonably foreseeable cumulative development, during normal, single dry, and multiple dry years.

Biological Resources Preservation Alternative

Table 4.14-7 provides a summary of the water demand calculations for the proposed Village Farms Davis BRPA project. Consistent with the WSA for the Proposed Project prepared by Brown and Caldwell (see Appendix T of this EIR), the water demand factors are based on Table 3-4 of the WSA. The Proposed Project resulted in a water demand of 754,500 gpd (850 AFY); the BRPA would result in slightly higher water demand as compared to the Proposed Project due to the higher ratio of single-family units to apartment units. While the Proposed Project resulted in a water demand of 754,500 gpd (850 AFY), the BRPA would result in a total water demand of 769,100 gpd (862 AFY). As identified in the WSA, the water supply in the City of Davis is 23,320 AFY in a normal year and 15,260 AFY in dry years. Historical and projected water demands in the City, without the Proposed Project/BRPA, are estimated to be 10,300



AFY in 2035. Because the BRPA is anticipated to be built out by 2035, the cumulative water demand in the City would be an estimated 11,162 AFY. Based on the projected water supply, adequate water supply for the BRPA would exist.

Table 4.14-9						
City of Davis Plus Proposed Project Water Demand and Supply – Normal, Single Dry, and Multiple Dry Years (AFY)						
		2025	2030	2035	2040	2045
Normal Year						
Total Demand		9,790	11,439	12,091	12,081	12,081
Total Supply		23,320	23,320	23,320	23,320	23,320
Supply Minus Demand		13,530	11,881	11,229	11,239	11,239
Single Dry Year						
Total Demand		9,790	11,439	12,091	12,081	12,081
Total Supply		15,260	15,260	15,260	15,260	15,260
Supply Minus Demand		5,470	3,821	3,169	3,179	3,179
Multiple Dry Years						
First Year	Total Demand	9,790	11,439	12,091	12,081	12,081
	Total Supply	15,260	15,260	15,260	15,260	15,260
	Supply Minus Demand	5,470	3,821	3,169	3,179	3,179
Second Year	Total Demand	9,790	11,439	12,091	12,081	12,081
	Total Supply	15,260	15,260	15,260	15,260	15,260
	Supply Minus Demand	5,470	3,821	3,169	3,179	3,179
Third Year	Total Demand	9,790	11,439	12,091	12,081	12,081
	Total Supply	15,260	15,260	15,260	15,260	15,260
	Supply Minus Demand	5,470	3,821	3,169	3,179	3,179
Fourth Year	Total Demand	9,790	11,439	12,091	12,081	12,081
	Total Supply	15,260	15,260	15,260	15,260	15,260
	Supply Minus Demand	5,470	3,821	3,169	3,179	3,179
Fifth Year	Total Demand	9,790	11,439	12,091	12,081	12,081
	Total Supply	15,260	15,260	15,260	15,260	15,260
	Supply Minus Demand	5,470	3,821	3,169	3,179	3,179
<i>Source: Brown and Caldwell, December 2023.</i>						

Conclusion

Based on the above, the City would have sufficient water supplies available to serve buildout of the Proposed Project and the BRPA, as well as reasonably foreseeable future development, during normal, single dry, and multiple dry years, and a **less-than-significant** impact would occur.

Mitigation Measure(s)

None required.



4.14-3 Result in a determination by the wastewater treatment provider which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments. Based on the analysis below, the impact is *less than significant*.

The following discussions evaluate the potential for the wastewater treatment provider to have adequate capacity to serve the Proposed Project or BRPA in addition to the provider's existing commitments. Because the Proposed Project and BRPA would both include development of 1,800 dwelling units, as well as neighborhood services and public, semi-public, and educational uses, the following evaluation applies to both development scenarios.

