

GOOGLE
DOWNTOWN WEST
DISTRICT INFRASTRUCTURE PLAN

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1. INTRODUCTION / PROJECT DESCRIPTION

1.1. Purpose

This District Infrastructure Plan is provided as an exhibit to the Planning Application submitted by Google LLC (hereafter “project applicant”) to the City of San José. The District Infrastructure Plan defines the infrastructure improvements (also referred to as horizontal development) proposed to be constructed as part of the Downtown West Mixed-Use Plan (hereafter “proposed project”). Ultimately, the District Infrastructure Plan, in tandem with the Development Agreement and Downtown West Design Guidelines and Standards, would set forth City and project applicant responsibilities relating to the design, construction, ownership, and operation & maintenance of horizontal development on the site.

1.2. Project Description

The Downtown West Mixed-Use Plan encompasses approximately 85 acres of land owned by the project applicant, the City, PG&E, VTA and Caltrain, which is proposed to be redeveloped. The project would entail demolition of existing buildings along with construction in phases of up to 7.3 million gross square feet (gsf) of office space; up to 500,000 gsf of active uses (which would include retail, restaurant, arts, cultural, institutional, educational, non-profit and small-format office uses); hotel uses with up to 300 guest rooms; up to 800 rooms of limited-term corporate accommodations; a 100,000 gsf event facility that could host various events and assemblies; up to 5,900 residential dwelling units in buildings, some with active use spaces as discussed above at the ground level; an open space program within an aggregate of approximately 15 acres across the site; and on-site parking.

The proposed project would include public realm improvements aimed at leveraging regional transit connectivity in the immediate vicinity (BART, Caltrain, VTA, and potentially future high-speed rail service), enhancing local pedestrian circulation (via additional connectivity, trail extensions and enhancements), and improving bicycle linkages to downtown for residents and visitors.

To support the project, significant investment into public infrastructure would be made including streets and utility systems. The project proposes to extend portions of certain streets and remove sections of other streets to improve circulation through the project area. Most notably, the proposed project would extend Cahill to enhance north-south connectivity throughout the length of the project site. Public utility improvements will include new utilities within new streets, relocations within reconstructed streets, and upgrades to aging or undersized utility systems. Public utility improvements would include domestic and fire water, storm drain and stormwater management, and sanitary sewer systems. Franchise utility improvements would include electrical, natural gas, and communications systems including the undergrounding of much of the overhead power lines within the project area.

In addition to the public and franchise utilities, significant private infrastructure improvements would be built to support the project’s office, residential, and retail development. The private infrastructure systems have been conceptualized to be sustainable at their core while meeting a number of project objectives as outlined in the Infrastructure Plan Overview below. These private infrastructure improvements include thermal heating and cooling system, electrical power, wastewater and solid waste collection, recycled water, and communications.

Additional off site improvements for the project will include reconstruction of the existing West San Fernando Street bridge to significantly reduce overbank flooding during a 100-year event, as further described in Section 11.1.3.

1.3. Infrastructure Plan Overview

The proposed project would bring substantial development to the Diridon Station area. The approach builds on the strengths of the existing infrastructure while closing gaps to prepare a platform for a high-quality development as articulated in the December 2018 Memorandum of Understanding between the City of San José and the project applicant. The existing street grid would largely be maintained and enhanced through circulation improvements. The open space systems would take cues from the local ecology and would be improved and expanded, enhancing connectivity with the Diridon Station area as well as the city as a whole. In most cases, parking provided by surface lots in the existing condition would be replaced with underground or podium parking garages thereby decreasing the parking footprint and increasing opportunities to reduce impervious spaces and improve the public realm. Municipal utility systems would be maintained and improved as necessary to support the project development. This infrastructure plan aligns with the project objectives as described in the project EIR. Through the implementation of district-wide infrastructure and systems in combination with a high-density mix of land uses, the project aims to achieve outstanding environmental performance through resource efficiency across water, energy, and waste flows.

This Infrastructure Plan builds upon previous work done by the City of San José during the Diridon Station Area Plan (DSAP) planning process. Horizontal infrastructure improvements proposed in the DSAP included work both within and the DSAP EIR identified impacts outside of the DSAP project boundary. Substantial horizontal improvements identified in the Diridon Station Area Analysis Final Report dated January 31, 2017 included:

- Extension and realignment of Autumn Street,
- Storm drain improvements along Stockton Avenue and San Carlos Street,
- Sanitary sewer upsizing along Autumn Street,
- Extension of reclaimed water into the Diridon Station Area,
- Undergrounding of overhead distribution utilities.

Based on project-specific analyses conducted, proposed upgrades to the existing utilities may differ from the proposed DSAP improvements. Additional detail can be found in sections 8, 9 and 10.

1.4. District Systems and Utilities

The existing project area is currently served by several public utilities including domestic (potable) water (DW), sanitary sewer (SS), storm drain (SD), PG&E electrical (ELEC), natural gas, and telecommunications (COMM). The project would require connections to these public systems, may require upgrades to some of the public utilities, and may warrant construction of new thermal, electric, sanitary sewer, recycled water, and potable water district systems. It should be noted that full electrification of the site is committed over the use of natural gas with the exception of natural gas for limited cooking applications in up to 50,000 SF of retail only.

The project proposes a district-systems approach to deliver resources via on site utility systems—such as energy, wastewater, and solid waste flows. A “district” system essentially entails creating an onsite utility network separate from, though sometimes linked to, the citywide or regional networks. District systems are most commonly used for building space heating and cooling, but may also be employed to generate electricity, collect and treat wastewater and stormwater, and the like. A small mutual water system serving a rural area is another common example of a district system. District systems have additional benefits for the project. For instance, district thermal systems deliver heating and cooling resources more efficiently as compared to individual and building-specific systems. District water services enable local management

of the project's resource demands, thereby reducing burdens on existing municipal systems while increasing project resiliency. Business as usual utility connections will be provided to the development for potable and fire water, with joint trench services provided and maintained by service providers. Additionally, in some cases buildings within the project area may not connect to the proposed district systems and instead connect to existing utilities; these limitations are noted in the private utilities section within this document.

The district-systems would serve the project area via a utility corridor ("utilidor") which would be constructed within private parcels to the maximum extent feasible and will cross public right-of-way at some locations to provide system distribution continuity. The utilidor may be a building-integrated structure as further described in the following sections. Business as usual utility systems will be run within the right-of-way and joint trench as normal. The scope and extent of the services within the right-of-way is described in further details within the plan.

Integral to the district systems approach would be the construction and operation of central utility plants (CUPs) in up to two infrastructure zones on the project site. The approximately 130,000 total square-foot CUPs would house mechanical, thermal, power, water reuse, and supporting equipment to service the proposed project area. An option exists to co-locate the automated waste collection system (AWCS) terminals with the CUPs. Each utility is further described in the following sections.

The CUPs would allow for consolidation of services, centrally addressing resource demands, reducing the burden on existing municipal systems, and increasing the site's resilience. Moreover, consolidation of utility services within the CUPs would result in greater spatial efficiency, user density, and productivity by eliminating areas within individual buildings dedicated to these facilities and services. Managing energy and infrastructure services across the site at a district wide scale is anticipated to yield further operational and spatial efficiencies. For example, consolidation of solid waste collection through automated waste collection at a consolidated terminal could reduce the area required in each building for waste collection and storage. Furthermore, by consolidating waste collection to the AWCS terminal, truck traffic would be less distributed along local streets.

Google is proposing to connect District Systems to the majority of buildings within the project's boundaries. However due to phasing and property ownership the scope of connections may be restricted in areas of the plan. A summary of the extent of service and variants for each District System is listed below.

Wastewater / Recycled Water. The project is maintaining two distinct alternatives for waste and recycled water servicing, outlined below.

The District Systems alternative consists of an on-site wastewater treatment plant(s) which will collect wastewater from the development for treatment, producing recycled water for beneficial reuse internally within the building and to parks across the plan area. A private wastewater collection system and recycled water distribution network will be installed to facilitate operations.

A City alternative is also being considered, which will see traditional gravity wastewater connections from individual buildings connect to the municipal wastewater system. In this alternative the project will connect to the SJWC recycled water network and extend to individual buildings/public realm within the project's boundaries.

Microgrid. The project is proposing to service the project with electricity from a microgrid, distributing 12.47kV/21kV electrical networks across the plan to service the project. The Microgrid to the fullest extent will service all properties within the plan area, with potential limitations on servicing some residential buildings, existing assets and first phase buildings.

Thermal Heating and Cooling. The project is proposing to service the development with an all electric thermal heating and cooling District System, distributing energy via a thermal network contained within the utilidor. The production of heating and cooling energy will be via the central utility plants (CUPs). The District Heating and Cooling systems to the fullest extent will service all properties within the plan area, with potential limitations on servicing some residential buildings, existing assets and first phase buildings.

Automatic Waste Collection System (AWCS). The project is considering the option of an alternative means of collecting solid waste from the project via an AWCS. This system will collect the majority of waste from potentially all buildings within the plan area. This is an alternative system to a traditional building by building approach to waste collections and management.

1.4.1. Temporary Phasing of Equipment

The project phasing strategy may require temporary equipment (including heating and cooling equipment) to some buildings while the CUPs are constructed. Temporary equipment will be required for parcels where entitlements and construction proceed ahead of those for the CUP parcel. This may be due to existing entitlements enabling early start on some parcels, the additional required regulatory approvals for the combined CUP parcel, or the need to complete civil infrastructure from the CUP through multiple parcels, which may have different schedules than the CUP or buildings at the end of the network. Provision for temporary equipment to be removed when the CUPs are commissioned will be made.

1.5. Mapping & Permitted Encroachments

The applicant will apply for one or more vesting tentative maps or tentative maps, each of which may permit phased final maps as otherwise authorized by the City of San José Municipal Code and the Subdivision Map Act (Cal. Gov. Code §§ 66410 et seq.). Infrastructure proposed to service the various subdivisions as described in final maps will correspond with this Infrastructure Plan as it may be amended from time to time and related provisions of the proposed project's General Development Plan and Planned Development Permit. As otherwise described herein, improvements required as a condition of approval for any vesting tentative map or tentative map will correspond with this Infrastructure Plan and related provisions of the proposed project's General Development Plan and Planned Development Permit. It is anticipated that any required street or easement vacations will be completed prior to approval of a final subdivision map encompassing the area proposed for vacation. Dedications of public improvements will conform to the requirements of the Municipal Code and the Subdivision Map Act. The applicant will obtain City, State or other property-owner approval (including, e.g., City Encroachment Agreements) for any encroachments contemplated herein prior to effectuating such encroachment.

1.6. Project Datum & Coordinate System

All elevations referred to herein are based on the North American Vertical Datum of 1988 (NAVD88).

The Downtown West project is based on the ground coordinate system. Per the topographic survey dated August 2019, the calculated bearing of south 02° 43' 35" west taken between the record position of GPS control point 2218 and GPS control point 1049, as shown on that certain record of survey filed for record on June 21, 1996, in book 677 of maps at page 54, official records of Santa Clara County was taken as the basis for all bearings shown hereon.

1.7. Project Phasing

If approved, construction of the project's proposed buildings, street network changes, and infrastructure would occur in three primary phases (each of which may be subdivided pursuant to multiple final or parcel maps). Construction would begin in 2021 and is conservatively assumed to continue through 2031. The duration of each phase of construction would vary, with the end of one phase and the start of the subsequent phase sometimes overlapping one another. Actual phased implementation could be constrained by external factors such as market forces and construction staging for the BART Downtown extension, and thus could extend over a longer period. Each phase would include development parcel(s) and associated infrastructure to serve the incremental build-out of the project.

The project would phase demolition on the principle of adjacency and as needed to facilitate a specific proposed development phase. It is anticipated that certain infrastructure preparation such as abatement, demolition, environmental management, grading, geotechnical improvements, and utility construction may be required or desired at an earlier stage of development and will be addressed in future street improvement, site and building permit packages as applicable.

2. SUSTAINABILITY

The project applicant is seeking to create a sustainable place through integrated design. The project aims to achieve this goal through a number of sitewide and building specific sustainability strategies. These may include district systems, green roofs, building-integrated photovoltaics, dense, walkable development with mixed income housing, and measures to reduce vehicular traffic and emphasize transit, biking, and walking. Through certification under California Assembly Bill 900 (AB 900), the project has committed that the master plan will be designed in pursuit of LEED for Neighborhood Development Gold Certification, with vertical office buildings designed to meet LEED Gold Certification.

The project applicant's commitments to the project's contribution to regional and global greenhouse gas (GHG) emissions are provided in the Environmental Leadership Development Project (AB 900) application. As part of the commitments through the AB 900 process, the project would offset its emissions in part through a combination of design measures intended to reduce energy consumption, water use and vehicular movement, which in turn would reduce GHG emissions. GHG emissions offsets would be purchased for remaining emissions not reduced through design measures. These design measures and the purchase of offsets are discussed in the AB 900 application.

District systems form a key strategy in reducing emissions and resource use. District systems consolidate infrastructure such as heating and cooling generation, electricity generation and distribution, and wastewater treatment and water reuse at a neighborhood scale. By bringing together these services district systems can take advantage of efficiencies across building types and resource systems. Strategies that leverage efficiency may include heat exchange with wastewater treatment and cooling generation, rejection and absorption of heat via a ground loop, and thermal exchange between commercial and residential buildings. Consolidation enables greater energy and water efficiency by enabling the use of

technologies that would otherwise not be cost-effective at the building or municipal scale. While district systems are intended for use across the project, limitations on extent may be required due to project phasing or physical considerations; final determination on the extent of systems will be made prior to permitting of parcels and infrastructure. Subsequent sections in this narrative outline the potential extent of each system.

A more detailed explanation of the sustainability features of the proposal can be found in the Sustainability Chapter of the Downtown West Design Standards & Guidelines.

3. ENVIRONMENTAL REMEDIATION

Portions of the project site have a long history of development, including industrial uses that may have resulted in subsurface contamination of soil and/or groundwater.

There may also be existing uses that are potential or actual sources of contamination. As part of its development process, the project would summarize known hazardous materials conditions on and adjacent to the project site and would address the potential for hazardous materials impacts to result from implementation of the proposed project. All remediation, demolition and excavation work would comply with codes and regulations.

4. DEMOLITION, DECONSTRUCTION AND PRESERVATION OF RESOURCES

Soils disturbance, excavation and earthmoving are anticipated in order to implement utilities and district systems on the site. Project construction activities may result in potential environmental impacts associated with hazardous soils; historical resources, potential archeological resources which could also be considered tribal cultural resources; ground-water inundation and dewatering; seismic/structural design considerations.

Additionally, some existing utilities may require demolition, upgrading and/or relocation to accommodate the proposed street grid, parcel configuration and building design. Refer to Sections 8 - 10 of this document for additional detail on rerouting for individual utilities. All demolition work would comply with applicable codes and regulations.

4.1. Archeological Resources

Previous studies completed for the Delmas Avenue Mixed-Use EIR, the Diridon Station Area Plan EIR, and the San José Ballpark EIR indicate that there is a high potential to uncover both prehistoric (Native American) and historical (Post-European) archaeological resources during ground disturbing activities. Ground disturbance will be closely monitored to ensure against damage. Tribal Cultural Resources impacts would be assessed in conjunction with the culturally affiliated Native American tribes and the City during consultation according to the requirements of PRC Section 21080.3.1 and California Government Code 65352.3.

4.2. Permitting

A building demolition permit will be required to any full or partial demolition of a building with a floor area greater than 120 square feet, removal of detached accessory structures with a floor area greater than 120 square feet, or gutting of a commercial tenant space if done separate from securing a permit to make tenant improvements. Future demolition permits will need to include an application for Public Works Permit form, a certificate of insurance, a job number from the Bay Area Air Quality Management District (BAAQMD), a PCBs screening assessment form, and construction drawings including a survey and demolition plan. Additional approval will not be required by City Council. For greater detail on the permit requirements, refer to the City's *Building Demolition Permit Requirements* dated 01/22/2020.

5. GEOTECHNICAL CONDITIONS

Localized geotechnical assessments were previously completed as part of other development projects in the area, and further detailed analysis will be completed to support the project's development in conjunction with the issuance of street improvement, site or building permits as applicable. A general description of the geologic setting for the area is provided in the Diridon Station Area Plan Existing Conditions Report and included herein for reference. "The project site is located in northern Santa Clara County, an alluvial valley between the Mt. Hamilton Range (east) and Santa Cruz Mountains (west). The area is underlain by Quaternary-aged unconsolidated, moderately compressible, alluvial soils consisting of soft to stiff silts, clays, and loose to dense sands. The area is relatively flat with an average elevation of approximately 100 feet above mean sea level. Soils are of the Yolo association and have moderate to high shrink/swell potential. The entire Bay Area is located within the San Andreas Fault Zone, a complex of active faults where moderate to strong earthquakes have been generated. For this reason, the Bay Area is classified as Zone 4, the highest risk category for seismic risk. Regional active faults include the San Andreas, Hayward, and Calaveras; however, no faults cross the project area. Much of the Santa Clara Valley, including the project area, is located within a Liquefaction Hazard Zone (Field Paoli, Diridon Area Station Plan Existing Conditions Report, City of San José, 2019).

