CHAPTER

5

Infrastructure and Public Facilities

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5.1 Introduction

A variety of public facilities and services are needed to support the development allocation proposed in this Specific Plan. Services include: water, sanitary sewer, storm drainage, solid waste disposal, fire and police protection, schools, library, and utilities. In addition, there are several infrastructure improvements required in the public right-of-way related to transportation and mobility.

Existing infrastructure is provided within public utility easements that run throughout the Plan Area by a variety of providers, as shown below in Table 5.1: Utility/ Service Providers. Removal and/or re-routing of existing utilities and associated easements will be required as part of plan implementation.

TABLE 5.1. UTILITY/ SERVICE PROVIDERS

Utility/ Service	Provider(s)
Water	California Water Service Company
Recycled Water	Santa Clara Valley Water District City of Sunnyvale California Water Service Company
Wastewater	Cupertino Sanitation District
Electricity	Pacific Gas and Electric
Gas	Pacific Gas and Electric
Fire Protection	Santa Clara County Fire Department
Police Protection	Santa Clara County Sheriff's Office, West Valley Division
Schools	Cupertino Union School District Fremont Union High School District
Library	Santa Clara County Library District
Solid Waste Disposal	Recology South Bay

5.2 Storm Drainage and Water Quality Management

Storm Drainage

An existing public storm drain main extends north under North Wolfe Road, traverses through the existing Vallco Mall property on the east side of North Wolfe Road, continuing through the KCR property to its discharge point into the Santa Clara Valley Water District's Junipero Serra Channel that runs along I-280 (near the I-280 SB off-ramps) and discharges into Calabazas Creek, which ultimately drains to the San Francisco Bay.

Storm drainage discharge from the Plan Area will be treated in stormwater treatment facilities designed for that purpose. The stormwater system for the Plan Area is shown in Figure 5.1: Conceptual Stormwater Management Plan. Rain water would be collected at grade throughout the project site and may be stored on-site in compliance with current Santa Clara county C.3 stormwater quality standards, at approximately the locations shown on Figure 5.1 prior to discharging to existing drains, ensuring that stormwater would meet all discharge and water quality standards.

Other innovative strategies to ensure that water quality standards are met may also be included in the project. Specific measures will be defined in a project-specific stormwater management plan. From the site, rainwater will be discharged directly into the relocated public storm drain located in the public utility easement for discharge through the adjacent properties to the North and to the Junipero Serra Channel.

Water Quality

The Plan Area currently contains buildings, parking lots, and other impervious surfaces that make up over 90 percent of the total area which were constructed prior to the current requirements related to stormwater discharge. Currently, stormwater runoff discharges into drain inlets that convey the runoff into Junipero Serra Channel, and ultimately into San Francisco Bay, with no treatment prior to discharge.

Stormwater requirements now mandate treating 100% of the stormwater runoff with Low Impact Development (LID) practices, practices, such as pollutant source control measures and stormwater treatment features aimed to maintain or restore the site's natural hydrological functions. These can include rainwater harvesting, re-use, infiltration, biotreatment, and green infrastructure, among others, or any combination of methods, prior to being allowed to discharge to the public storm drain system. Any future development will include the following features.

During Construction

The project shall comply with the NPDES General Construction Activity Storm Water Permit administered by the Regional Water Quality Control Board. Prior to construction grading the applicant shall file a Notice of Intent (NOI) and receive a Waste Discharger Identification (WDID) number to comply with the General Permit and prepare a Storm Water Pollution Prevention Plan that includes storm water quality best management practices (BMPs).

The Storm Water Management Plan shall detail how runoff and associated water quality impacts resulting from the proposed project will be controlled and/or managed. The Plan shall be submitted to the Director of Public Works for review and approval. The specific BMPs to be used in each phase of development shall be determined based on design and site-specific considerations and shall be determined prior to issuance of building and grading permits.

Post-Construction

1. The project shall comply with Provision C.3 of the MRP NPDES permit, which provides enhanced performance standards for the management of storm water for new development. Prior to issuance of building and grading permits, each phase of development shall include provisions for post-construction storm water controls in the project design in compliance with the MRP Provision C.3 requirements, and shall include source control and on-site treatment control BMPs for reducing contamination in stormwater runoff as permanent features of the project.