Proposed Project, Biological Resources Preservation Alternative

The WWTP Capacity Memorandum concluded that the City of Davis WWTP had an influent ADWF design target at or above 5.3 mgd available capacity, with the exception of the anaerobic digesters. The WWTP's anaerobic digesters were determined to have a slightly lower ADWF of 5.1 mgd. As shown in Table 4.14-4, the maximum influent ADWF for Existing Plus Village Farms Davis Project is estimated to be 4.4 mgd, of which 0.264 mgd would be associated with the development of the Proposed Project or BRPA. Because the maximum influent ADWF of 4.4 mgd would not exceed the established ADWF capacity of 5.1 mgd, the WWTP Capacity Memorandum concluded that the City's WWTP would have sufficient capacity to accommodate flows generated by the Proposed Project or BRPA, as well as the City's existing commitments.

Based on the above, the Proposed Project and BRPA would not result in a determination by the wastewater treatment provider that adequate capacity to serve the project's projected demand in addition to the provider's existing commitments does not exist. Thus, a *less-than-significant* impact would occur.

Mitigation Measure(s)

None required.

4.14-4 Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals, or conflict with federal, State, and local management and reduction statutes and regulations related to solid waste. Based on the analysis below, the impact is *less than significant*.

The following discussions evaluate the potential for the Proposed Project and BRPA to generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals, or conflict with federal, State, and local management and reduction statutes and regulations related to solid waste. Because the Proposed Project and



BRPA would both include development of 1,800 dwelling units, as well as neighborhood services and public, semi-public, and educational uses, the following evaluation applies to both development scenarios.

Proposed Project, Biological Resources Preservation Alternative

Solid waste services (collection and recycling) are provided to the City of Davis by Recology Davis. All non-recyclable wastes collected from the City are disposed of at the 770-acre Yolo County Central Landfill in the northeast portion of the Davis planning area. According to CalRecycle, the Yolo County Central Landfill has a remaining capacity of 33,140,373 CY (or 68 percent remaining capacity) and has a current anticipated closure date of 2124.¹⁵

According to the U.S. Environmental Protection Agency (USEPA) report, Estimating 2003 Building-Related Construction and Demolition Materials Amounts, residential construction activities generate an average of 4.39 pounds per square foot (lbs/sf) of waste.¹⁶ Both the Proposed Project and the BRPA would include construction of 1,800 new residences; however, the total building square footage of the future units is currently unknown. Therefore, for analysis purposes, each unit was conservatively estimated to include 2,500 sf of building space. The construction of 1,800 new residences could result in a total estimated buildout square footage of 4,500,000 sf, the construction of which would produce approximately 19,755,000 pounds (9,877.5 tons) of construction waste (4.39 lbs/sf x 4,500,000 sf).

In addition, the Proposed Project and BRPA would include development of neighborhood services and public and semi-public uses, the latter of which would consist of a fire station, a Davis Joint Unified School District (DJUSD) Pre-kindergarten (Pre-K) Early Learning Center, and an Educational Farm. The Transportation Impact Study (TIS) prepared by Fehr & Peers estimated square footage for each of the foregoing uses in Table 4 of the TIS (see Appendix R of this EIR).¹⁷ As discussed therein, the neighborhood services are expected to total 30,500 sf, the fire station is anticipated to be 32,100 sf, and the Pre-K Early Learning Center is projected to include 17,700 sf. Overall, the new non-residential uses would total 80,300 sf. According to the USEPA, non-residential construction activities generate an average of 4.34 lbs/sf of waste.¹⁸ As such, the construction of the neighborhood services and public/semi-public uses would result in approximately 348,502 pounds (174.25 tons) of construction waste (4.34 lbs/sf x 80,300 sf).

Overall, construction of the uses evaluated in this EIR would produce a maximum of 20,103,502 pounds (10,051.75 tons) of potential waste production from construction. The CALGreen Code requires at least 65 percent diversion of construction waste for projects permitted after January 1, 2017. As such, a minimum of 6,533.64 tons of

¹⁵ California Department of Resources Recycling and Recovery. *SWIS Facility/Site Activity Details Yolo County Central Landfill (57-AA-0001)*. Available at: <https://www2.calrecycle.ca.gov/SolidWaste/Site/Details/689>. Accessed April 2024.

¹⁶ U.S. Environmental Protection Agency. *Estimating 2003 Building-Related Construction and Demolition Materials Amounts*. 2009.

¹⁷ Fehr & Peers. *Village Farms Davis Transportation Impact Study*. November 2024.