6. STREET AND TRANSPORTATION

6.1. Changes to the Street Network

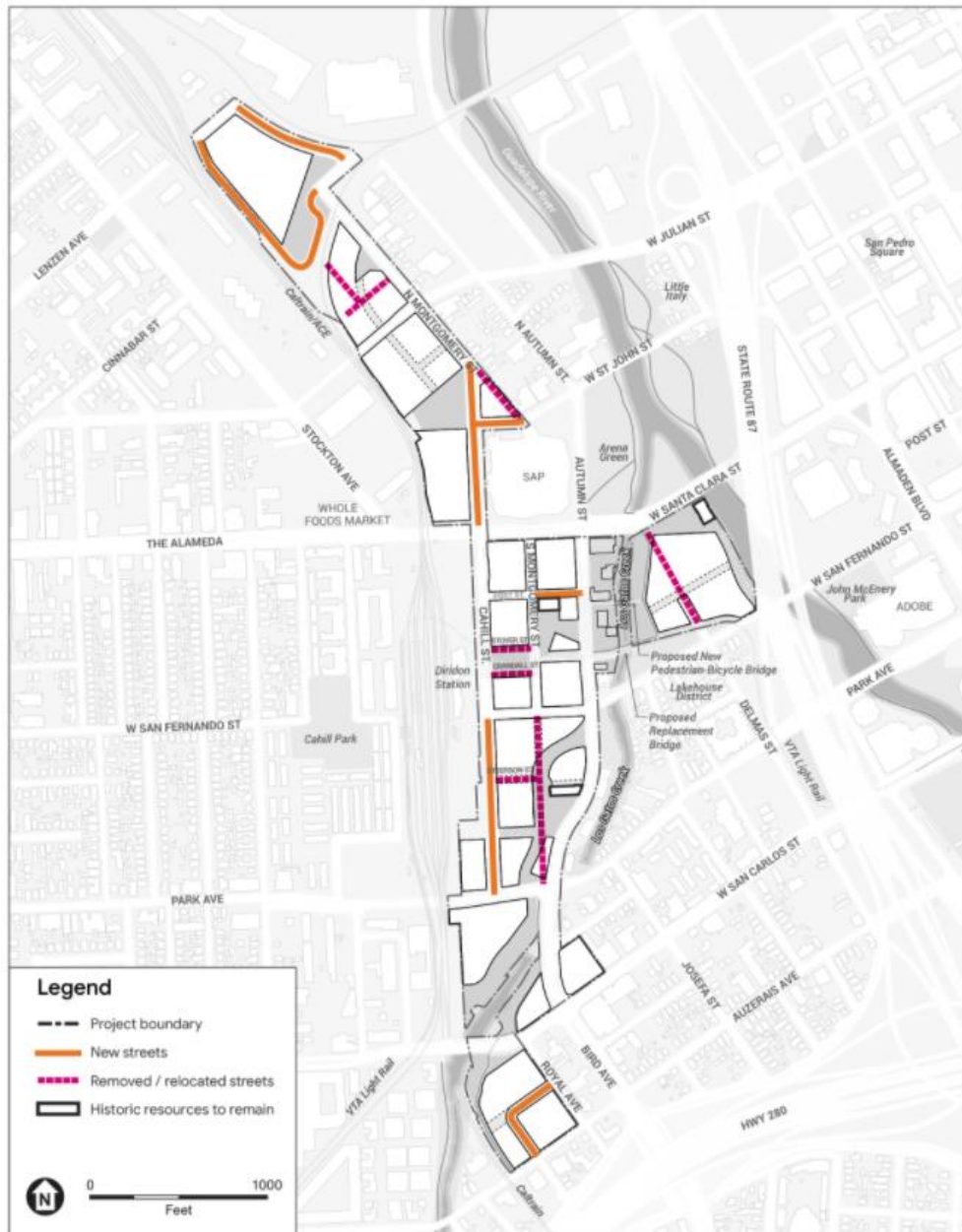
The project proposes to extend portions of certain streets across the project site and remove sections of other streets (refer to Figure 6.1). Notably, the proposed project would extend Cahill Street from its current terminus at West Santa Clara Street to North Montgomery Street in the north and from West San Fernando Street to Park Avenue in the south to enhance north-south connectivity throughout the length of the project site.

North of the SAP Center, West St. John Street would be extended to connect with the extended Cahill Street. North of the Union Pacific Railroad tracks, circulation would be reconfigured with a perimeter street framing new development. The project would create a new block-long east-west extension of the roadway to the south of West Santa Clara Street between South Montgomery and Autumn Street, a new east-west private street between Cahill Street and Autumn Street between San Fernando and Park Avenue, and a new L-shaped street linking Royal Avenue and Auzerais Street through the project site.

The proposed project would remove a number of street segments within the project site: Cinnabar Street west of North Montgomery Street, North Montgomery Street between West St. John and Cahill Streets,

Delmas Avenue between West Santa Clara and West San Fernando Streets, South Montgomery Street between West San Fernando Street and Park Avenue, and Otterson Street west of South Montgomery Street. The southern portion of the segment of Delmas Avenue to be removed as a through street would be reconfigured as a driveway from San West Fernando Street to provide parking access and egress to and from the proposed development on the portion of the project site between Los Gatos Creek and the Guadalupe River. The project also proposes to remove Crandall and Stover Streets in front of Diridon Station and expand the existing open space at that location.

Figure 6.1: [Preliminary] Proposed Street Network Changes



SOURCES: Google LLC and SITELAB urban studio, 2020

Downtown West Mixed-Use Plan

6.2. Street Improvements

Refer to the Mobility Chapter of the Downtown West Design Standards & Guidelines for additional detail on proposed street layouts. Street designs proposed by the applicant as part of improvement plan submittals will be deemed acceptable so long as they substantially comply with street sections for appropriate typologies as shown on DWDSG and/or stating that the DWDSG is incorporated by reference.

The project will examine the existing traffic conditions in the immediate vicinity of the project site. A transportation analysis (TA) will be prepared for the proposed project as part of the EIR in order to evaluate the project's potential impacts related to VMT and other significance criteria. A separate Local Transportation Analysis (LTA) will identify the adverse effects on transportation, access, circulation, and related safety elements.

Street designs proposed by the applicant as part of improvement plan submittals will be deemed acceptable so long as they substantially comply with street sections for appropriate typologies as shown on DWDSG and/or stating that the DWDSG is incorporated by reference.

6.3. Logistics

The project is proposing the option of a hybridized approach for managing the everyday delivery of goods. The principal logistical components of this approach include: a delivery consolidation center (beyond the project boundary), up to two delivery warehouse-like "mini-hubs," flex-curb space and loading docks supporting individual buildings. Collectively, these components aim to reduce the size and quantity of trucks entering the district thereby increasing the quality of the pedestrian experience.

For security and efficiency the applicant's delivery operations will utilize the off-site consolidation center and the mini-hub warehouses. From the mini-hubs to end-delivery point, the applicant may utilize a combination of last-mile equipment including trucks, electrically-powered vehicles and hand-driven equipment. The mini-hubs and their associated routes to the buildings may be located on the surface, underground or both.

The applicant's supply chain is managed and operated independent of other site tenants. All deliveries to third-party (non-applicant) site tenants will be able to utilize a combination of nearby flex-curb zones and assigned loading dock of their respective building.

7. OPEN SPACE AND PARKS

The proposed project includes 15 acres of a variety of open spaces, ranging from urban plazas to native-planted creekside, riparian corridors that would accommodate active and passive recreational opportunities. Open space programming would vary based on placemaking objectives and adjacent land uses responding to and prioritizing the ecological typology of the open space. Taking cues from local ecology, the more intensively vegetated, open spaces would be aimed at enhancing connectivity between Downtown West and the city as a whole and would include a diversity of spaces that could be activated for various uses.

The open spaces located throughout the project define the four distinct zones - the Southend, Meander, Urban Core and Northend - within the project boundaries, each with their own programming and distinct character. The Southend open spaces serve as immersive natural play and learning, while also offering key

moments to make district infrastructure and natural systems accessible and visible to visitors through an Eco Center and Pavilion. The Meander would offer a mix of urban and green spaces, with immersive interactive art, water features, and social gathering spaces along an active, green urban spine, acting as a transition between ecological southern creek areas and the urban core. The project’s core, central open spaces would serve as the center for civic identity and learning with programmable green and hardscapes spaces between South Autumn and Cahill Streets. Open space along the Los Gatos Creek core is among the most ecologically sensitive on the site. This open space provides creek setbacks and protection for the creek bank and riparian canopy in an effort to support wildlife habitat and restore native plantings, enhancing creek views while limiting human disturbance. Separate from the Los Gatos Creek core, but proximate would be a community plaza along West Santa Clara Street, serving as a transition from creek confluence to urban development, creating a civic gateway from the project site to downtown San José. Open space at the Northend of the project would include flexible event and entertainment space as well as a space for informal recreational fields and multi-use courts with outdoor makerspace.

Los Gatos Creek is the key naturally occurring hydrological feature on the project site. The project would include additional plantings of native riparian vegetation along Los Gatos Creek to buffer the creek from adjacent uses and promote native habitat and biodiversity. Appropriate grading techniques would be used for parcels adjacent to the creek in order to account for existing hydrological conditions, prevent erosion and protect water quality in Los Gatos Creek. In addition, new buildings adjacent to Los Gatos Creek and the Guadalupe River would be set back approximately 50 feet and 30 feet respectively, from the edge of the riparian corridor. A new multi-use (pedestrian / bicycle) pathway (trail) would meander along the creek within or adjacent to the riparian corridor. Additionally, the project proposes a flexible pedestrian / bicycle bridge spanning Los Gatos Creek, between the West San Fernando / VTA bridge and West Santa Clara Street. This bridge would connect S. Autumn Street and Block E.

Refer to the Open Space Chapter of the Downtown West Design Standards & Guidelines for additional detail on proposed design strategies.

8. PUBLIC UTILITIES

8.1. POTABLE WATER SYSTEM

8.1.1. Existing Distribution System

The project area is served by San José Water Company (SJWC), an investor-owned public utility serving the greater San José metropolitan area. The water supply for this area of San José is primarily sourced from the Santa Clara groundwater basin. Water mains in adjacent streets vary from 4” to 16” in diameter and may be over 100 years old in some streets. Table 8.1 lists the backbone water lines serving the project area. Backbone infrastructure lines are based on the Diridon Station Area Infrastructure Analysis, dated January 31, 2017.

Table 8.1: Backbone Water Infrastructure

Water Line	Pipe Size
West Santa Clara Street	12” - 16”
Delmas Avenue	12” & 6” parallel lines
South Autumn Street	16”
Park Avenue	12” - 12.75”

8.1.2. Proposed Distribution System

Approximately 3,700 linear feet of new water mains will be needed to serve both building demands and fire hydrants within new proposed streets as shown in Appendix A Sheet C4.1. The proposed development will connect to the SJWC system at each building to serve both domestic and fire water needs. Some upgrades to existing water lines may also be required to accommodate increased fire demands including line size upgrades and the addition of new fire hydrants. Upgrades shown in Sheet C4.1 represent the upgrades which intersect the project site as analyzed in the 2017 Diridon Station Area Infrastructure Utility Analysis. [These upgrades will be updated after additional modeling is completed by SJWC.]

The project proposes to remove two segments of the existing water line aligning with the removal of portions of South Montgomery Street and North Montgomery Street. Additionally, the project proposes to remove the existing water line running through the Crandall Avenue public utility easement (PUE) between Cahill and South Montgomery. Work may be completed by SJWC and may require the lines to either be demolished or abandoned in place. The removal of these existing water line segments will be phased with the construction of new water lines to ensure no service interruptions.

Booster pumps may be needed at each building in order to supply enough pressure for either potable water or fire water service. See Section 8.1.4 below for additional detail on the proposed fire water demands.

8.1.3. Project Potable Demands

Projected potable water demands are provided in Table 8.2 as an engineering estimate only. This anticipated water consumption for the proposed development has been developed based on similar, high density urban developments as well as utilizing demand factors required by CalGreen and LEED. As a part of the environmental review process, a Water Supply Assessment (WSA) is required to be completed by SJWC and then approved by the SJWC Board. SJWC issued the WSA for the project in January 2020. The applicant has reviewed the demand factors used to estimate the project's water demand. Proposed factors include reduced demand factors for office, residential, hotel/corporate accommodation, retail, event center, and logistics/warehouse land uses, and an increased demand factor for restaurant use, which would decrease the overall water demand for the project. Therefore, the anticipated water use is less than that reflected in the WSA.

SJWC has been engaged to provide a development specific water capacity modeling and will provide details of the model once its complete.

Potable demands do not account for irrigation, toilet flushing, or mechanical processes (such as cooling tower make-up).

Table 8.2: Average potable water demands

Program	Average Daily Potable Demand (gal/d)	Average Annual Potable Demand (MGY)
Office	227,200	83
Residential	263,100	96
Retail	2,000	0.7
Restaurant	195,600	71.4
Hotel	14,000	5.1
Event space	2,000	0.7
District Systems	1,000	0.4
Logistics/Warehouse	1,000	0.4
Total	705,900	258

8.1.4. Project Fire Demands

Future coordination is required with the Fire Marshall to refine individual building fire demands based on requirements of the San José Fire Code. Additional distribution upgrades may be required to ensure that hydrant and building fire flow demands are met. [The project is in the process of coordinating and updating the fire flow model with SJWC.]

8.1.5. Project Supply

The project will continue to be supplied by the SJWC via water mains within the public rights of way.

8.1.6. Water System Phasing

It is anticipated that SJWC will design and install the new water mains for the project area. The project team met with SJWC to review the proposed development and noted that their involvement will begin during the design phase. The project team will work closely with SJWC staff during the design phase to determine timing of work effort and ensure coordinated design. Domestic and fire water laterals and required pumps and storage within buildings would be constructed on a parcel-by-parcel basis. Temporary water connections may be constructed and maintained by the project applicant as necessary to maintain potable water and fire protection services to existing buildings and buildings under construction.

8.1.7. Permitting

Additional detail in fire protection strategies and water connections will be addressed in individual building permits.

8.1.8. Ownership and Maintenance

The existing potable water system in the project area is owned and maintained by SJWC. All new mains are proposed to similarly be owned and maintained by SJWC. It is expected that SJWC would be responsible for maintenance of water system improvements installed by the project applicant upon acceptance.

8.2. SANITARY SEWER SYSTEM

8.2.1. Existing Gravity Collection System

The project area is currently served by the City’s existing sanitary sewer network which flows north to the San José-Santa Clara Regional Wastewater Facility (SJ-SC RWF). There are four sewersheds which currently serve the Diridon area: the Sunol Line (West Julian Street), a main in St. John Street, the Lincoln Line (Santa Clara Street), and a main in West San Fernando Street. Chapter 8 of the Diridon Station Area Infrastructure Analysis dated January 31, 2017, highlights that the Lincoln Line is flowing roughly half-full during dry weather flows, while the Sunol Line is flowing greater than two-thirds full in dry conditions and may surcharge during wet weather conditions. As per the 2017 Infrastructure Analysis, it is expected that between the Sunol and Lincoln lines, an additional 2-3 million gallons per day (MGD) of capacity is available.

Referring to the City of San José published GIS data, there are five existing sanitary sewer siphons that carry wastewater from the site to the San José-Santa Clara Regional Wastewater Facility (SJ-SC RWF), as outlined in Table 8.3. These siphons transfer wastewater from the west to the east side of Guadalupe River, Guadalupe Creek, and Los Gatos Creek. Pipe materials include ductile iron (DI), cast iron (CI), and cast-in-place (CIP). Twin siphons are assumed to have two pipes running adjacent to one another for redundancy. There is at least one structure at the beginning and end of each siphon to tie it back into the sewer main.

Table 8.3: Siphon locations from north to south, per City of San José GIS data.

Street Crossing	Stream Crossing	Size	Siphon Type	GIS Object ID
West Julian Street	Guadalupe River	24”	Twin Siphon	49518
West St John Street	Guadalupe River	30”	Twin Siphon	49523
West Santa Clara Street	Los Gatos Creek	10”	Twin Siphon	29064
West Santa Clara Street	Guadalupe Creek	12”	Siphon	28251
West San Fernando Street	Guadalupe Creek	12”	Twin Siphon	29871

8.2.2. Existing Sewer Flows

The City of San José maintains a sanitary sewer model for the Diridon Station Area. This model was used as the basis for the City’s project-specific analysis to determine expected project impacts as discussed in Section 10.2.

8.2.3. Proposed Connections

In order to align with the proposed updated street grid, the project proposes to remove segments of existing sanitary sewer where the proposed design conflicts with the existing infrastructure. New segments will be realigned with the updated street grid to ensure connectivity for all existing buildings to remain.

The project proposes to construct a private, low-pressure connection network with one or two on-site water reuse facilities (WRFs). Based on this design, there would only be up to two sanitary sewer overflow connections to the City's system. Individual models were run for a one versus two WRF scenario. Refer to Section 10.2 for additional detail on the WRF, overflow connections and impacts of this design.

An alternative gravity collection system involving connection of individual buildings to the City's existing sanitary sewer system is also being considered. Each building would connect to the nearest existing sanitary sewer located within the public right of way. Initial results from the City's sanitary sewer modeling of this business-as-usual approach are detailed below.

8.2.4. Sanitary Sewer Capacity Model

The City of San José modeled three scenarios to determine the project's projected impacts to the sanitary sewer system:

1. One or Two WRFs: Pump discharge via force main to West San Fernando Bridge, with one point of connection to the sanitary sewer along Almaden Blvd.
2. One WRF: Gravity discharge of 100% into Park Ave line, with one point of connection to the sanitary sewer.
3. Two WRFs: Gravity discharge into both sewer mains in Park Ave and W Julian St, with two points of connection to the sanitary sewer.