   The project shall include a stormwater management plan that incorporates Low Impact Development (LID) measures such as bioretention areas, porous concrete, infiltration facilities, and water harvesting devices to reduce the pollutant loads and volumes of stormwater runoff from the site. The stormwater management plan shall be consistent with the landscaping plan and trees to be preserved.

2. To protect groundwater from pollutant loading of urban runoff, BMPs that are primarily infiltration devices (such as infiltration trenches and infiltration basins) must meet, at a minimum, the following conditions:

   - Pollution prevention and source control BMPs shall be implemented to protect groundwater.
   - Use of infiltration BMPs cannot cause or contribute to degradation of groundwater.
   - Infiltration BMPs must be adequately maintained.
   - Vertical distance from the base of any infiltration device to the seasonal high groundwater mark must be at least 10 feet. In areas of highly porous soils and/or high groundwater table, BMPs shall be subject to a higher level of analysis (considering potential for pollutants such as on-site chemical use, level of pretreatment, similar factors).
   - Infiltration devices shall be located a minimum of 100 feet horizontally from any water supply wells.
   - Class V injection wells are not permitted.

3. BMPs shall be selected and designed to the satisfaction of the Director of Public Works in accordance with the requirements contained in the most recent versions of the following documents:

   - City of Cupertino Post-Construction BMP Section Matrix
   - SCVURPPP "Guidance for Implementing Storm water Regulations for New and Redevelopment Projects"
   - NPDES Municipal Storm water Discharge Permit issued to the City of Cupertino by the California Regional Water Quality Control Board, San Francisco Bay Region
   - California BMP Handbooks
   - Bay Area Stormwater Management Agencies Association (BASMAA) "Start at the Source" Design Guidance Manual
   - BASMAA "Using Site Design Standards to Meet Development Standards for

Stormwater Quality – A Companion Document to Start at the Source"

- City of Cupertino Planning Procedures Performance Standard.

4. To maintain effectiveness, all storm water treatment facilities shall include long-term maintenance programs.

5. The applicant, project arborist, and landscape architect, shall work with the City and the SCVURPPP to select pest resistant plants to minimize pesticide use, as appropriate, and the plant selection will be reflected in the landscape plans.