¹⁸ U.S. Environmental Protection Agency. *Estimating 2003 Building-Related Construction and Demolition Materials Amounts*. 2009.



waste would be diverted away from landfill disposal during construction. Considering the applicable CALGreen Code requirements, buildout of the Proposed Project and BRPA would be anticipated to produce up to 3,518.11 tons of waste during construction, using conservative assumptions. Construction waste generation represents a short-term increase in waste generation. Considering that the Yolo County Central Landfill has a remaining capacity of 68 percent of the total permitted capacity of the landfill, the construction waste would represent only an incremental contribution to the waste received at the landfill, and a less-than-significant impact would occur.

Operational solid waste generation from the Proposed Project and BRPA has been estimated based on an average waste generation rate for households and institutional square footage, as published by CalRecycle.¹⁹ The proposed 1,800 residences would produce approximately 22,014 lbs/day (11.01 tons/day) (1,800 x 12.23 lbs/household/day) of operational solid waste. The total non-residential square footage would produce approximately 562.1 lbs/day (0.28 tons/day) (80,300 sf x 0.007 lbs/sf/day) of operational solid waste. Overall, operational solid waste associated with the development of the Proposed Project or BRPA would total 11.29 tons/day. The Yolo County Central Landfill has a permitted throughput of 3,000 tons/day and, thus, would be able to accommodate the operational waste generated by the Proposed Project or BRPA. In addition, considering that the Yolo County Central Landfill has a remaining capacity of 68 percent, the operational waste associated with the Proposed Project or BRPA would represent only an incremental contribution to the waste received at the landfill.

Based on the above, the Proposed Project and the BRPA would not generate solid waste in excess of State or local standards or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals. In addition, neither development scenario would conflict with applicable federal, State, and local management and reduction statutes and regulations related to solid waste. Thus, a **less-than-significant** impact would occur.

Mitigation Measure(s)

None required.

Cumulative Impacts and Mitigation Measures

As defined in Section 15355 of the CEQA Guidelines, “cumulative impacts” refers to two or more individual effects which, when considered together, are considerable, compound, or increase other environmental impacts. The individual effects may be changes resulting from a single project or a number of separate projects. The cumulative impact from several projects is the change in the environment that results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects.

The cumulative setting for impacts related to public services and recreation encompasses buildout of the Proposed Project or BRPA in conjunction with the development of the Davis General Plan

¹⁹ California Department of Resources Recycling and Recovery. *Estimated Solid Waste Generation Rates*. Available at: <https://www2.calrecycle.ca.gov/wastecharacterization/general/rates>. Accessed November 2023.



planning area, as well as a list of present and probable future projects. For more details regarding the cumulative setting, refer to Chapter 6, Statutorily Required Sections, of this EIR.

4.14-5 Increase in demand for utilities and service systems associated with the Proposed Project, in combination with future buildout of the City of Davis General Plan. Based on the analysis below, the cumulative impact is *less than significant*.

The cumulative analysis in this EIR is based upon development of either the Proposed Project or the BRPA, in conjunction with buildout of the Davis General Plan planning area, as well as a list of present and probable future projects. In addition to the Proposed Project/BRPA, Shriners Property, a 234-acre residential subdivision project located north of the East Covell Boulevard/Alhambra Drive intersection, is currently under review by the City. Just west of Shriners Property, north of the East Covell Boulevard/Monarch Lane intersection, is the Palomino Place Project, which is proposed on a 25-acre site and would include single- and multi-family housing, as well as health and training facilities open to the public. Other development projects undergoing planning review are located in the southern portion of the City, including two new multi-family residential apartment buildings, a new commercial hotel building, and a 700-unit residential neighborhood located on the 46.9-acre site formerly known as the Nishi Housing Site. The Bretton Woods University Retirement Community project, located northwest of the West Covell Boulevard/Risling Place intersection, is currently under review by the City of Davis. Finally, the City of Davis previously approved the Davis Innovation and Sustainability Campus (DiSC) 2022 Project, which was proposed for a 102-acre site (plus the 16.5-acre Mace Triangle property) located immediately to the east of Mace Boulevard and to the north of CR 32A, northeast of the City limits.