Model results were provided by the City of San José to the project team on March 20, 2020. The City provided *Sanitary Sewer Level of Service Council Policy* dated June 15, 1982, which defines any pipe having a level of service (LOS) lower than "D" or flowing full at peak flow as deficient and therefore requiring improvement. The LOS policy (Council Policy 8-7) is "currently under review to ensure it is in alignment with recent regulatory changes and the planned growth identified in the 2040 General Plan" as documented in the October 16, 2019 City Council meeting minutes. In addition to the LOS policy, the City has capacity management and condition assessment programs that help the City comply with the Statewide General Waste Discharge Requirements (GWDR) to prevent sanitary sewer overflows (SSO's). The City also has an Exfiltration Abatement Program to minimize the risk of wastewater leaching from the sanitary system as required by the 2016 Baykeeper Consent Decree (City Council meeting minutes, February 16, 2010).

Under the pumped discharge (scenario #1, above), where wastewater would only enter the City system at Almaden Blvd., the City's model analysis indicates that no upgrades will be needed to the existing infrastructure in order to accommodate these flows. The gravity discharge of 100% of wastewater flows to Park Ave. (scenario #2) resulted in "surcharge due to capacity limitations or siphons." The gravity discharge of 100% of wastewater flows split between Park Ave. and West Julian St. (scenario #3) still resulted in some "surcharge due to capacity limitations or siphons" along Park Ave. and South Autumn St. including the West St. John St. siphon. The gravity discharge from the northern WRF to W Julian St. resulted in "surcharge due to backwater" along the West Julian St siphon but backwater represents a

Level “D” under the City’s LOS policy, which is acceptable. [City to confirm]. The WRF(s) connection(s) and anticipated discharges are discussed in more detail in Section 10.2 - District Sanitary Sewer System.

In the business as usual scenario, the modeling results show that two upgrades would be required: (1) at N. Autumn Street between Howard Street and West Julian Street and (2) at W. Santa Clara Street between S. Montgomery Street and S. Autumn Street. Under the Northern Variant, two additional upgrades are required: (1) at Cinnabar Street between the west end of the street and N. Montgomery Street and (2) at Cinnabar Street between N. Montgomery Street and the east end of the street. The City sanitary sewer modeling of this business-as-usual approach presented in the December 12, 2019 meeting also concluded that:

- The Project increases the wastewater flows expected for the area by 150% compared to the General Plan.
- The Project contributes 5% of total flows to the Fourth Major Interceptor
- There are no impacts to the sanitary sewer siphons.

Per the 2017 Infrastructure Analysis, the City of San José does not typically allow flow rates through the sewer siphons serving the project site to increase because they experience capacity issues at peak flows during wet weather events. It should be noted that if any upgrades to the existing siphons emerge, those upgrades would require approval from multiple federal, state, and local agencies.

The City is in the process of upgrading the Fourth Major Interceptor, one of four large diameter sanitary sewers running in parallel streets from 7th and Empire Streets to the SJ-SC RWF, under their Sanitary Sewer Capital Improvement Program (CIP). As noted above, the 2017 Infrastructure Analysis indicated an additional 2-3 MGD of capacity is available; it appears that this analysis did not consider the downstream capacity of the interceptor sewers a project constraint. Upgrades to the interceptor sewers are documented in the 2013 *Sanitary Sewer Master Plan Capacity Assessment: Phase II and Update of Phase I*. There are seven segments, or phases, of the interceptor sewer. The Phase VI upgrades are under construction and the Phase VII upgrades are due to start towards the end of 2021 and complete mid-2023. Phase VII upgrades were identified in an August 1986 report titled, “Preliminary Design Report for a Fourth Major Interceptor” (2013 Master Plan). As described in the *2020-2024 Proposed Capital Improvement Program*, “[c]ompletion of the Phase VIIA project will conclude capacity improvements for the Fourth Major Interceptor system between the intersections of North 5th Street and Commercial Street, and North 7th Street and Empire Street.”

8.2.5. Permitting

A sewer lateral permit may be required for all connections to the City’s public sanitary sewer system and applies to the physical construction of the pipe from the sewer main to the property line (within the public right-of-way). Projects will need to submit a Public Works Permit form, as well as provide a certificate of insurance and sanitary sewer plans. For further specificity, refer to the *City’s Sewer Lateral Permit Instructions* dated 11/22/18. This permit will not require additional City Council approval.

The permit requirements associated with the WRF(s) and any discharges are discussed in Section 10.2.5 - District Sanitary Sewer System Permitting.

8.2.6. Ownership & Maintenance

The existing sanitary sewer system in the project area is owned and maintained by the City of San José. It is expected that the City would be responsible for maintenance of the public sanitary sewer system

improvements installed by the project applicant upon acceptance, unless City, at its discretion, agrees to an alternate arrangement.

8.3. RECYCLED WATER SYSTEM

Recycled water is not currently available within the DSAP area. Based on discussions with the City, extension alternatives have neither been studied nor are currently programmed to reach the DSAP area. There is an existing recycled water pipeline offsite currently terminating at Autumn Parkway north of the Union Pacific Railroad tracks that carries recycled water provided by South Bay Water Recycling (SBWR). The pipeline itself is owned and operated by San José Water Company (SJWC). This existing line serves both Guadalupe River Park and Columbus Park. The City does not currently have plans to extend the recycled water network into the Diridon Station Area, and no technical feasibility studies have been conducted for the extension.

Although recycled water is not currently provided to the DSAP area, the project could be served in the future by municipal recycled water. Based on the 1997 Wholesaler-Retailer Agreement between the City of San José and the SJWC plus amendments in 2010 and 2012, SJWC is the recycled water retailer for the DSAP area and has the rights to construct additional recycled water infrastructure that would be owned, operated, and maintained by SJWC. The Applicant will work with SJWC to determine whether the SBWR line will be extended into the Diridon Area and whether the recycled water produced at the WRF(s) will supply non-potable water to these lines.

Refer to Section 10.3 for detail on the proposed on-site non-potable water supply.

8.4. STORM DRAIN SYSTEM

8.4.1. Existing Gravity Collection System

The storm drain system in the Diridon Project Area is owned and maintained by the City of San José. The project area is served by approximately 3.5 miles of backbone storm drain pipe of 18-inches in diameter or larger, which drain via 17 existing subwatersheds into Los Gatos Creek, Guadalupe Creek or Guadalupe River, which are all under the jurisdiction of the Santa Clara Valley Water District (SCVWD).

There are 3 existing pump stations within the proposed project area. The first is located on the northeast corner of the existing San José Fire Department Training Center along Park Avenue. The second is located at the northeast corner of SAP Center parking lots A, B, & C along Julian Street. The third is located on West Santa Clara Street at the rail crossing underpass.

There are 17 outfalls of interest in the project area which have been indicated for analysis. Refer to Sheet 3.14 for the Conceptual Grading and Drainage plan for existing outfall locations. Refer to section 11.2.3 for detail on changes to existing outfalls.

8.4.2. Existing Capacity

Currently the City of San José does not maintain an on-going storm drain assessment program to identify existing conditions of storm drain pipes. The Diridon Station Area Infrastructure Analysis found that the existing storm drain conveyance infrastructure does not have the capacity to convey existing flows. As shown in the analysis completed by Schaaf & Wheeler in January 2020, the existing storm drain network is under capacity for a 10-year, 24-hour storm event in the existing land use condition.

8.4.3. Proposed Drainage Areas

The project proposes to maintain existing storm drainage watersheds to the highest extent feasible. New streets and redeveloped parcels will generally drain into the same collection networks they presently drain to.

8.4.4. Storm Drain Capacity Model

As shown in the storm drain analysis completed by Schaaf & Wheeler in January 2020, improvements would be required to eliminate flooding within the Diridon Project Area during a 10-year, 24-hour storm for the proposed land uses. To mitigate flooding near the proposed Diridon developments, three improvements were modeled and are described below.

8.4.5. Proposed Storm Drain Collection System

The project proposes to connect into the existing storm drain mains in the public ROWs. Approximately 6,300 linear feet of new storm drain mains will be added to proposed streets in order to serve new development, new streets, or streets with new stormwater treatment. Additionally, new laterals would be added to connect all project parcels to the storm drain system. All new pipes shall be designed for the 10-year storm capacity to flow underground and would meet all additional standards as described in the DPW Development Manual (2002).

The project proposes to remove two street segments to align with the new street grid: South Montgomery Street between West San Fernando Street and Park Avenue; and North Montgomery Street for approximately 200 linear feet north of West St. John Street.

Additional upgrades to the existing storm drain system will be required to accommodate the proposed development. New pipes in Cinnabar Street and N. Autumn Street will mitigate flooding along Cinnabar Street and Autumn Street. The pipe in Autumn Street will connect to an adequately sized existing outfall in Julian Street which eliminates the need to construct a new outfall to Guadalupe River.

The proposed larger pipes in West Santa Clara Street will eliminate flooding in the respective area. This project will reconstruct the existing outfall to Los Gatos Creek, upsizing the existing pipe from 18” to 24”. The outfall, located underneath the West Santa Clara Street overcrossing, will require a new larger flap gate to accommodate the larger pipe and to control exit conditions.

Table 8.4: Proposed Storm Drain Pipe Upgrades

Pipe Location	(E) Pipe Diameter	Length	Proposed Pipe Diameter
Cinnabar St – Montgomery St to Railroad	27” RCP	~475’	30” RCP
Santa Clara St - Diridon Station to Guadalupe River	18” RCP	~670’	24” RCP

The existing pump station located along Park Avenue will likely need to be relocated in order to avoid conflicts with the proposed building design. This pump station may be relocated either within the same parcel, or within the existing ROW if there is available space. Additional studies will be required when the parcel and building reach a more detailed level of design.

Refer to Appendix A Sheet C2.1 for the Conceptual Grading & Drainage Plan. Refer to Section 11.3 of this report for proposed stormwater management design both in the public ROW and within private development.

8.4.6. Overland Flow (100-year Flood Event)

In the existing condition, the lowest elevations are located on the north side of the project and at the existing top of bank of Los Gatos Creek. Proposed grading does not intend to change existing grades within ROWs in order to maintain overflow flow paths to the highest extent feasible.

Per the City's DPW Development Manual (2002), new proposed streets should be designed to have capacity to convey runoff from the 100-year storm event without overtopping curbs. However, it should be noted that overland flows exceed the capacity of the roadways in some locations under existing conditions.

8.4.7. Storm Drain System Phasing

The project will design and install the new storm drainage mains based on the principle of adjacency and as needed to facilitate a specific proposed development phase. Storm drain laterals will be constructed on a parcel-by-parcel basis. Temporary storm drain connections may be constructed and maintained by the project applicant as necessary to maintain service to existing buildings.

8.4.8. Permitting

A grading and drainage permit will be required for any installation of on-site storm drainage. The following plans and calculations will be required as part of the permit to approve drainage design: 10-year hydraulic calculations for the on-site conveyance system, grading plan, stormwater control plan, and drainage plan. Further specificity is provided in the City's *Grading and Drainage Plan Checklist* dated 3/17/17. Grading and drainage permits will not require additional City Council approval.

A sewer lateral permit may be required for all connections to the City's public storm drain system and applies to the physical construction of the pipe from the sewer main to the property line (within the public right-of-way). Projects will need to submit a Public Works Permit form, as well as provide a certificate of insurance and storm drain plans. For further specificity, refer to the City's *Sewer Lateral Permit Instructions* dated 11/22/18.

8.4.9. Ownership and Maintenance

All new mains within the stormwater collection infrastructure are proposed as publicly owned and maintained utility lines. It is expected that the City would be responsible for maintenance of storm drain system improvements installed by the project applicant upon acceptance.

8.5. UTILITY RELOCATIONS IN THE ROW

The project proposes street improvements within the limits of the project. Refer to the Mobility Chapter of the DWDSG for additional detail on proposed street sections. As part of this effort, some existing utilities within the ROW may require relocation in order to avoid conflicts between proposed streetscape elements and existing utilities. One of the major components of the new streetscapes are stormwater treatment areas and tree planters which require subgrade area. The following figures show example utility relocation studies for three (3) street sections at W Santa Clara Street, N Montgomery Street, and S Montgomery Street/Bird Avenue. Figures 8.1 through 8.4 are preliminary, shown for reference only. Final street sections to be included in the Mobility Chapter of the DWDSG and are subject to approval by the City of San José.

Figure 8.1: Example Utility Section Key Plan

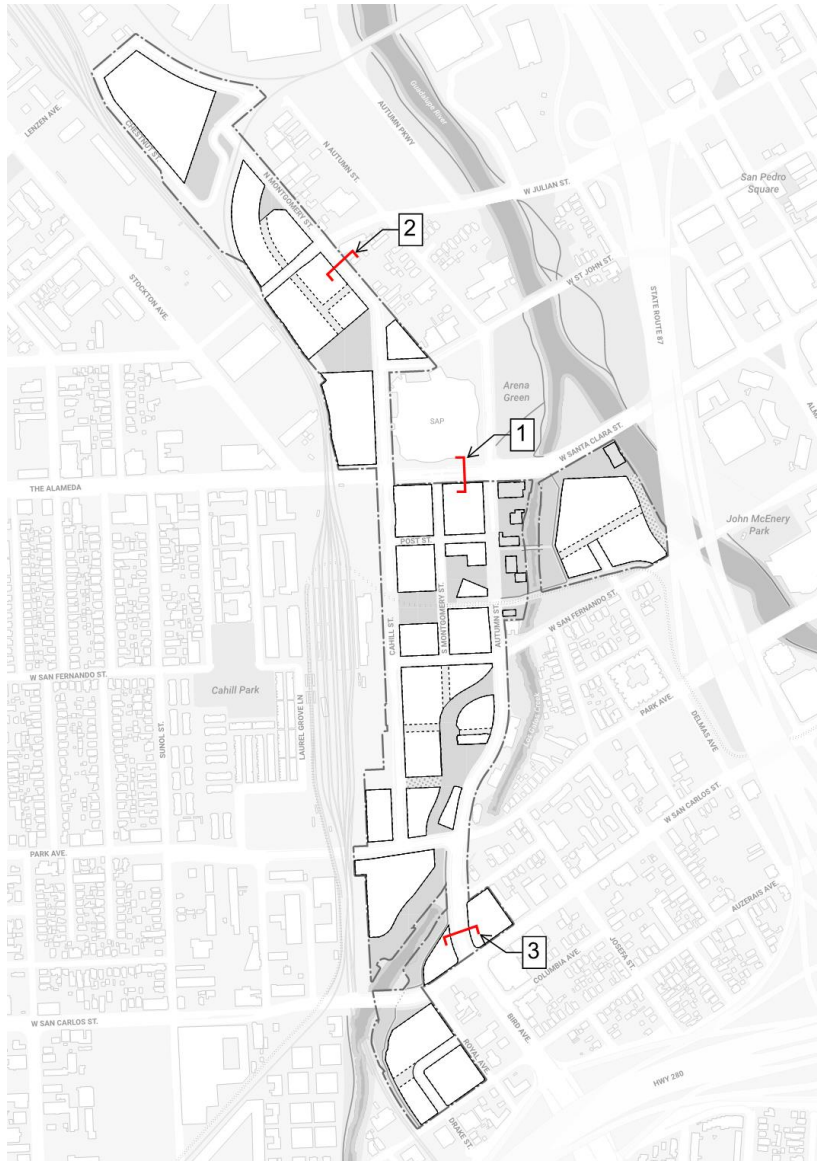


Figure 8.2: PRELIMINARY Street Section 1. W Santa Clara St - existing utility relocations

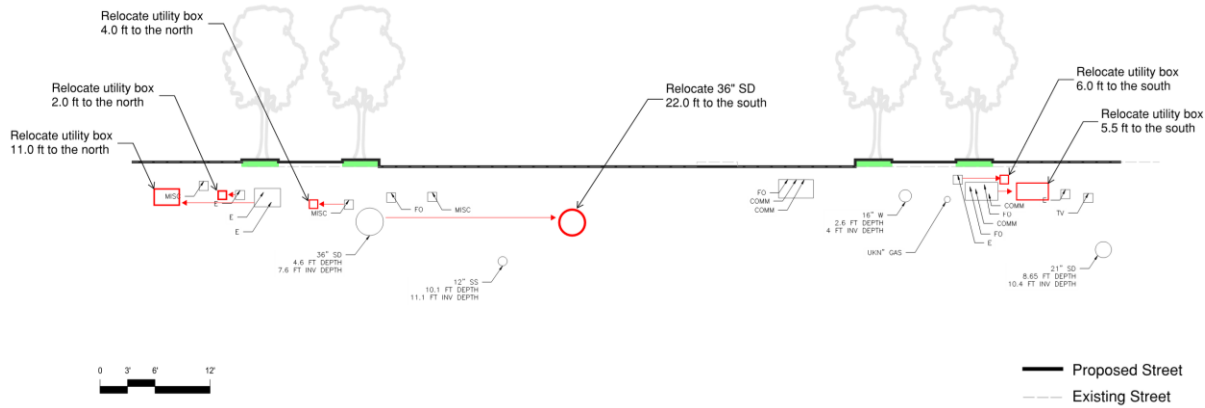


Figure 8.3: PRELIMINARY Street Section 2. N Montgomery St - Minor existing utility relocations required