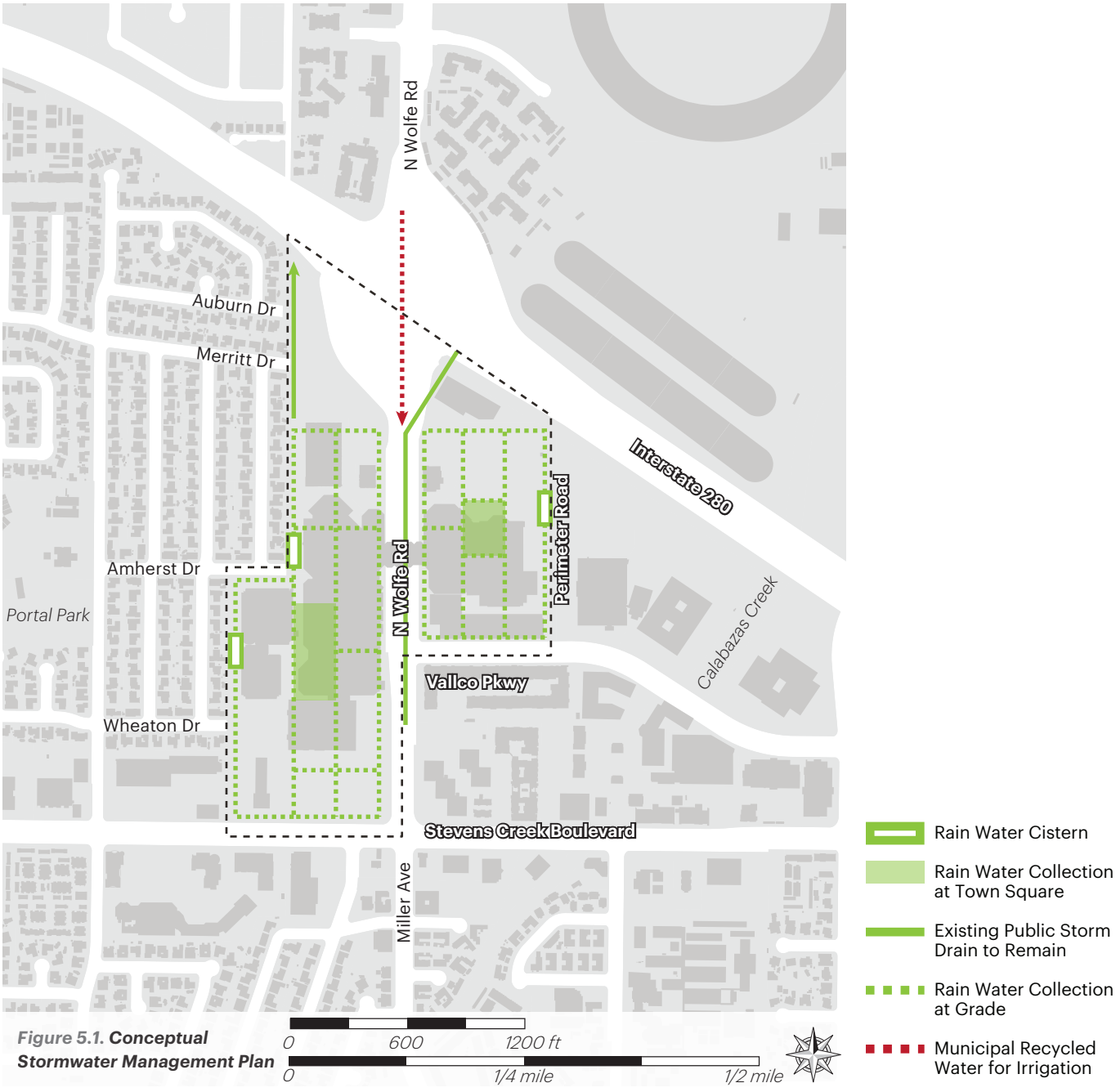

Figure 5.1. Conceptual Stormwater Management Plan

5.3 Potable, Fire and Recycled Water

Potable Water

Public water lines are owned and operated by the California Water Service Company (CalWater). There are currently public water mains within a Public Utility Easement under Perimeter Road, Stevens Creek Boulevard, North Wolfe Road and Vallco Parkway to supply domestic water, fire water, and irrigation.

Implementation of the Specific Plan may include rerouting of existing water lines and relocating easements. The project will utilize potable water from existing water mains. The new connections and water services will be designed to CalWater standards, and appropriate water meters will be provided as required by state law based on the type of use of that connection.

Fire Water Lines

The City of Cupertino and California Water Service Company have a combined public fire and domestic water system. All building fire water, including public hydrants along North Wolfe Road, Vallco Parkway and Stevens Creek Boulevard, and private hydrants on Perimeter and internal roads, will be served from this domestic water system and will be designed to meet or exceed fire code requirements. Recent flow data show that fire code requirements can be met without significant system upgrades.

Recycled Water

Recycled water in the project vicinity is supplied by the City of Sunnyvale's Water Pollution Control Plant (WPCP). There is presently no existing recycled water system serving the Plan Area. The closest recycled water line is the Wolfe Road Pipeline, which currently terminates at intersection of Homestead Road and Wolfe Road on the north side of I-280.

In 2013, the City of Sunnyvale, Santa Clara Valley Water District (SCVWD), California Water Company (CalWater), and others entered into a partnership to extend recycled water service in the City of Sunnyvale south to a nearby office campus. Long-term plans call for the extension of this recycled water line across I-280 to the intersection of North Wolfe Road / Stevens Creek Boulevard.

Future development is encouraged to incorporate recycled water within the project and extend the Wolfe Road Pipeline to Stevens Creek Boulevard.

The buildings and irrigation systems in the Plan Area will be plumbed to accept recycled water and accommodate the planned public recycled water system, if and when it is implemented. Santa Clara Valley Water District would be the wholesaler for recycled water, with CalWater being the distributer.