Because the Proposed Project and BRPA would both include development of 1,800 dwelling units, as well as neighborhood services and public, semi-public, and educational uses, the following evaluation applies to both development scenarios.

Proposed Project, Biological Resources Preservation Alternative

The following discussions provide an analysis of the contribution of the Proposed Project and BRPA to cumulative impacts associated with water supply, wastewater treatment, dry utilities, and solid waste within the City of Davis under cumulative conditions.

Water Supply

Cumulative development, in conjunction with the Proposed Project or BRPA, would result in increased demand for water supplies provided by the City. According to the Citywide WSA, the total projected water supply in a normal year would be 23,320 AFY and would be 15,260 AFY in single and multiple dry years from 2025 through 2045. Based on the demand in AFY presented in Table 4.14-4, the City is anticipated to have a surplus of water supplies in all water year types to accommodate buildout of the City's General Plan planning area and present and future probable projects, including the Proposed Project or BRPA.



In addition, new water infrastructure required as part of cumulative development within the City would be required to be designed and constructed in compliance with the applicable standards set forth in the City of Davis Public Works Design Standards. Compliance with the foregoing standards would ensure new water lines installed as part of buildout of the City of Davis are constructed in conformance with proper materials and sizing.

Based on the above, adequate water supply would be available to serve cumulative development within the City, in conjunction with the Proposed Project and BRPA, and a less-than-significant impact would occur.

Wastewater Treatment

With respect to wastewater, according to the WWTP Capacity Memorandum, cumulative development would result in increased demand for wastewater treatment services, with the ADWF flows under cumulative buildout conditions projected to be 4.9 mgd. The WWTP Capacity Memorandum also concluded that based on a 2022 capacity analysis prepared by West Yost, the City's WWTP facilities have available capacity at or above a 5.3 mgd influent ADWF design target, with the exception of the facility's anaerobic digesters, which have a firm capacity at a slightly lower ADWF of 5.1 mgd. The WWTP Capacity Memorandum concluded that the City's WWTP facilities would have sufficient capacity to support flows and loads associated with cumulative buildout of the City.

In addition, based on the results of the Wastewater Collection Memorandum for cumulative buildout conditions, the City identified four gravity sewer main segments where flows would exceed the applicable d/D ratio (see Table 4.14-8). However, the Wastewater Collection Memorandum concluded that the impacts to the gravity mains under the cumulative development scenario would be very slight and improvements to the City's wastewater conveyance system are not currently recommended, as sewer flows could be accommodated by the existing conveyance system.

Based on the above, adequate wastewater treatment services would be available to serve cumulative development within the City of Davis, in conjunction with the Proposed Project or BRPA, and a less-than-significant impact would occur.

Electricity and Telecommunications Facilities

Environmental effects associated with the construction of new or expanded electricity and telecommunications facilities would primarily be project-specific, rather than cumulative. As noted under Impact 4.14-1, while development of the Proposed Project or BRPA would include new connections to existing infrastructure located in the project site/BRPA site vicinity, substantial extension of existing off-site electrical or telecommunications infrastructure would not be required. Therefore, the Proposed Project and BRPA would result in a less-than-significant cumulative impact related to construction of new or expanded electricity and telecommunications facilities.

Solid Waste

As previously discussed, according to CalRecycle, the Yolo County Central Landfill is anticipated to cease operations by 2124. Construction waste generated by development facilitated by buildout of the General Plan planning area would be



required to comply with the applicable provisions of the CALGreen Code, which requires at least 65 percent diversion of construction waste for projects permitted after January 1, 2017. In addition, the Yolo County Central Landfill has a remaining capacity of 33,140,373 CY, or 68 percent of the total capacity. Considering the remaining capacity at the landfill to serve future development, adequate capacity would be available to serve cumulative development within the City, in conjunction with the Proposed Project or BRPA, and a less-than-significant cumulative impact would occur.

Conclusion

Based on the above, adequate water supply, wastewater capacity, electricity, telecommunication facilities, and landfill capacity would be available to serve cumulative development in conjunction with development of the Proposed Project or BRPA. Therefore, a **less-than-significant** cumulative impact would occur.

Mitigation Measure(s)

None required.