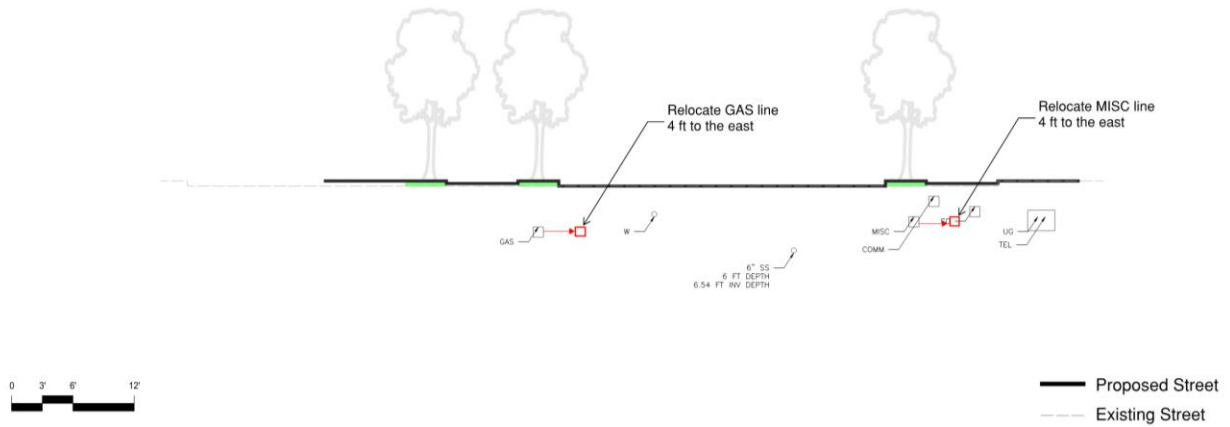
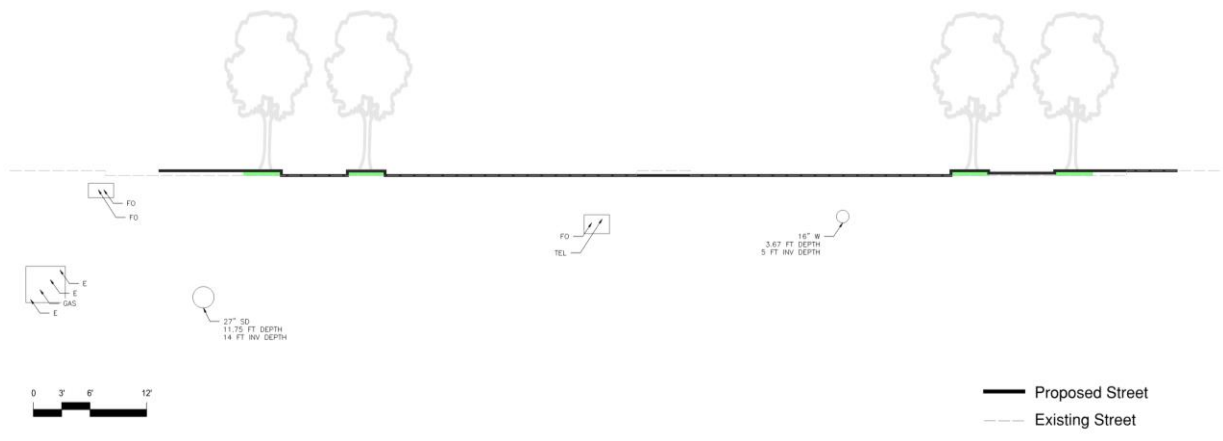


Figure 8.4: PRELIMINARY Street Section 3. S Montgomery St / Bird Ave - No existing utility relocations required



9. FRANCHISE UTILITIES

9.1. ENERGY SYSTEMS

9.1.1. Existing Electric

The project area is served with power from Pacific Gas and Electric (PG&E) and San José Clean Energy (SJCE). SJCE is a community choice energy agency governed by the San José City Council as a City department. SJCE purchases energy directly from the energy source and delivers to customers through existing PG&E infrastructure. There is an existing PG&E transmission to distribution substation, 'San José A', located adjacent to Diridon station.

San José A receives a double 115kV circuit from the El Patio substation to the southwest. This circuit is overhead on existing electrical towers. From San José A, there is an additional single 115kV circuit to the San José B substation in the north. This circuit is also overhead.

San José A has two available distribution voltages, 12.47kV and 4.16kV. Within the project area there are overhead and underground PG&E distribution systems and overhead and underground secondary distribution and service systems for various voltages below 600V. These circuits serve customers both within the project area and elsewhere in the city. Parcels within the project area are also served by San José B.

San José A, in the current configuration, has around 5MW of capacity remaining on the 12.47kV network. The 4.16kV system is a legacy voltage and not available for new customers.

Refer to Appendix A Sheet C8.2 for the existing electrical infrastructure.

9.2. Existing Natural Gas

The site is currently served from the existing PG&E gas network. Gas lines exist and serve parcels within the project area from most roadways within and adjacent to the project site, including:

- Cinnabar St.
- Montgomery St.
- W. Santa Clara St.
- Delmas St.
- Autumn St.
- W. San Fernando St.
- Stover Alley
- Lorraine Ave.
- Park Ave.
- W. San Carlos St.

Within the project site, gas mains exist within sections of Cinnabar St., Delmas St., Autumn St., W. San Fernando St., and Stover Alley. Existing parcels serviced by gas infrastructure connect either to these interior lines or lines in adjacent roadways; not all existing parcels are served by natural gas connections. Gas mains running through the site connect to buildings outside the project site as well and will be required to be maintained during and after the project.

A gas transmission line terminates near the site at the corner of Julian St. and Autumn St. which serves mains within the project site. The transmission line originates north and east of the termination and does not pass through the project site.

9.3. Proposed Electricity and Gas System

The proposed electrical and gas infrastructure is shown in Appendix A Sheets C8.1 & C8.2.

Electrical delivery for the project is expected to be served from PG&E at transmission voltage (115kV) to a project area substation. The exact size of the substation would be confirmed based both on further design of the project and supply capacity from PG&E. Ownership and management of the substation is also undergoing negotiation, with the final ownership agreement to determine the permitting required to construct the substation. Planning with PG&E has commenced for transmission supply to the required capacity levels required to support the project's total land use. The 115kV electricity would be stepped down at a project area substation to either 21kV or 12.47kV and distributed to the various buildings within the development. The proposed scope of electrical work to service the project are outlined below:

New Project Area Substation: The new substation will require a transmission voltage connection to be built to the distribution substation with the following criteria:

- Gas insulated high voltage 115kV incoming switchgear, arranged in a redundant configuration with utility metering
- Two 45MVA, fan assisted transformers to provide redundant power to the district
- 21kV or 12.47kV distribution switchgear

Power Distribution within the Project Area: The substation is intended to serve only the project area initially. Depending on final ownership of the substation, additional customers may be connected in the future at the discretion of the owner and based on power availability. To serve the project area, the following distribution will be required:

- Install a 21kV or 12.47kV distribution network to provide power to all project areas. This is to be located within the utilidor or direct-buried in a joint trench.
- Each individual building, or groups of buildings would then contain step-down transformers to provide building level 480V power.

9.3.1. Required Utility Upgrades

PG&E have been engaged to determine the necessary upgrades required on their system to provide the necessary amount of power at 115kV to service the project area. This section details the utility system modifications needed to facilitate this. Upgrades to PG&E substations and protection settings serving their transmission systems would occur within PG&E's existing footprints.

San José A Substation: The following upgrades are understood from PG&E to be necessary at the San José A Substation as part of the project:

- Provide capacity mitigation to the 115kV transmission lines to allow for the projects full build out capacity
- Construct new ancillary control building with associated battery building.
- Install new protective devices.
- Remove redundant protective relays.

- Install telecommunication equipment.
- Install two 115kV overhead to underground transition risers.

El Patio Substation: The following upgrades are understood from PG&E to be necessary at the El Patio Substation as part of the project:

- Provide capacity mitigation to the 115kV transmission lines to allow for the projects full build out capacity
- Install new protective devices.
- Remove redundant protective relays.
- Replace an existing circuit breaker.

San José B Substation: The following upgrades are understood from PG&E to be necessary at the San José B Substation as part of the project:

- Install new protective devices.
- Remove redundant protective relays.
- Install telecommunication equipment.

New Switching Station: Should service be provided from PG&E, a new switching station is proposed, which would be constructed, owned, and maintained by PG&E. A project alternative is being evaluated wherein ownership of the 115kV infrastructure would be the City of San José rather than PG&E. In this alternate, a new switching station may not be required. The City of San José has provided two interconnection options. The first option would match the proposed PG&E design, where there is a switching station with a looped transmission feeder. The City of San José has provided an alternative design which removes the switching station and connects to existing PG&E transmission infrastructure via taps and provides service to the project owner at distribution voltage. Should the switching station be the preferred alternate, a gas-insulated substation switching station will be required with the following:

- Install a gas-insulated substation (GIS) two-bay, three (6) circuit breaker, 115kV Breaker-and-a-Half (BAAH) layout operated as a ring bus. Property is required to expand to a 2-Bay BAAH and an ultimate configuration of a 4-Bay BAAH (property dimensions of 150' x 100').

Transmission Line Scope of Work: Additional work is required for the transmission lines within the project site. These are detailed in Section 9.3.2, but a summary of required work includes:

- Provide capacity mitigation to the transmission line serving San José A.
- Provide a transition station at the existing electrical tower north of San Carlos to transition the double El Patio / San José A circuit to underground.
- Provide double circuit underground duct bank and cabling.
- Provide a transition station in a yet to be identified location to transition the single San José B / San José A circuit to underground.
- Provide single circuit underground duct bank and cabling.
- Loop the 115KV San José A - El Patio line into the New Switching Station.
- Provide connections at San José A substation.

9.3.2. Undergrounding of Overhead Transmission

The existing PG&E overhead transmission circuits, as part of this development and other developments, will be placed underground at certain locations on PG&E's network.

In order to facilitate this, transition stations (from overhead to underground) are required at the locations of existing PG&E electrical towers. Proposed electrical infrastructure is shown on Appendix A Sheet C8.1. Undergrounding the transmission lines will take place according to PG&E standards and will typically be in underground duct banks with associated vaults and access points.

Should the existing PG&E double circuit overhead line be placed underground, the likely location for the 100' x 75' footprint (including the existing tower) transition station would be the PG&E's existing electrical tower, to the north of San Carlos.

Should the existing PG&E single circuit overhead line be placed underground the likely location for the 50' x 75' footprint (including the existing tower) transition station would be within an identified zone as depicted on Appendix A Sheet C8.1.

9.3.3. Proposed Natural Gas

There is a desire to minimize natural gas throughout the project to meet the project's sustainability goals. However natural gas use may be required for certain end uses, such as retail cooking in up to 50,000 GSF of total developed area. Where required, natural gas would be served from the existing PG&E network within the project area. Using 2019 California Plumbing Code and 2019 California Green Building Standards Code, natural gas pipe sizes to each building will be determined.

There is an opportunity to reduce the pipe size at several buildings by negotiating with PG&E the reactivation of several deactivated gas lines. Further, where new streets are to be constructed, there is opportunity to negotiate extension of utility into these streets rather than serving from gas mains existing in streets noted in Section 9.2. Both strategies reduce the length of pipe and thus reduce the pipe size.

9.3.4. PG&E Permitting

The PG&E infrastructure is evaluated in the project's EIR. Construction permit approvals for undergrounding the existing 115 kV line will be provided by PG&E. Transition stations and undergrounding will be designed and permitted by PG&E directly as required, PG&E has certain permit exemptions for building electrical infrastructure. Following approval from the necessary agencies, PG&E will post a notice of construction.

If the PG&E switching station and project substation are housed in a stand-alone facility, relevant building permits as required will be submitted to and reviewed by the City of San José. Equipment within the switching station and substation will be designed and approved by PG&E. If the switching station and substation are integrated within the consolidated CUP, the enclosure and non-electrical services will be submitted for approval by the City of San José through the building permit process for Non-Residential New Construction. Electrical equipment will be reviewed and approved by PG&E and will be subject to design standards in PG&E's Electrical and Gas Service Requirements (Greenbook) and other relevant guidelines.

9.4. COMMUNICATION SYSTEMS

9.4.1. Existing Communication Systems

The telecommunications serving the project area consists of above-ground and buried telecommunications circuits from several providers, primarily AT&T and Comcast. There is a combination of coaxial cables and strand-mounted active equipment for Comcast service. There are medium count copper cables to provide voice services to businesses and residents in the area. There are also fiber-optic cables for high-speed data service.

North of the SAP Center/The Alameda the circuits are a mix of pole mounted communications cables on the PG&E poles with undergrounding at rail crossings and major street intersections. In the area to the south and east of the SAP Center the cabling has been undergrounded.

South of The Alameda telephone and cable TV lines are primarily above-ground mounted on electrical poles with a few dedicated telecommunications poles. Undergrounding occurs at major intersections creek/river crossings and rail crossings.

There are also train signaling cables in the project area. From the main Caltrain trunk to the rail crossing between Cinnabar Street and N. Autumn St. there is an above ground pole-mounted signaling cable. In the green area to the east of Diridon Station at Crandall Street before the tracks emerge aboveground, there are light rail communications and signaling circuits.

The project area contains one cross-connect box at southeast corner of Cinnabar Street and N. Montgomery St. While outside the project area, the cross-connect box and an active equipment controlled environment vault at the Northwest corner of West St. John's Street and N. Autumn St. may be close enough to be of concern. This appears to serve the SAP Center.

There are four pole mounted cellular telephone sites in the project area:

- Southeast corner of N. Montgomery St.
- Mid-block on South side of W. Julian St.
- Mid-block on the east side of S. Montgomery Street south of Crandall Street
- Mid-block on the west side of S. Montgomery Street adjacent to the Fire Training Center

There is a radio transmission tower in the PG&E substation south of Diridon Station.

The central office that serves the project area is the AT&T San José A central office at 95 Almaden Ave. (CLLI Code SNJSCA02).

There is an AT&T service center located at 145 S. Montgomery St. While this is no longer identified as a central office, there is an underground telecommunications structure on S. Montgomery St. and a large telecommunications structure consisting of multiple underground vaults in both the north and south lanes of Park Avenue. Further research is required on this facility as it may still act as a wire center even if it is no longer a central office so cables may need to be relocated.

There are traffic lights at the following intersections in and adjacent to the project area:

- W. Julian St. at N. Montgomery St.
- W. Julian St. at N. Autumn St.
- W. Julian St. at northbound SR 87 intersection/ Almaden Blvd.

- W. Julian St. at southbound SR 87 intersection
- W. Santa Clara St. at Cahill Street
- W. Santa Clara St. at S. Montgomery St.
- W. Santa Clara St. at S. Autumn St.
- W. Santa Clara St. at Delmas Avenue
- S. Autumn St. at VTA crossing
- S. Autumn St. at Delmas Avenue
- Park Avenue at S. Montgomery St.
- W. San Carlos St. at S. Montgomery St./Bird Avenue
- Bird Avenue at Auzerais Avenue
- Bird Avenue at Interstate 280

The intersection of S. Autumn St. and the VTA lines has rail signal equipment in addition to traffic lights for pedestrian crossing.

The extent of city fiber within the area has not been ascertained.

Information regarding existing conditions and facilities have been obtained from publicly available sources and have not been verified in the field or with the service providers. Validation will be required prior to design efforts.

Access to the project area requires careful planning as it is bordered by multiple forms of transit and the Guadalupe River and Los Gatos Creek. The Caltrain/Amtrak tracks on the west side will likely require an infeasible right of use agreement, as will crossings of State Highway 87 on the east side and I-280 on the South.

Within the project site the primary dedicated streets will require agreements with the city for crossings to create a distribution loop for the cable within the project. The south area of the project will have to contend with crossing beneath Los Gatos Creek to create a connectivity loop for the four proposed buildings south of the Creek.

The discontinuous nature of the project area at The Alameda/SAP center suggests that special attention will be needed to create diverse pathways or a distribution loop, as is typically requested by the project sponsor.

The AT&T service center at 145 S. Montgomery may be acting as a wiring center with service to customers well beyond the project area. The project will be exploring mitigation measures to avoid service disruption for existing customers. Further detail on this topic will be confirmed as the project design develops.

City fiber within the project area will be protected or rerouted based on-site conditions.

9.5. JOINT TRENCH

The joint or common trench system to be included in the public ROW may include underground electric, gas, phone, cable TV and streetlight facilities. This trench would be separate from the utilidor (described in Section 10.1.2) as it will not provide routing for private utilities systems, only Franchise and City utilities.

10. PRIVATE UTILITIES

10.1. DISTRICT UTILITIES

10.1.1. District Systems

The project proposes a district-systems approach for wastewater, energy, and solid waste flows most efficiently, meaning that such services would be delivered through shared district-wide infrastructure, rather than individual and building-specific systems. Providing district utilities and services enables local management of the project's resource demands, thereby reducing burdens on existing municipal systems while increasing project resiliency.

10.1.2. Utilidor Distribution

The proposed project could include new utility corridors (“utilidors”) for the conveyance of private utilities to serve the project area. These private utilities could include thermal systems (chilled and hot water), communications, electrical distribution, sanitary sewer collection, recycled water distribution, and automated waste collection. Additionally, the utilidors could include additional clear space to allow for the movement of goods and other logistics operations. Refer to Appendix A Sheet C5.1 for the [Preliminary] Conceptual Utilidor Plan.