If required by the Building Code, future development will incorporate on-site water recycling including rainwater harvesting and gray water use for facilities that can accommodate on-site water recycling such as, landscaping or re-use in toilets. Figure 5.2: Conceptual Potable Water Service Plan, identifies the planned potable water system and additional

facilities to accommodate recycled water for the Plan Area.

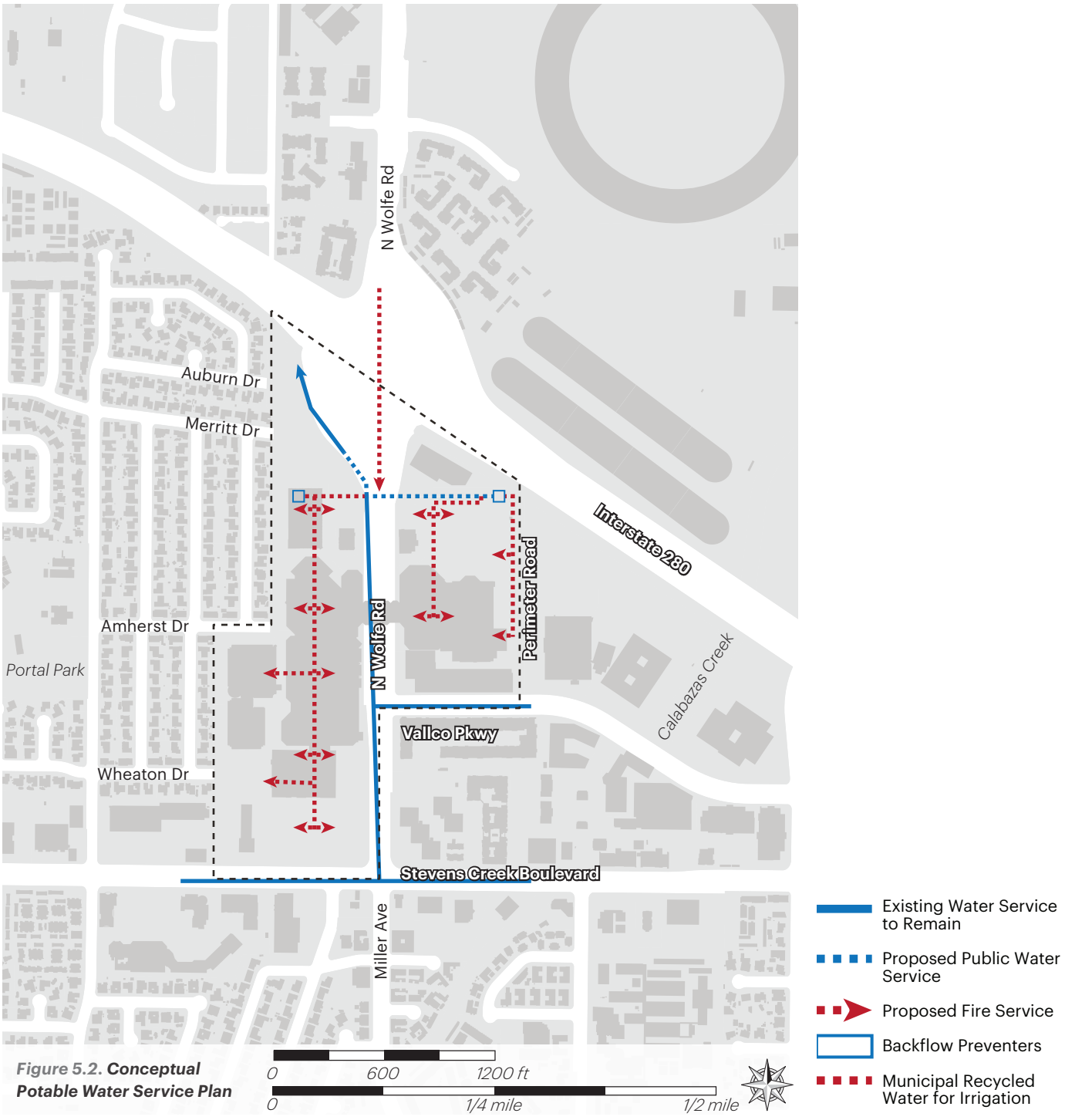

Figure 5.2. Conceptual Potable Water Service Plan

5.4 Wastewater Treatment and Conveyance

Existing 12-, 15-, and 27-inch sewer mains in Wolfe Road collect sewage generated from the project site. These sewer mains run north on Wolfe Road to Homestead Road and then to Cupertino Sanitary District's (CuSD) Flume station where CuSD's flow enters the City of Santa Clara system to the Regional Waste Facility for treatment.

The City of Santa Clara interceptor line has a peak design flow, permitted by agreement between CuSD and the City of Santa Clara, of 13.8 mgd and the peak 1-hour flow rate is currently modeled at 10.7 mgd.

Existing 12- and 15-inch sewer mains in Wolfe Road and downstream connections from the project site are near capacity under existing conditions. The 15-inch sewer system connects to a recently installed 27-inch line at Wolfe/Pruneridge, which is operating at capacity. The newer 27-inch sewer main ultimately discharges to the San Jose/Santa Clara Water Pollution Control Plant, via the City of Santa Clara system.

It is anticipated that upgrades may be required to the existing lines in North Wolfe Road to accommodate the projected flows from implementation of the Specific Plan. The Specific Plan EIR indicates that the existing 12- and 15-inch sewer mains in Wolfe Road would have to either be replaced with new mains of an adequate size as determined by the Cupertino Sanitary District, or an 18-21 inch parallel pipe needs to be installed.

The Specific Plan EIR also anticipates the replacement of the existing 27-inch sewer main in Wolfe Road and Homestead Road with new mains of an adequate size as determined by the Cupertino Sanitary District.

The estimated peak net sewage generation for the project is 2.38 mgd. If additional hydraulic modeling is performed on the CuSD system and the model indicates that the 13.8 mgd contractual limit through the City of Santa Clara would be surpassed by the project, future development would not be permitted to obtain building permits for any structures or units that result in the contractual limit being exceeded until additional capacity is available through the City of Santa Clara's sewer system; improvements are made to the CuSD sewer system that reduce the peak wet weather flows that enter the City of Santa Clara system; improvements are made on the project site that ensure the contractual limit is not exceed; or the completion of any combination of these approaches that adequately addresses potential capacity issues.

There is also a sewer main located in the current Perimeter Road on the western edge of the Plan Area that collects sewage from the North Blaney residential community to the west and flows to the 15-inch North Wolfe Road sewer main as described above.

The existing sewer main on the west side of the property, and the main that crosses through the property from North Wolfe

Road that discharges through the northern portion of the Plan Area may be rerouted to avoid future building pads. If the main is relocated, a new public utility easement will be required.

The Specific Plan Wastewater Plan is shown in Figure 5.3: Conceptual Wastewater Plan, including both new and upgraded sewer public sewer lines.