The utilidors may be constructed as a combination of direct-bury utility trenches, utilities within basement parking, or underground tunnel structures. The utilidors would seek to minimize impacts to existing utilities within right-of-way crossings, where practical. When crossing existing streets, the proposed utilidors may be constructed using a jack-and-bore method to cross underneath all existing utilities within the ROW without disturbing them or requiring any street closures. Where this is not possible open cut trenching or other means will be used to construct the utilidors in a phased manner which ensures adequate provision for traffic to cross where required. Refer to Appendix A Sheet C5.2 for a [preliminary] utilidor section and crossing of an existing ROW.

In future design phases, the utilidor will be designed for liquefaction potential and to mitigate differential settlement. Soil prep and additional soil enhancement may be required for installation of new or upgraded public and/or private utilities. Alternative pipe materials choices may also aid to mitigate differential settlement.

10.1.3. Central Utility Plant

The project proposes to consolidate on-site utility services via the construction of one or more Central Utility Plants (CUPs). Consolidating the project utility services CUP(s) improves equipment spatial and operational efficiency, helping the project achieve its stated sustainability goals. There may be up to two infrastructure zones, one in the southwest portion of the site (parcels north and south of Park Avenue between the railway and Cahill Street) and one in the northern portion of the site (at the corner of Julian St. and N Montgomery St) as shown in Appendix A Sheet C5.1.

The development of the northern infrastructure zone is dependent on the Northern Variant scenario. If the Northern Variant does not occur, the project may elect to develop a second logistics center in that zone, and not a CUP. The project's phasing strategy may also require a temporary thermal utilities to serve some parcels prior to the construction of the CUPs.

The central utility plant(s) (CUP) will provide a consolidated location for the following utilities:

- Water reuse facility to treat privately-collected wastewater and distribute recycled water for non-potable uses. This facility would meet California Code of Regulations Title 22 disinfected tertiary (unrestricted reuse) recycled water standards.
- Central utility plant to provide heating hot water and chilled water. Equipment in this facility would comply with Title 24 energy code requirements.
- A CUP may be co-located with a proposed logistics center to further consolidate infrastructure.
- The proposed electrical substation and switching station may be co-located with the CUP as well to further consolidate infrastructure.
- The plant may also include back up facilities for resilience and life safety including generators and battery storage.

10.1.4. Permitting

City approval of one or more Encroachment Agreements would be required for utilidor crossings of public rights-of-way. Appendix A Sheet C5.1 provides the proposed approximate location and depth of the utilidor at each public ROW crossing, as well as the approximate dimensions and indicative route.

As noted above, the Central Utility Plant will be housed in one or more buildings, and may be integrated within parcels also housing commercial, retail, or other use. The structures of the CUP will be submitted for building permit in accordance with the City of San José’s Non-Residential Building Plan Review. All documents as required in City of San José Bulletin #232, *New Buildings Plan Submittal Checklist*, will be provided at the time of permit submission. Temporary utilities, if required, will be permitted as part of the individual parcels which they serve.

Permitting pathways for the individual utility systems within the CUP are described in subsequent sections.

10.2. DISTRICT SANITARY SEWER SYSTEM

10.2.1. Collection Areas

The proposed sewer system would collect wastewater from the majority of the project’s proposed development parcels via a private collection network owned by the project applicant and connected to a district water reuse facility (WRF). See section 9.2.4 below for additional detail on the WRF. Some development parcels (eg: Parcel H1) may connect directly to the city’s sanitary sewer network as identified in Appendix A Sheet C6.1.

10.2.2. Proposed Low-Pressure Collection System

The proposed design for wastewater collection includes a private, low-pressure sanitary sewer collection network which would be integrated into the proposed utility corridor alignment as shown in Appendix A Sheet C6.1. Sanitary waste would be collected in a small pump station in each building basement. The pump stations would include a collection tank and a pump to feed into a low-pressure force main, routed within the proposed utility corridor. Pumps would be selected to adequately transfer wastewater solids through the network to the WRF.

A low-pressure collection system (also known as a pressure sanitary sewer, PSS) would be advantageous for this project as it allows for the controlled transfer of sewage in a more efficient footprint than conventional gravity systems. A pressurized system would allow for wastewater to be collected in smaller diameter pipes within the utilidor whereas a gravity system would require that a dedicated trench be

constructed with larger diameter pipes to achieve adequate slope for flow. A PSS operates through a sealed system, eliminating leakages (exfiltration) and stormwater inflow and infiltration (I/I) while also reducing odor issues. The pump station wet wells associated with the PSS will be vented as required by CPC to prevent odorous conditions. If needed, air blowers and odor control units (e.g., carbon filters) may be incorporated into the pump station design.

If in the future, expansion of the wastewater collection system was required, the capacity of the PSS system could be increased by upsizing the lift stations and if needed, upsizing the downstream pipes which are easily accessible via the utilidor. The inclusion of PSS and WRF avoids the upsizing of buried gravity mains, which would be a much larger construction project and would involve trenching within public roadways. Additionally, a PSS allows for system optimization, as the operator can program the system's operating periods and stagger peak loads. This flexibility could potentially reduce the overflow volume that would be sent to the City.

10.2.3. District Wastewater Treatment and Water Reuse Facilities

10.2.3.1. Facility Design

Up to two private district water reuse facilities (WRFs) are proposed to treat site wastewater for reuse to meet non-potable demands where a second WRF would be constructed under the Northern Variant scenario. The WRF(s) would include a multi-stage treatment system for primary treatment, secondary treatment, tertiary filtration, and disinfection. Membrane bioreactors (MBRs) are proposed as the secondary treatment for the WRF(s). MBRs are a globally proven technology and would be the preferred treatment process for this project due to their compact footprint and the density of this site. The WRF(s) have been sized to treat a total maximum daily wastewater production flow of 1 million gallons per day (MGD). Water that has been tertiary filtered and disinfected would be stored in a non-potable storage tank before being distributed for uses such as toilet flushing, cooling, and irrigation. Treated non-potable water would be distributed via a pressurized distribution network within the private utilidor.

10.2.3.2. Overflow Connection

As described above in Section 8.2, the private district system would tie into the City's sanitary sewer network to discharge any wastewater flows for emergency or operational purposes. During normal operation, the WRFs may discharge bypass flows and residuals to the City's sewage system subject to seasonal conditions, such as when demand is lower for recycled water (i.e., wet season). These discharges would incur a fee based on the City's monitored industrial discharge rates.

While planning is being conducted to allow for the WRF(s) to be offline as described in Section 8.2 - (Public) Sanitary Sewer System, it is anticipated that, once operational, the WRF(s) would not need to go offline. This arrangement would also add redundancy to the proposed WRF and would avoid the need for permitting a treated water discharge into the environment.

This sanitary sewer overflow connection would be pumped across Los Gatos Creek via the proposed utility corridor and Guadalupe Creek via the West San Fernando bridge. An existing 33" RCP City sanitary sewer trunk line has been identified running within Almaden Boulevard where a connection is proposed. The point of connection would be determined in coordination with City staff. The overflow infrastructure may require some installation within existing roadways once it exits the proposed utilidor. Overflow infrastructure outside of the proposed utilidor would require an encroachment permit within the ROW.

If a northern WRF is constructed in the case of the Northern Variant, a second sanitary sewer overflow connection would be required. The northern WRF would connect to the City sanitary sewer system by gravity and would require a separate connection outside of the proposed utility corridor.

10.2.3.3. Treatment Standards

The proposed district WRF(s) would treat wastewater to California Code of Regulations Title 22 disinfected tertiary (unrestricted reuse) recycled water standards. These are the same public health standards met by the recycled water produced by the San José-Santa Clara RWF and distributed by South Bay Water Recycling. The WRFs would be co-located with the mechanical and thermal equipment in the CUP locations outlined in Section 10.4.1.

10.2.3.4. Solids Management & Corrosion

The treatment plant residuals would be predominantly liquid, with a very low percentage of solids. These solids could be discharged into the City's sanitary sewer system. Based on the *2012 Sanitary Sewer Flow Monitoring Service Order No. 6*, the City's sanitary sewers have adequate flow to carry these solids to the Regional Wastewater Facility. As such, it is not anticipated that this discharge would create a high corrosion potential in the sewer lines.

Alternatively, sanitary solids produced as a by-product from the district WRFs could be managed on-site through anaerobic digestion, generating biogas that could be used in fuel cells to generate electricity. Should anaerobic digestion be implemented, co-digestion with food waste collected via the automated water collection system would increase the amount of biogas and biosolids production. The digested biosolids would be dewatered and reused beneficially as soil amendment. Alternatively, these solids can be pumped into the City's sanitary sewer network without being thickened or digested.

The City of San José currently has a robust condition assessment program. A memo provided to the City on March 16, 2020 provided background information and suggested contacts from the San Francisco Public Utilities Commission (SFPUC). The SFPUC has invested in a sewer system model that can predict hydrogen sulfide formation in sewer networks.

10.2.3.5. Odor Control

At the initial stage of treatment, raw wastewater is screened to remove inorganic solids, which are collected in a roll-off bin and periodically hauled off-site. Preliminary screening of wastewater is intended to remove large materials from the flow stream that may damage or clog subsequent treatment equipment and reduce overall treatment reliability. Screens can either be coarse or fine depending on the size of material intended for removal. Materials captured by the screens are called screenings and can include rags, plastics, and paper. Screenings are composed of primarily inorganic wastes that are not biodegradable and not beneficial for post processing and resource recovery. As such, screenings are typically washed, compacted and hauled off site at regular intervals for disposal in a permitted landfill.

Grit such as sand, gravel, coffee grounds and egg shells are removed to prevent their accumulation in downstream processes such as aeration basins and anaerobic digesters. These materials are typically removed via gravity settling; scour air or another abrasion process can be used to more effectively separate grit from other suspended solids. Similar to screenings, grit does not have a resource recovery value and is hauled off site.

The screenings and grit would need to be managed to not create nuisance odors; wastewater treatment plant odors are subject to the jurisdiction of the Bay Area Air Quality Management District. Handling and disposal would require screenings and grit to be washed and drained, and the wash water may be recycled to the front of the treatment train. Once washed and dewatered, the screenings and grit will be stored in refuse containers satisfying the City’s requirements, and routinely hauled offsite to a permitted landfill. Refuse containers would have to be odor proof and contained within an area draining to the sanitary sewer in the case of a rain event. Odor control measures may also include housing primary screenings in a ventilated enclosure at the WRF.

Primary treatment and management of primary and secondary solids will also produce odors. The WRF will have appropriate odor controls to manage any objectionable odors from these processes. The headspace of tanks with the potential to produce odors will be vented. If needed, air blowers and odor control units (e.g., carbon filters) may be incorporated into the wastewater treatment design. Specific solutions will be developed as the project moves into design.

10.2.4. Private Sewer System Phasing

The sanitary sewer collection system would be built out as buildings come online through the three phases of construction as described in section 1.7. Sewer laterals and all required pumps would be constructed on a parcel-by-parcel basis.

10.2.5. Permitting

The San Francisco Bay Regional Water Quality Control Board (“Regional Board”) will issue the operational permit, or Order. The State Water Resource Control Board (“State Water Board”) Division of Drinking Water (DDW) will review the engineering report and provide technical comments on tertiary filtration and disinfection unit processes. The Santa Clara County Department of Public Health (DPH) may act in an advisory role. The City of San José will act as a permit stakeholder and will issue an industrial pretreatment permit (if required) and the building permit.

The permit and approval requirements for the WRF will include meeting:

- California Water Code, Section 7 (Porter-Cologne Act)
- California Health Laws Related to Recycled Water (“The Purple Book”)
- California Code of Regulations (CCR), Title 22, Division 4. Environmental Health
- California Plumbing Code (CPC)
- City of San José Industrial Pretreatment Permit requirements for the discharge of wastewater treatment residuals
- Bay Area Air Quality Management District requirements

10.2.6. Ownership & Maintenance

The project applicant would be the entity responsible for ownership and maintenance of the district water reuse system and private sanitary sewer collection system.

10.3. DISTRICT NON-POTABLE WATER

10.3.1. Project Demands

In the proposed development, recycled water may be used for toilet flushing, irrigation, and/or mechanical cooling tower use. Use of recycled water may help the project comply with the City of San

José’s New Construction Green Building Requirements which require meeting LEED Silver with a goal of reaching LEED Gold. All Google office buildings in line with the AB900 certification will achieve LEED Gold and water incentives will be a contributor to the overall performance.

Estimated average non-potable water demands based on unit demands for similar developments are given in Table 10.1. Non-potable demands do not account for potable water uses such as drinking water. A preliminary water balance shows an excess of non-potable water during winter months. Additional winter season non-potable demands would be investigated to use this surplus. As described in Section 8, project water demands are provided here as an engineering estimate for informational purposes only.

Table 10.1: Average non-potable demands

Program	Average Daily Non-Potable Demand (gal/d)	Average Annual Non-Potable Demand (MGY)
Office	62,100	23
Residential	44,900	16
Retail	10,200	3.7
Restaurant	-	-
Hotel	2,900	1.1
Event space	600	0.2
District Systems	5,100	1.9
Logistics/Warehouse	5,100	1.9
Subtotal: Interiors	130,900	48
Cooling	99,100	36
Irrigation	63,400	23
Subtotal: Seasonal	162,500	59
Total	293,400	107

10.3.2. Proposed Non-Potable Water Supply

As outlined above, the non-potable water supply to the project site would be provided by up to two district WRFs that would treat sanitary sewer flows produced by the project for non-potable reuse throughout the project.

10.3.3. Proposed Distribution System

Treated recycled water would be distributed to all or most project development parcels through a private distribution system. The non-potable pipe would be routed through the utility corridor and connect to all proposed buildings as a non-potable supply for toilet flushing and irrigation. The non-potable supply would also be sent to the proposed central utility plants (CUPs) as a makeup water supply for the cooling towers.

Refer to Appendix A Sheet C6.2 for the [Preliminary] Conceptual Recycled Water Plan.

10.3.4. Alternative Non-Potable Water Supply

Recycled water from the City of San José may be used as an alternative non-potable water supply. In the proposed scenario, the existing recycled water system may be extended to the project site in order to provide a backup supply to the proposed WRF(s). This extension would replace a potable water backup connection.

10.3.5. Non-Potable Water System Phasing

The non-potable water distribution network would be built out as buildings come online through the three phases of construction as described in section 1.7. Non-potable laterals and any required booster pumps would be constructed on a parcel-by-parcel basis. As described above, the majority of the district WRFs would be built during the proposed project's initial phase, to ensure that a non-potable supply would be available for buildings as they are developed.

10.3.6. Permitting

The distribution of the non-potable water will be subject to review by the SF Bay Regional Board and the Division of Drinking Water similar to the WRF(s). The Regional Board administers Water Reclamation Requirements for Recycled Water Use under the General Order, *Water Reclamation Requirements for Recycled Water Use* (Order WQ 2016-0068-DDW). It is likely that the project would enroll in this Order under a Notice of Applicability (NOA) issued by the Regional Board.

As coordinated with these State authorities, the construction of the non-potable water distribution system may be overseen by the local DPW for inspection during installation.

10.3.7. Ownership and Maintenance

The non-potable water pipe routing that is on project applicant property and in connecting utilidor corridors crossing public rights-of-way would be owned and maintained by the applicant.

10.4. DISTRICT THERMAL SYSTEMS

10.4.1. Proposed Thermal System

There is no existing heating hot water or chilled water system serving the site. Thermal energy for the project is proposed to be served from up to two central utility plants (CUPs). The project phasing strategy may require temporary thermal service to some buildings while the CUPs are constructed. Provision for temporary heating and cooling equipment to be removed when the CUPs are commissioned will be made. The CUPs would provide heating hot water and chilled water to the majority of the buildings within the project area via underground heating hot water and chilled water pipes located within the utilidor and/or direct-buried. Refer to Appendix A Sheet C7.1, [Preliminary] Conceptual Thermal Energy Layout.

Equipment at the plant would be selected to comply with Title 24 energy code requirements and support achievement of LEED-ND Gold for the project and LEED Gold for the office buildings. Additional energy, carbon, and water savings are possible through centralization through heat recovery between buildings within the project. Centralizing thermal production also allows for improved operating efficiency of primary cooling and heating equipment, reducing electricity and natural gas use for the project.

Central cooling generation is currently proposed via water cooled chillers and heat recovery chillers rejecting heat to cooling towers mounted on the roof of the CUP building. Heat rejection via a localized ground loop utilizing structural piles or mat foundations within the project area may be utilized as well. Heating is proposed to be all-electric via air source heat pumps located on the roof of the CUP building, heat recovery chillers, and water source heat pumps connected to a ground loop located within the mat foundation and/or structural piles of the CUP and nearby buildings. Alternate means of heat exchange would be subject to additional approval. Centralizing thermal equipment provides greater operational efficiency as well as a means to exchange heat between residential and commercial buildings, as well as reduce water consumption required for cooling towers. The project may also include wastewater heat exchange from the district non-potable water system, thermal energy storage and anaerobic digestion of on-site generated organic waste and use of biogas incorporating fuel cells.

Several opportunities for further energy and carbon reduction may additionally be explored, including: the use of open source wells or deeper closed loop boreholes for ground source heating and cooling; biogas provision to backup generators. These alternatives would be subject to additional approval if proposed for inclusion within the project.