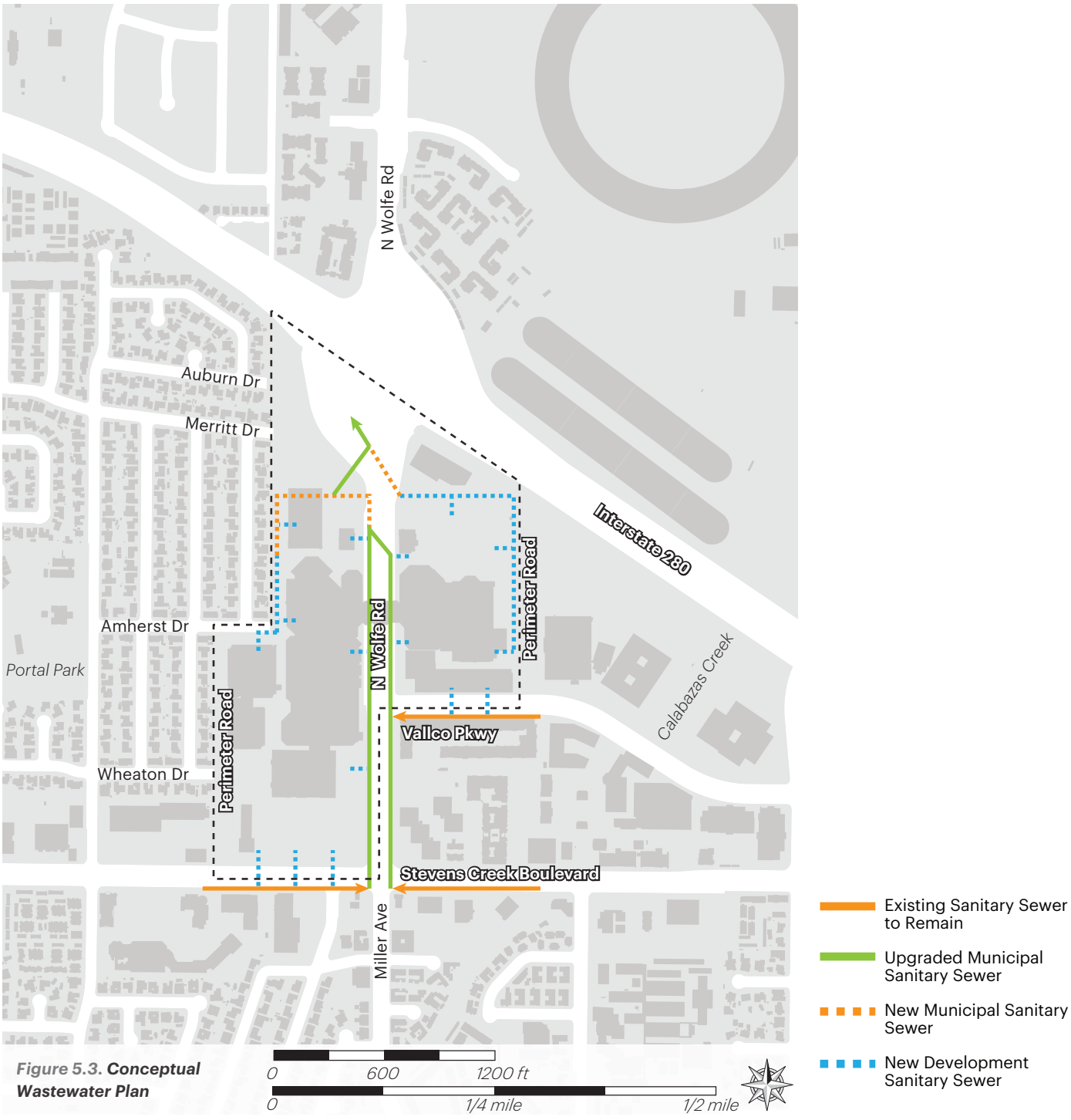

Figure 5.3. Conceptual Wastewater Plan

5.5 Water Supply and Demand

California Water Service Company (CalWater) is the municipal water utilities provider for the Los Altos Suburban (LAS) District of the City Cupertino where the Plan Area is located. Water supply for the LAS District is a combination of groundwater from wells in the District and treated water purchased from the Santa Clara Valley Water District (SCVWD). Approximately 32 percent of supply comes from groundwater production and 68 percent from SCVWD.

In a given year, the amount of groundwater production versus purchased treated water varies depending on the supply available from SCVWD. SCVWD imports surface water to its service area from the South Bay Aqueduct of the State Water Project (SWP), the San Felipe Division of the federal Central Valley Project (CVP) and the San Francisco Public Utilities Commission's (SFPUC) Regional Water System. However, Cal Water only receives SCVWD water from the SWP and CVP sources.

CalWater has a contract with SCVWD until 2035 to purchase treated surface water and convey it to the LAS District. The SCVWD "contract" water is delivered through four connections within its transmission system. These connections are called the Vallco, Granger, Farndon, and Covington turnouts. Each of these turnouts is equipped with pressure and flow control devices that provide a hydraulic transition between their respective delivery main and the LAS District distribution system.

The LAS District owns and operates a water system that includes 295 miles of pipeline, 65 booster pumps, and 46 storage tanks. Cal Water proactively maintains and upgrades its facilities to ensure a reliable, high-quality water supply.

As described in the Vallco Special Area Specific Plan EIR ('Specific Plan EIR'), Plan Area development would result in a maximum net increase in water demand of 249 AFY compared to existing 2015 water demand on-site. Based on projected supply, LAS District is anticipated to meet projected demand during normal, single dry, and multiple dry year conditions.