The CUPs and distribution of heating hot water and chilled water would be owned and managed by the project applicant. Heating hot water and chilled water distribution would be via pipes located either in the proposed utilidor or direct buried. Alternates using geothermal heating and cooling may also require a condenser water pipe between buildings through connecting ground loops, wells, boreholes, or piles.

A limited number of buildings may not receive thermal service from the CUP due to phasing or construction limitations. These include existing buildings that will remain within the development area, certain residential buildings, and parcels which may be constructed prior to the CUP and hot and chilled water lines being complete. Where appropriate, temporary thermal service may be located at these parcels with a connection to the CUP replacing the temporary service when appropriate. In other cases, the parcels will maintain stand-alone thermal equipment unconnected to the CUP. In all cases, non-CUP thermal equipment will meet all required standards under California's Title 24 building Energy Efficiency Standards.

10.4.2. Permitting

The thermal equipment in the CUP will be selected to comply with all applicable codes, including the latest version of the California Green Building Standards (CalGreen) as applicable at the time of permit submission. Mechanical equipment will be submitted for plan review as part of the building permit process, following the requirements set for in City of San José Bulletin #232, *New Buildings Plan Submittal Checklist*.

Should ground source heating and cooling be pursued using either open loop wells or closed loop bores, an addendum to the Environmental Impact Report will be prepared for review. Additional jurisdictional approvals will be required from the Santa Clara Valley Water District for approval to extract and reinject groundwater from the aquifer.

10.4.3. Ownership & Maintenance

The proposed thermal systems would serve the full proposed project, with some buildings being serviced by standard BAU systems depending on phasing constraints. The final ownership and operation of the systems is under review to ensure that the benefits are realized from an environmental perspective.

10.5. DISTRICT ELECTRICAL SYSTEM

10.5.1. District Microgrid and Renewable Energy

Renewable generation technologies including photovoltaic arrays and building-integrated photovoltaic products may be located on building rooftops and facades, with an anticipated minimum peak generation capacity of 7.8 MW. In addition, storage technologies such as batteries may also be deployed within buildings throughout the development. This would allow the realization of project benefits such as:

- Provide power to key project area loads in the event of a utility wide grid outage.
- Allow renewable energy to be shared between buildings.
- Allow the generation and storage technologies to provide grid services and balance demand and on-site generation with grid import and export.

The project is also proposing providing localized 12.47/21 kV infrastructure from a dedicated transmission substation to connect the majority of buildings within the development area in a microgrid with a single point of connection to the main grid. The microgrid would include controls to share power between buildings across the microgrid distribution, and controls to operate any below substation generation and storage disconnected from the grid in the event of an outage. It is not anticipated, however, that the microgrid will have sufficient renewable energy and storage to operate for an extended period in an islanded scenario due to the high-density nature of the project. The intent of a single point of connection and microgrid topology is primarily to enable sharing of renewable power and storage and provide limited resilience to critical functions in the event of an outage.

A limited number of buildings may not connect to the microgrid; these include existing buildings which will remain in the development area, some residential buildings, and parcels which may require power prior to construction of the CUP and microgrid due to phasing. In this event, electrical distribution to these buildings will be provided by PG&E to the main meter for the building via distribution lines in the public right of way rather than the private utilidor. Renewable generation and storage assets located at these buildings will not contribute to the microgrid.

The project's microgrid distribution would be housed within the proposed utilidors as described in Section 10.1.2. See Appendix A Sheet C8.1 for [preliminary] indicative utility routing.

10.5.2. Permitting

Electrical feeders connecting throughout the site will be submitted as part of the utilidor approvals. Individual electrical connections at each building will be submitted as part of the building permit review process for the building in accordance with the requirements from the City of San José for Building Plan Submission. Electrical equipment within the CUP will be submitted as part of the Building Plan Review and permit application for the CUP. As noted previously, substation equipment, if integrated with the CUP, will be reviewed and approved by PG&E as well.

10.5.3. Ownership & Maintenance

The proposed microgrid electrical distribution and thermal systems would serve the full proposed project. The final ownership and operation of the systems is under review to ensure that the benefits are realized from an environmental and economic perspective.

10.6. DISTRICT COMMUNICATIONS

10.6.1. Proposed Communication Systems

The project's infrastructure obligations include the design and construction of the proposed communication utility systems to serve the development.

The proposed improvements for communications and data infrastructure include:

- Singlemode fiber-optic cabling to each new building with diverse routing to provide resiliency. Based on previous campus projects this could take the form of multiple self-healing rings based on geographic zones.
- Undergrounding or removal of existing telecommunications fiber and copper in the project area.
- Provision for communications connectivity to residential areas of the project including data connectivity and connectivity for cable-television and voice services. Connections to residences will likely be provided by fiber-optic cable, regardless of who provides the service. Within the residences this may transition to coaxial cable or remain on fiber.
- Provision for installation of future 5G cellular service. The trajectory of 5G service is being developed and will remain under study, but the timing of this project and the rollout of 5G services nationwide would indicate a substantial 5G infrastructure including fiber backhaul.

10.7. SOLID WASTE COLLECTION

10.7.1. Existing Solid Waste Collection Infrastructure

The site is currently served by truck-based municipal waste collection. There is no existing underground infrastructure on-site for solid waste collection.

10.7.2. Proposed Automated Waste Collection System

The project is considering various strategies to manage solid waste, including an automated waste collection system (AWCS). The AWCS option comprises a main pressurized pneumatic pipe that runs below grade, primarily within the proposed utilidors. Individual buildings are connected to the main AWCS trunk via below-grade laterals. The computer-controlled system would allow for the collection of a variety of solid waste streams via waste inlets distributed within the buildings and at select exterior locations. The waste is transferred through a single-pipe that pneumatically pulls the waste to up to three central terminal facilities, where each waste stream is deposited into the appropriate container. A flatbed waste collection truck would then arrive at the terminal facility to haul away a full container, while delivering an empty replacement container. These terminal facilities, collectively sized at approximately 15,000 square feet would be located within one or both of the infrastructure zones and/or near the CUP(s) or an on-site logistics hub. This system is expected to support three primary waste streams, such as wet, dry and food scrap. Other residual waste streams not transported by the AWCS will be collected by a vehicle from each building.

Refer to Appendix A Sheet C6.1 for the [preliminary] conceptual layout of the AWCS.

10.7.3. Permitting

The Automated Waste Collection System will require coordination with a number of entities, some of which require permits:

To comply with the Public Resources Code (PRC), Sections 44001 and 44002, each AWCS terminal will require a CalRecycle Full Permit as a waste transfer station. The San José Department of Environmental Services will act as CalRecycle's Local Enforcement Agency (LEA). Further coordination with this department is recommended.

As a pneumatic system, coordinating with the California Air Resources Board (CARB) is recommended. The local representation of CARB is the Bay Area Air Quality Management District (BAAQMD). The following permits may need be required in consultation with BAAQMD:

- Authority to Construct (A/C) - This is a pre-construction permit that is issued before equipment is installed. An A/C may require the permit holder to meet certain conditions before operation can begin.
- Permit to Operate (P/O) - This permit allows the holder to operate (use) all equipment or activities listed on the permit.
- Certificate of Registration - This type of permit is given to specific types of equipment or activities that are smaller in nature.
- Certificate of Exemption - Upon request, this type of document is issued if the specific type of equipment or activity does not require an Air District permit.
- Register Equipment - Owners of the following types of equipment may be eligible to apply for a renewable registration certificate instead of a permit.

Another key entity is Republic Services, the exclusive waste collection franchisee of the City of San José. While this entity does not issue permits, coordination with and approval from this entity is recommended.

City of San José approval of one or more Encroachment Agreements would be required for crossings of public rights-of-way whether located in the utilidor or otherwise.

10.7.4. AWCS Phasing

The AWCS option would be implemented and extended throughout the construction phases beginning with the terminal facility and associated pneumatic pumps in phase 1. AWCS laterals and required trunk extensions would be constructed on a per-parcel basis. Inlets for the system would be constructed on a per-building basis.

11. SITE DESIGN

11.1. FLOOD MANAGEMENT

11.1.1. Existing Conditions

The effective FEMA Flood Insurance Study (FIS) Number 06085CV001B dated February 19, 2014 depicts all 100-year flows are contained within Los Gatos Creek and Guadalupe River as shown in Appendix A Sheet C1.1. The development parcels outlined are located within Zone X and Zone D which have no development requirements.

11.1.2. Hydraulic Modeling

The Santa Clara Valley Water District (Valley Water) has developed a two dimensional hydraulic HEC-RAS model of Los Gatos Creek which represents the best available floodplain data within the watershed. The creek model identifies a deficiency of capacity in the channel that results in overbank flooding during the 100-year event that is not identified on the FEMA FIRM. As such, this project will need to address the updated floodplain within the design to meet all local and federal requirements.

The results of the Valley Water hydraulic model shown in Figure XX.X for the 100-year floodplain extent, with indicative project structure footprints shown for reference. Where water depths exceed one foot an A Zone designation is shown, whereas depths less than one foot are classified as X Zone. FEMA and the City require the elevation or floodproofing of structures within A Zones as described below.

11.1.3. Proposed Conditions

Channel rehabilitation and the reconstruction of the Los Gatos Creek bridge at West San Fernando Street are considered as project alternatives which would help mitigate existing 100-year flood impacts. Portions of this work would be located outside of the project boundary as described in the project's EIR, but would be considered a project improvement.

11.1.3.1. Channel Rehabilitation

An in-channel rehabilitation project would both improve creek ecology and improve user experience adjacent to the creek as well as lessen impediments to flow and improve channel hydraulics thereby reducing overbank flooding.

The existing channel has a high roughness coefficient which slows flow, reduces capacity, and results in overbank flooding. Existing condition roughness coefficients could be reduced by approximately 0.01 through removal of trash, debris, dead and live trees, and invasive plant species. Ongoing maintenance (in perpetuity) would also help reduce the roughness coefficient by preventing the accumulation of additional debris and re-growth of select trees to lower flow obstruction.

The rehabilitation project could extend from the West Santa Clara Street bridge to the West San Carlos Street bridge and occur on both banks.

11.1.3.2. Reconstruction of San Fernando Bridge

The existing West San Fernando Street bridge represents an impediment to flow due to columns and abutments within the channel and a low bridge deck. In conjunction with the channel rehabilitation project, reconstructing San Fernando bridge to a clear span would significantly reduce overbank flooding during a 100-year event. In order to accomplish this, the bridge would need to be reconstructed so that the abutments are located outside of the channel with no supports within the channel. This requires an approximate 100-foot free span with a minimum soffit elevation of 91.8 feet.

11.1.3.3. Design Alternatives

With channel rehabilitation and bridge reconstruction, five (5) proposed structures would remain in a Zone A designation and would require elevating or flood protection measures per Section 11.2.2.

If neither of these improvements is implemented, buildings on fourteen (14) parcels located in Zone A would need to be elevated. The ground level of these buildings would be at an elevation of, at minimum,

one foot above the base flood elevation levels determined to be adequate by flood modeling conducted for the project or dry floodproofed to that same elevation. All residential land uses will be elevated.

11.1.4. Permitting

The Project is subject to several agency and local government regulations regarding development with a 100-year floodplain.

City of San José

As the floodplain administrator and member of the National Flood Insurance Program (NFIP), the City of San José will review and approve projects located within the best available 100-year floodplain A Zone designations. City of San José Municipal Code Chapter 17.08 requires that structures in Zone A be elevated such that the finish floor is located above, or protected to, the base flood elevation (BFE). Additionally, the Project cannot cause a cumulative rise in BFE of more than one foot. The City has also adopted the 2019 California Building Code (CBC) which incorporates a freeboard requirement that project finish floors must be elevated or flood proofed to one foot above the BFE.

Valley Water

As the owner of the Creek, project elements such as bridges or in-channel work must be reviewed and accepted by Valley Water to meet their priorities of restoring wildlife habitat and providing flood protection.

11.2. GRADING & EARTHWORK

11.2.1. Existing Site Conditions

The site is generally graded to fall from south to north, towards the San Francisco Bay, sloping at an average of 0.5%. Existing elevations range from approximately 79 ft to 103 ft.

11.2.2. Proposed Grading Requirements

Proposed site grading would provide Americans with Disabilities Act (ADA) accessible pathways throughout and adjacent to the parcels, meeting Building Code accessibility standards.

Per the City of San José Building Code, the lowest floor of development (FFE) within Flood Zone A must be elevated at or above the base flood elevations (BFE) as described in Section 11.1. San José has adopted the California Building Code (CBC) to require additional freeboard for a minimum FFE one foot above the BFE.

The project would provide for proper overland flow conveyance during peak rainfall/flood events to ensure that the 100-year design storm drains through the project area and does not worsen existing conditions within the larger DSAP area.

11.2.3. Proposed Site Grading Design & Conforms

The project applicant would be responsible for the design and construction of the proposed grading plan for the Diridon Site. Proposed grading designs for the development would match the existing south to north drainage pattern of the existing site. Accessible paths of travel would be designed on a parcel-by-parcel basis to provide ADA access to all proposed buildings. Proposed grading and earthwork activities

are anticipated to be limited to the development parcels and conform to existing grades at the edge conditions along the parcel boundaries and rights-of-way. Although improvements would be made to the streetscapes, the project strives to minimize elevation changes within the existing ROWs.

Dependent on which project alternative is chosen for the project from Section 11.1.3, a different quantity of building may need their FFE artificially raised. Raising of grades can be done with either fill or by raising a subgrade parking garage to partially exposing the exterior structure. Additionally, any building with a raised FFE will require fill, ramps, and/or stairs to ensure there are accessible paths from the existing streets to entrances which meet ADA standards.

As an alternative to elevating structures by fill, flood barriers and waterproofing may be used. Buildings within Flood Zone A should be externally waterproofed up to the minimum FFE. The top elevation of any proposed floodgates must also reach the minimum FFE. Flood barrier design can be flexible to meet building design, spatial and aesthetic requirements. Barriers that may be considered include (but are not limited to) permanent standing barriers, automated barriers integrated into the ground or building walls, or removable barriers.

Refer to Appendix A Sheet C2.1 for the Conceptual Grading & Drainage Plan.

11.2.4. Permitting

A grading and drainage permit will be required for any excavation, grading, or construction of retaining walls. The following plans and calculations will be required as part of the permit to approve grading design: geotechnical report, earthwork specs, demolition plan, grading plan, stormwater control plan, and drainage plan. Additionally, any grading occurring between October 1st and April 30th will require an approved erosion control plan. Further specificity is provided in the City's *Grading and Drainage Plan Checklist* dated 3/17/17.

Grading and drainage permits will not require additional City Council approval.

11.2.5. Phases of Site Earthwork

The project applicant would grade the project site based on the principle of adjacency and as needed to facilitate a specific proposed Development Phase. Interim grading may be constructed and maintained by the applicant as necessary to maintain existing facilities impacted by proposed development phases.

11.3. STORMWATER MANAGEMENT

11.3.1. Existing Conditions

The project area currently serves mostly industrial and commercial development, with many large, asphalt parking lots and minimal existing landscaped areas, making it approximately 95% impervious. The existing developments do not treat stormwater runoff prior to discharge to the City's collection network.

11.3.2. Hydromodification

This project is not subject to hydromodification requirements based on the "Classification of Subwatersheds and Catchment Areas for Determining Applicability of HMP Requirements" (SCVURPPP 2016).

11.3.3. Stormwater Management Requirements

As part of the integrated approach to stormwater management, the project will at a minimum comply with all stormwater management requirements for both quantity and quality as provided by the City of San José Green Stormwater Infrastructure Plan (GSI) dated April 2019 and the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP) Green Stormwater Infrastructure Handbook, dated September 2019. Runoff from public and private parcels is anticipated to be treated separately before entering the existing storm drain system. GSI facilities can be sized based on the water quality volume and/or water quality flow of runoff from all contributing impervious surfaces per the SCVURPPP GSI Handbook.

11.3.4. Proposed Treatment in the Public ROW

Stormwater from all public street ROW improvements will be treated to meet the GSI Plan requirements. Stormwater calculations have been completed for each street in order to ensure that enough square footage is available within each proposed street section. Refer to the Mobility Chapter of the DWDSG for plans and sections which show additional detail for the proposed stormwater management strategy.

The project will meet all treatment requirements by implementing green infrastructure strategies suggested by the SCVURPPP Green Stormwater Infrastructure Handbook which may include bioretention, flow-through planters, suspended pavement systems, and/or pervious paving. Typical standard details for these stormwater management strategies are shown in Appendix A Sheet C3.3. Minimum indicative treatment areas assuming treatment is achieved through flow-through planters are shown in Appendix A Sheets C3.1 & C3.2.

11.3.5. Proposed Treatment on Private Parcels

All development within private parcels will design stormwater facilities on a parcel-by-parcel basis and will submit detailed stormwater management plans as part of site grading permit approvals. The impervious area percentages vary parcel by parcel as per the master plan. Preliminary calculations for the proposed development parcels range from 40% to 100% impervious. This percent imperviousness may be refined as each phase is developed during the detailed design. However, the intent is to increase the quantity of pervious surfaces from the existing condition to help promote infiltration and evapotranspiration, as well as further reduce stormwater runoff rates and volumes. Proposed natural landscapes areas would be planted with a wide variety of native species with a focus on habitat creation and stormwater treatment functions.