The future development is encouraged to incorporate on-site water recycling including rainwater harvesting and gray water use for facilities that can accommodate on-site water recycling such as landscaping, or re-use in toilets.

5.6 Dry Utilities

Central Plant

A central plant or distributed plants may be constructed within the Plan Area to centralize heating and cooling for the project. Any externally visible mechanical equipment would be screened from public views by preferably integrating such equipment into proposed buildings or placing them underground or, less preferably, by screening them with screens that are at least as tall as the equipment it is screening.

In addition, mechanical equipment shall be required to incorporate noise reduction measures in accordance with the Cupertino Municipal Code and the Specific Plan's MMRP to reduce impacts on surrounding uses.

Energy Infrastructure: Gas and Electric Lines and Gasoline

The operational energy demand at build out for the Plan Area is estimated to be approximately 72 net gigawatt-hours (GWh) of electricity per year, 75 net billion British thermal units (Btu) of natural gas per year, and 11,900 gallons of gasoline per year compared to existing conditions. Public gas and electric facilities are owned and operated by Pacific Gas and Electric. Existing (PG&E) gas and high voltage electric lines are located in North Wolfe Road, running from north to south.

As analyzed in the Specific Plan EIR, proposed development will not use energy or fuel in a wasteful manner. Therefore, there are no anticipated changes to the location of these existing facilities, and it is believed that existing facilities will be adequate to meet future demand. However, PG&E will need to review proposed project loads and determine if upgrades to the system are necessary to serve the project in conjunction with subsequent development applications in the Plan Area.

There is also a public joint trench along the southwest section of the existing Perimeter Road, including natural gas, communications and electrical that may need to be relocated out of future building pads.

Even though the existing and/or upgraded PG&E infrastructure will be utilized to provide electricity to the project, electricity for future development shall be provided by Silicon Valley Clean Energy (SVCE) or another provider that sources electricity from 100 percent carbon free sources in order to comply with the regional Climate Action Plan consistency. Future developers are required to indicate how compliance with this requirement will be achieved by project users.

Communication Lines

Existing public communication lines run underground on the east side of North Wolfe Road from north to south. There are no proposed changes to the location of these facilities. Upgrades to these facilities will be necessary to support the users of the site, and the communication lines may need to be rerouted to ensure availability of the lines during construction or to avoid other required utilities based on final approved construction plans within the Plan Area.

5.7 Solid Waste and Recycling

Recology South Bay is the exclusive franchise company that currently provides curbside recycling, garbage, and yard waste services to the City of Cupertino. It would continue to provide solid waste and recycling service to the Plan Area, subject to change by the City of Cupertino per state and local requirements and/or agreements.

The City shall continue its current recycling ordinances and zero waste policies in an effort to further increase its diversion rate and lower its per capita disposal rate. The City will impose conditions of approval on future development in the Plan Area to implement these policies, and it may require solid waste technologies such as pneumatic collection, advanced treatment such as anaerobic digestion to help reduce the amount of solid waste being exported from the Plan Area, or other implementation mechanisms.

In addition, development within the Plan Area is subject to Chapter 16.72 of the Cupertino Municipal Code regarding recycling and diversion of waste during construction and demolition to reduce the total amount of waste that will be landfilled.

5.8 Mobility and Transportation

Build out of the Plan Area will require new internal streets, including enhanced bicycle and pedestrian facilities. New development shall be required to improve adjacent portions of existing thoroughfares, including Stevens Creek Boulevard, Vallco Parkway, and North Wolfe Road. The proposed street network, along with right-of-way improvement requirements, is illustrated and discussed in Chapter Six: Development Standards.

In addition to improvements within the Plan Area, the development projects authorized by this Specific Plan are considered to be projects of regional significance. Therefore, there are several improvements that are required to maintain the transportation infrastructure in the vicinity of the project site in compliance with City standards.

In addition, the Specific Plan requires further transportation management measures to reduce trip generation within the Plan Area. These include:

1. Fair-share contribution towards the City's cost of the I-280/ North Wolfe Road interchange project.
2. Implementation of the conditions of approval, standard permit conditions, and mitigations identified in the certified Specific Plan EIR.