The attached Stormwater Evaluation Form serves as a high-level summary of the entire development area. Each parcel would be designed to meet the GSI Plan requirements and submit a Stormwater Evaluation Form and updated, detailed stormwater management plan as part of the grading permit application process. At the master plan level, each parcel is considered its own drainage management area (DMA). DMAs shown are schematic in nature and would be refined at the time of grading permit application to align with legal parcel boundaries. Refer to Sheet 3.19 for the Conceptual Stormwater Control Plan which includes the proposed DMAs, preliminary stormwater treatment facility areas, and notes on source control measures, site design measures, biotreatment soil requirements and stormwater controls.

Treatment area calculations are based on the “4% Rule” which represents a simplified sizing method based on runoff from 0.2 inches per hour intensity rainfall. The project will meet all treatment requirements by implementing green infrastructure strategies suggested by the SCVURPPP Green Stormwater Infrastructure Handbook which may include bioretention, flow-through planters, suspended

pavement systems, pervious paving, and/or green roofs, and possibly rainwater harvesting or infiltration facilities. Typical standard details for these stormwater management strategies are shown in Appendix A Sheet C3.3. Minimum indicative treatment areas assuming treatment is achieved through flow-through planters are shown in Appendix A Sheet C3.1.

11.3.6. Permitting

A Stormwater Control Plan (SCP) will be submitted as part of future grading and drainage permits. Table 11.1 below lists the Entitlement Stormwater Plan Preparation Checklist items which are included as part of this submittal

Table 11.1: City of San José Entitlement Stormwater Plan Preparation Checklist

Type of Info	Plan, Notes, Tables, Details and Calculation Requirements	Zoning	Development Permit	Provided in this submittal
Design/Calcs	Conceptual drainage and treatment areas	X		X
Design/Calcs	4% Drainage Management Area (DMA) sizing calculations (based on general tributary)	X		X
Design/Calcs	Pervious and Impervious Surface Comparison Table	X	X	X
Information/Notes	Treatment Control Measure Summary Table	X	X	X
Information/Notes	Hydromodification notes (if applicable)	X	X	X
Information/Notes	Special Project Worksheet and Narrative	X	X	N/A
Information/Notes	Site Conditions Table	X	X	X
Information/Notes	Standard San José treatment details	X	X	X
Information/Notes	Source Control Measures notes	X	X	X
Information/Notes	Site Design Measures notes	X	X	X
Design/Calcs	Drainage management and treatment areas based on Design Development Plan (DDP)		X	
Design/Calcs	DMA sizing calculations (based on assumed tributary on DDP)		X	X
Design/Calcs	Hydromodification design (if applicable)		X	N/A
Design/Calcs	Identification of critical storm drain locations, rims, and inverts		X	
Information/Notes	Landscape Plans showing appropriate biotreatment planting		X	
Information/Notes	Biotreatment Soil Requirements		X	X
Information/Notes	Bioretention and Flow Through Planter notes		X	
Information/Notes	Standard Stormwater Control notes		X	X
Maintenance	Routine maintenance activities and notes for treatment control measures		X	
Maintenance	Operation and Maintenance Information Table		X	

11.3.7. Stormwater Management Phasing

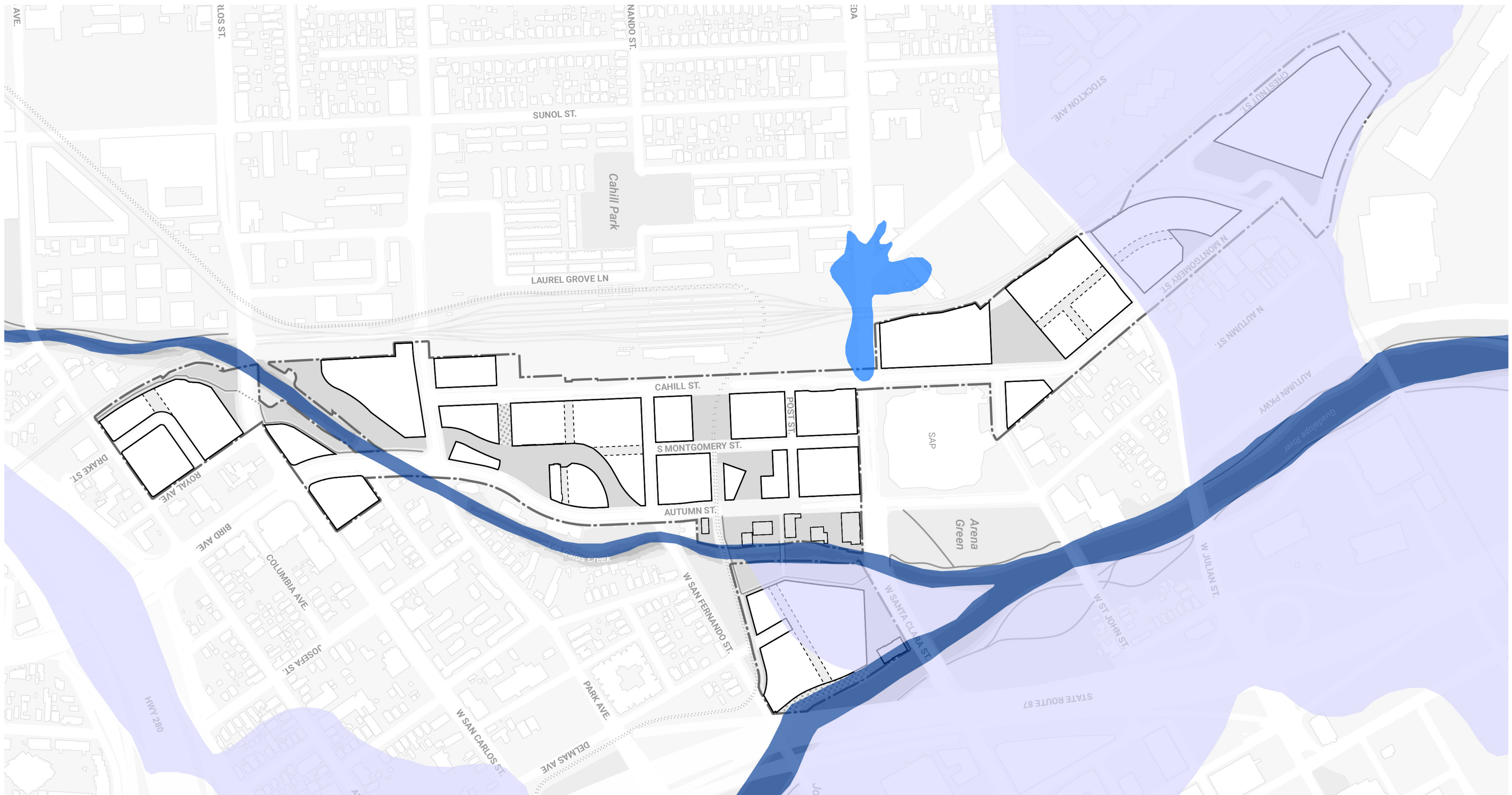
The project would design and install the new stormwater treatment facilities based on the principle of adjacency and as needed to facilitate a specific proposed Development Phase. These facilities would provide treatment in accordance with GSI standards. The project will ensure that all treatment facilities must be fully operational prior to completion of private parcel developments and acceptance of public ROW improvements by the City. Stormwater runoff from private parcels and construction of treatment facilities would be managed on a parcel-by-parcel basis.

11.3.8. Ownership and Maintenance

The project applicant will be responsible for maintenance of stormwater management facilities within private parcels. It is anticipated that the City would be responsible for maintenance of stormwater management infrastructure improvements installed by the applicant within the public ROW upon acceptance.

Appendix A

Draft Infrastructure Plans



Legend

- Development Boundary
- ▭ Proposed Buildings
- ▭ Open Space

FEMA Flood Zones

- ▭ Zone A
- ▭ Zone AO
- ▭ Zone X
- ▭ Zone D

Notes:

1. Building finish floor elevations will be a minimum of 1-ft above the mapped 100-yr flood plain or as required by City of San Jose code.
2. Finish floor elevations depicted are based on preliminary study. Grading alternatives are under review and finish floor elevations may be revised until the time of the Building Permit application.

Flood Zone Notes:

- Zone A: An area inundated by 1% annual chance flooding, for which no BFEs have been determined.
- Zone AO: An area inundated by 1% annual chance flooding (usually sheet flow on sloping terrain), for which average depths have been determined; flood depths range from 1 to 3 feet.
- Zone X: Areas determined to be outside 500-year floodplain determined to be outside the 1% and 0.2% annual chance floodplains.
- Zone D: An area of undetermined but possible flood hazards.



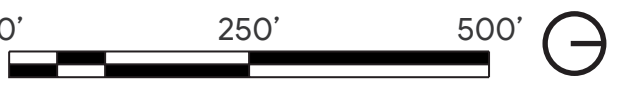
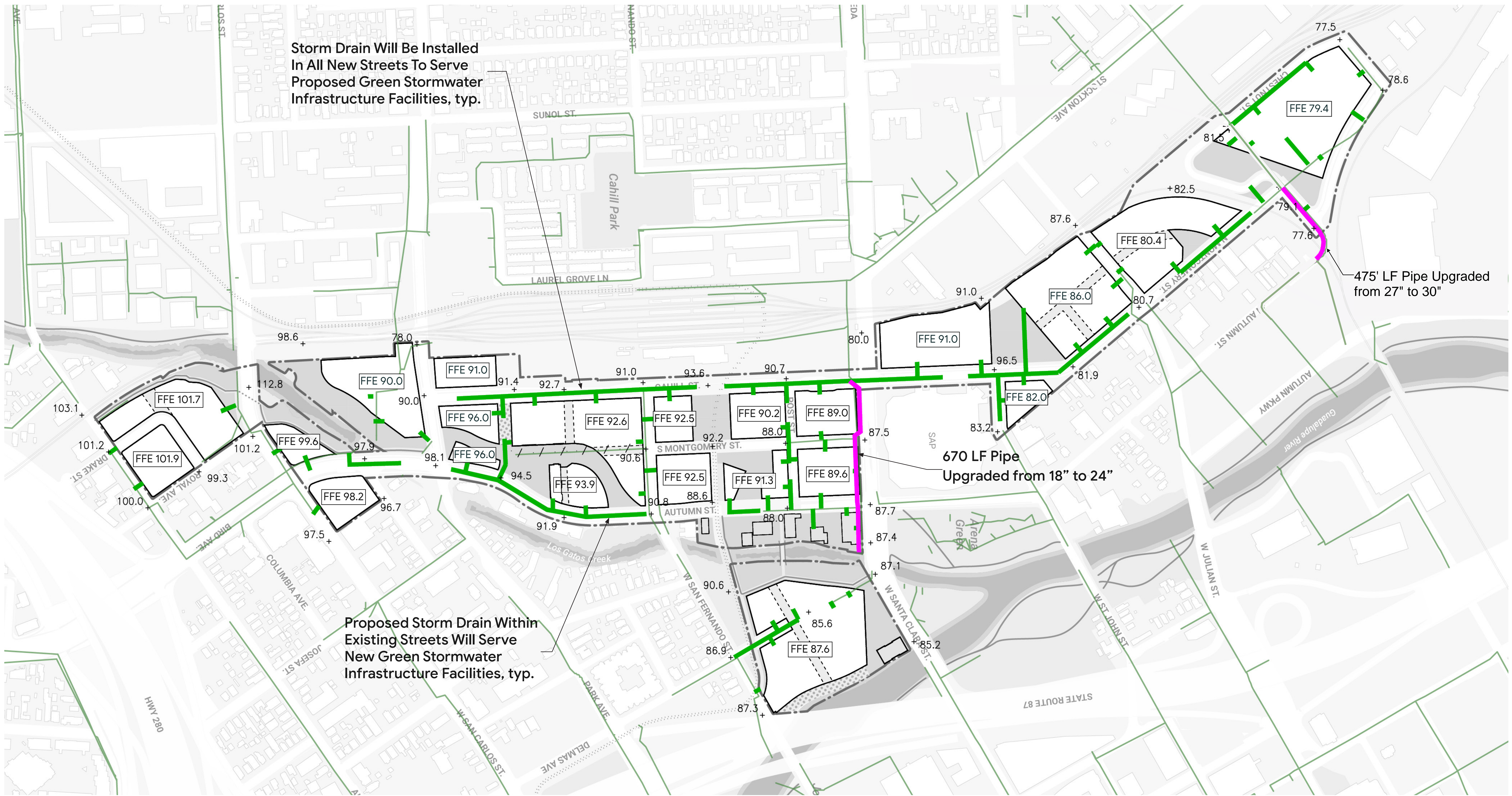
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C1.1

FEMA Flood Hazard Zones

Downtown West Mixed-Use Plan

4/20/2020



- Legend**
- XX.X + Existing Grade
 - Proposed Storm Drain
 - Existing Storm Drain
 - Development Boundary
 - Demo & Remove Existing Storm Drain
 - Proposed Buildings
 - Open Space
 - Anticipated Existing Storm Drain Pipe Upgrades

- Notes:**
1. Existing utility locations are approximate and shown for reference only. Additional utility survey is required to determine exact pipe structure locations.
 2. New storm drain will be constructed per City of San José requirements.
 3. No new creek outfalls are proposed.
 4. Building finish floor elevations will be a minimum of 1-ft above the mapped 100-yr flood plain or as required by City of San Jose code.
 5. Finish floor elevations depicted are based on preliminary study. Grading alternatives are under review and finish floor elevations may be revised until the time of the Building Permit application.
 6. Utility layouts are conceptual and may be revised to reflect final development requirements.
 7. Refer to Infrastructure Framework Section 11 - Storm Drain System for further information.
 8. Anticipated existing storm drain pipe upgrades based on modeling previously prepared for the DSAP. Final modeling required to confirm.



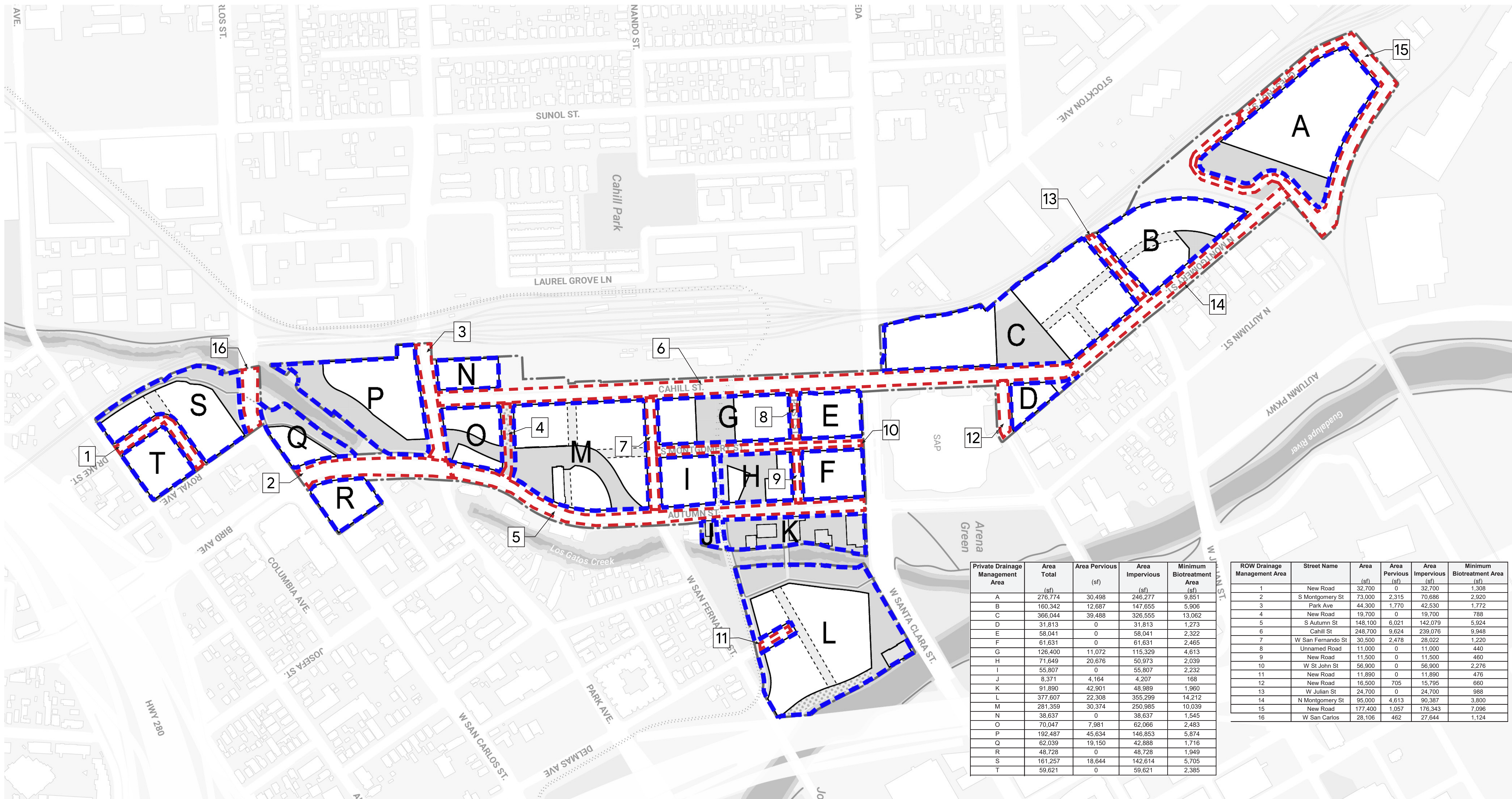
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C2.1

Grading & Drainage

Downtown West Mixed-Use Plan

4/20/2020



Private Drainage Management Area	Area Total (sf)	Area Pervious (sf)	Area Impervious (sf)	Minimum Biotreatment Area (sf)
A	276,774	30,498	246,277	9,851
B	160,342	12,687	147,655	5,906
C	366,044	39,488	326,555	13,062
D	31,813	0	31,813	1,273
E	58,041	0	58,041	2,322
F	61,631	0	61,631	2,465
G	126,400	11,072	115,329	4,613
H	71,649	20,676	50,973	2,039
I	55,807	0	55,807	2,232
J	8,371	4,164	4,207	168
K	91,890	42,901	48,989	1,960
L	377,607	22,308	355,299	14,212
M	281,359	30,374	250,985	10,039
N	38,637	0	38,637	1,545
O	70,047	7,981	62,066	2,483
P	192,487	45,634	146,853	5,874
Q	62,039	19,150	42,888	1,716
R	48,728	0	48,728	1,949
S	161,257	18,644	142,614	5,705
T	59,621	0	59,621	2,385

ROW Drainage Management Area	Street Name	Area (sf)	Area Pervious (sf)	Area Impervious (sf)	Minimum Biotreatment Area (sf)
1	New Road	32,700	0	32,700	1,308
2	S Montgomery St	73,000	2,315	70,686	2,920
3	Park Ave	44,300	1,770	42,530	1,772
4	New Road	19,700	0	19,700	788
5	S Autumn St	148,100	6,021	142,079	5,924
6	Cahill St	248,700	9,624	239,076	9,948
7	W San Fernando St	30,500	2,478	28,022	1,220
8	Unnamed Road	11,500	0	11,500	440
9	New Road	11,500	0	11,500	460
10	W St John St	56,900	0	56,900	2,276
11	New Road	11,890	0	11,890	476
12	New Road	16,500	705	15,795	660
13	W Julian St	24,700	0	24,700	988
14	N Montgomery St	95,000	4,613	90,387	3,800
15	New Road	177,400	1,057	176,343	7,096
16	W San Carlos	28,106	462	27,644	1,124

Legend

- Private Drainage Management Area
- Right of Way (ROW) Drainage Management Area
- Development Boundary
- Proposed Buildings
- Open Space

Notes:

1. Public streets which are modified and trigger treatment requirements per the GSI Plan will be designed to incorporate stormwater treatment facilities in the public ROW.
2. Private parcels will meet all stormwater management requirements per the GSI Plan.
3. Refer to Infrastructure Framework Section 12 - Stormwater Management for further information.
4. Biotreatment areas shown are sized using the '4% drainage management area calculation' and area sized to a minimum of 4% of the contributing DMA's impervious area.
5. Refer to the attached Stormwater Evaluation Form for the following stormwater plan items: Pervious and impervious surface comparison table; treatment control measure summary table; site conditions table; source control measures; site design measures.
6. Biotreatment soil mix shall meet all specifications per the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP) C.3 Handbook Appendix C. Biotreatment soil shall have sufficient permeability to infiltrate runoff at a minimum rate of 5 inches per hour during the life of the facility and have sufficient moisture retention to support healthy vegetation. These requirements are consistent with the Municipal Regional Permit (MRP).

Project Site Information:

1. Soils Type: Clay Loam (D)
2. Groundwater Depth: 10 - 46 ft
3. Name of Receiving Body: Los Gatos Creek, Guadalupe River
4. Flood Zone: Undetermined (Zone D)
5. Flood Elevation (if applicable): n/a



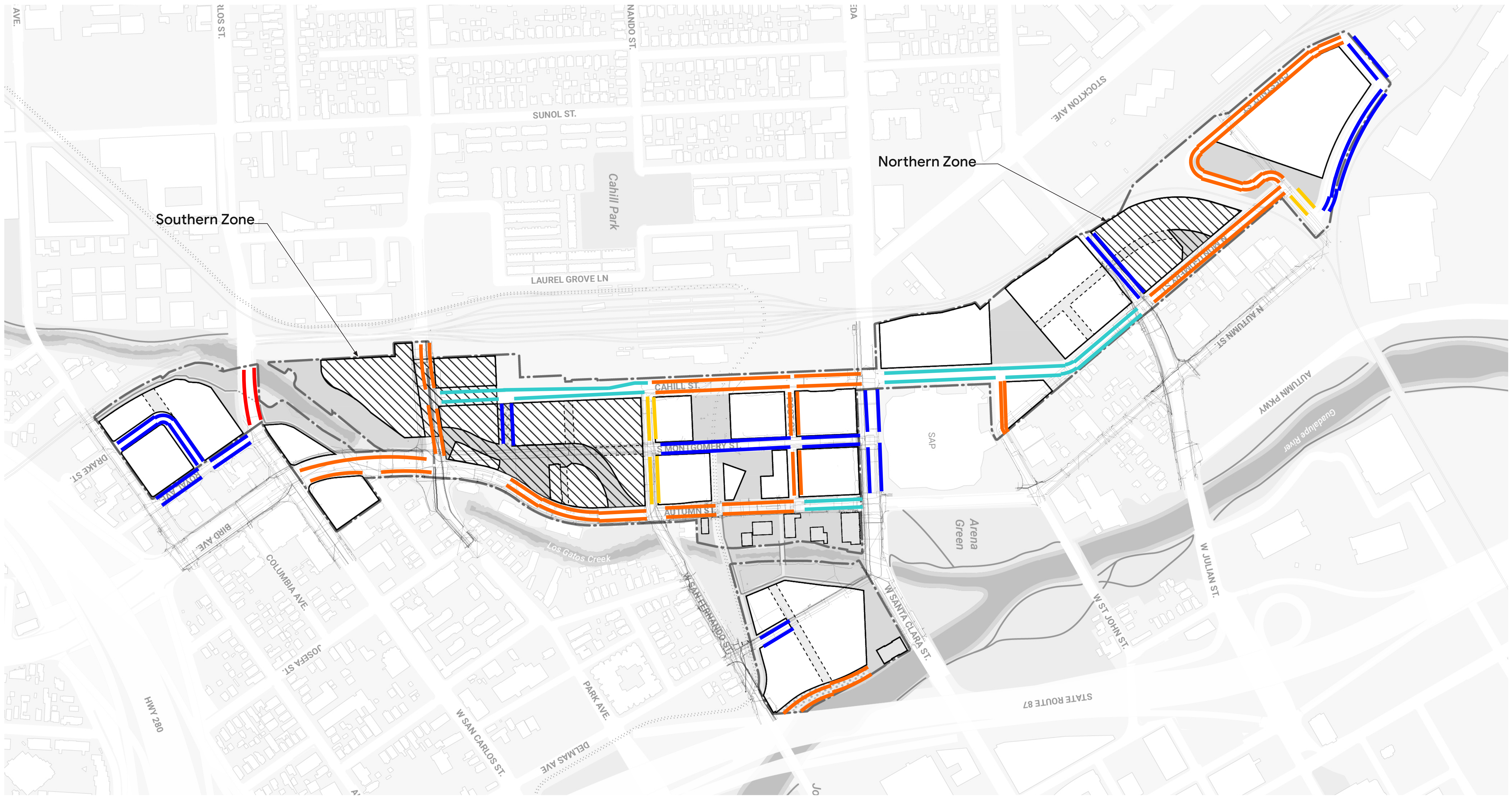
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C3.1

Stormwater Management Plan

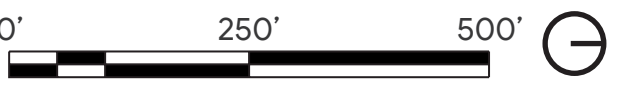
Downtown West Mixed-Use Plan

4/20/2020



LEGEND
 Approximate percent of linear street frontage required for biofiltration facilities.

—	10-19%
—	20-29%
—	30-39%
—	40-49%
—	> 50%



C3.2

Stormwater Management Plan: Public ROW Downtown West Mixed-Use Plan

4/20/2020

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MINIMUM MATERIAL THICKNESS (IN) GUIDANCE:

LAYER	MATERIAL TYPE*	MODERATE VEHICULAR		LIGHT VEHICULAR		PEDESTRIAN	
		GOOD SOILS**	POOR SOILS**	GOOD SOILS**	POOR SOILS**	GOOD SOILS**	POOR SOILS**
A	PERVIOUS CONCRETE	9	9.5	6.5	7	4.5	5
B	BASE COURSE ASTM NO. 3 OR 57	6	6	6	6	6	6
C	OPTIONAL RESERVOIR COURSE ASTM NO. 2, 3, OR 57	-	-	-	-	-	-

CONSTRUCTION NOTES:

- SEE PERVIOUS CONCRETE SPECIFICATIONS FOR WEARING COURSE, PAVEMENT BASE, SUBGRADE, AND OTHER REQUIREMENTS FOR PERVIOUS CONCRETE FACILITIES.
- MINIMUM UTILITY SETBACKS AND PROTECTION MEASURES MUST CONFORM TO MUNICIPAL UTILITY STANDARDS AND OTHER UTILITY PROVIDER REQUIREMENTS. COORDINATE WITH ENGINEER IN THE EVENT OF UTILITY CROSSINGS AND UTILITY CONFLICTS.
- IF UNDERDRAIN IS REQUIRED, DESIGN AND PLACEMENT IS PER ENGINEER'S RECOMMENDATION. SEE PC 3.1-3.4.
- SEE PC 1.1-1.6 FOR EDGE TREATMENT.

GREEN INFRASTRUCTURE TYPICAL DETAILS
DETAIL ADAPTED FROM SAN FRANCISCO PUBLIC UTILITIES COMMISSION PP 3.1

PERVIOUS PAVEMENT MATERIAL SECTIONS PERVIOUS CONCRETE

DATE: SEPTEMBER 2019
SCALE: 1.0
REV: NONE

NO. 00
PP
3.1

CONSTRUCTION NOTES:

- AVOID COMPACTION OF EXISTING SUBGRADE BELOW PLANTER DURING CONSTRUCTION.
- SCARIFY SUBGRADE TO A DEPTH OF 3 INCHES (MIN) IMMEDIATELY PRIOR TO PLACEMENT OF CALTRANS CLASS 2 PERMEABLE AGGREGATE AND BIOTREATMENT SOIL MATERIAL.
- MAXIMUM DROP FROM TOP OF CURB TO TOP OF BIOTREATMENT SOIL SHALL INCLUDE CONSIDERATIONS FOR BIOTREATMENT SOIL SETTLEMENT.
- IMPERMEABLE LINER SHALL ONLY BE USED WHEN SITE CONDITIONS REQUIRE USE.
- INSTALL BIOTREATMENT SOIL MEDIA (BSM) IN EITHER TWO 10" LIFTS AND THEN WETTED TO ACCOMMODATE AN EXPECTED 2" OF SETTLING OR THREE 6" LIFTS THEN WETTED WITH ADDITIONAL BSM ADDED TO THE SURFACE AS NEEDED TO ACHIEVE A FINAL DEPTH OF 18".
- WOOD MULCH AND ROCK MULCH OPTIONS DISCUSSED IN SCVURPPP GSI HANDBOOK LANDSCAPE SECTION.

GREEN INFRASTRUCTURE TYPICAL DETAILS
DETAIL ADAPTED FROM SAN FRANCISCO PUBLIC UTILITIES COMMISSION BP 3.2

BIORETENTION PLANTER STORMWATER PLANTER WITHOUT PARKING SECTIONS

DATE: SEPTEMBER 2019
SCALE: 1.0
REV: NONE

NO. 00
BP
3.2

CONSTRUCTION NOTES:

- CHECK DAMS (IF NEEDED) SHALL BE SPACED TO PROVIDE PONDING PER SITE SPECIFIC DESIGN.
- SLOPE TOP OF PLANTER WALL TO MATCH LONGITUDINAL SLOPE OF ADJACENT SURFACE.
- LAY OUT DRAINAGE NOTCHES TO PREVENT PONDING BEHIND PLANTER WALL WITH 5' MAXIMUM SPACING BETWEEN NOTCHES.
- PROVIDE ONE CLEANOUT PER PLANTER (MIN) FOR FACILITIES WITH UNDERDRAINS.
- MINIMUM UTILITY SETBACKS AND PROTECTION MEASURES MUST CONFORM TO CURRENT MUNICIPAL STANDARDS OR SEE SCVURPPP GSI HANDBOOK UTILITY COORDINATION SECTION FOR GUIDANCE. COORDINATE WITH ENGINEER IN THE EVENT OF UTILITY CROSSING AND UTILITY CONFLICTS.

GREEN INFRASTRUCTURE TYPICAL DETAILS
DETAIL ADAPTED FROM SAN FRANCISCO PUBLIC UTILITIES COMMISSION BP 3.1

BIORETENTION PLANTER STORMWATER PLANTER WITHOUT PARKING PLAN

DATE: SEPTEMBER 2019
SCALE: 1.0
REV: NONE

NO. 00
BP
3.1

NOTES TO DESIGNER:

- This design detail should be adapted to your specific engineered design and its respective installation.
- Green inlets are the most typical inlet used for stormwater tree trenches. While a highway grade type green inlet is depicted and preferred, designers may use a PWD Standard city inlet type as the green inlet if there are utility conflicts or other constraints that preclude installation of a highway grade inlet type.
- The minimum tree pit dimension is 3-feet by 3-feet. Larger tree pit areas are preferred for the health of the tree and should be used if space is available. Tree pit may also be rectangular in shape.
- Design should include the number, spacing, and species selection of trees. The City of Philadelphia's Complete Streets Design Handbook provides a Street Tree Planting Diagram that can be referenced for tree placement. Note that locations and species of all trees are reviewed and approved by PP&R. PP&R can also select tree species, if requested.
- Although surface is shown as concrete sidewalk, tree trenches can be constructed in conjunction with various surfaces including grass strips, pavers, and other materials. Surface restoration will vary accordingly.

APPLICABLE DESIGN COMPONENTS

- (L) Landscaping
 - 5.2.1 Trees
 - 5.3.1 Mulch
- (MS) Media Separation
 - 8.1.1 Gravel/Filter
 - 8.2.1 Sand Filter
- (P) Piping
 - 9.1.1 Underdrain
 - 9.1.2 Distribution Pipe
 - 9.2.2 Anti-seep Collar
 - 9.3.1 Cleanout
- (PM) Planting Media
 - 6.1.1 Engineered Soil
- (FR) Pre-treatment
 - 3.1.1 Filter Insert
- (SE) Stormwater Entrance
 - 2.2.1 Green Inlet
- (SM) Storage Media
 - 7.1.1 Stone

Green Streets

City of Philadelphia
GREEN STREETS DESIGN MANUAL

Stormwater Tree Trench

DATE: SEPTEMBER 2019
SCALE: 1.0
REV: NONE

NO. 00
TT-01
2014
Page 6

CONSTRUCTION NOTES:

- AVOID COMPACTION OF EXISTING SUBGRADE BELOW BASIN.
- SCARIFY SUBGRADE TO A DEPTH OF 3 INCHES (MIN) IMMEDIATELY PRIOR TO PLACEMENT OF CALTRANS CLASS 2 PERMEABLE AGGREGATE AND BIOTREATMENT SOIL MATERIALS.
- COMPACT NATIVE SOIL IMMEDIATELY BEHIND CURB TO 90% OF MAXIMUM DENSITY PER STANDARD PROCTOR TEST (ASTM D698).
- UNDERDRAIN REQUIRED FOR ALL FACILITIES WITH IMPERMEABLE LINER.
- PROVIDE ONE CLEANOUT PER BIORETENTION AREA (MIN) FOR FACILITIES WITH UNDERDRAINS.
- MINIMUM UTILITY SETBACKS AND PROTECTION MEASURES MUST CONFORM TO CURRENT MUNICIPAL ASSET PROTECTION STANDARDS. COORDINATE WITH ENGINEER IN THE EVENT OF UTILITY CROSSING AND UTILITY CONFLICTS.
- GEOLOGICAL ENGINEER TO DETERMINE IF LINER SHALL BE USE FOR PROTECTION OF ADJACENT STRUCTURES.
- ANGLE OF REPOSE MAY VARY BASED ON GEOTECHNICAL ENGINEER RECOMMENDATIONS.
- INSTALL BIOTREATMENT SOIL MEDIA (BSM) IN EITHER TWO 10" LIFTS AND THEN WETTED TO ACCOMMODATE AN EXPECTED 2" OF SETTLING OR THREE 6" LIFTS THEN WETTED AND SUPPLEMENTED WITH ADDITIONAL BSM AS NEEDED TO ACHIEVE A FINAL DEPTH OF 18".
- WOOD MULCH AND ROCK MULCH OPTIONS DISCUSSED IN SCVURPPP GSI HANDBOOK LANDSCAPE SECTION 3.6.9.

GREEN INFRASTRUCTURE TYPICAL DETAILS
DETAIL ADAPTED FROM SAN FRANCISCO PUBLIC UTILITIES COMMISSION BB 2.1

BIORETENTION AREA ROADSIDE SECTION

DATE: SEPTEMBER 2019
SCALE: 1.0
REV: NONE

NO. 00
BB
2.1

CONSTRUCTION NOTES:

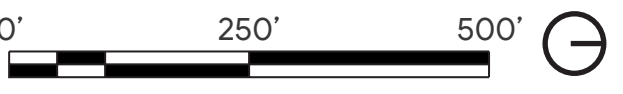
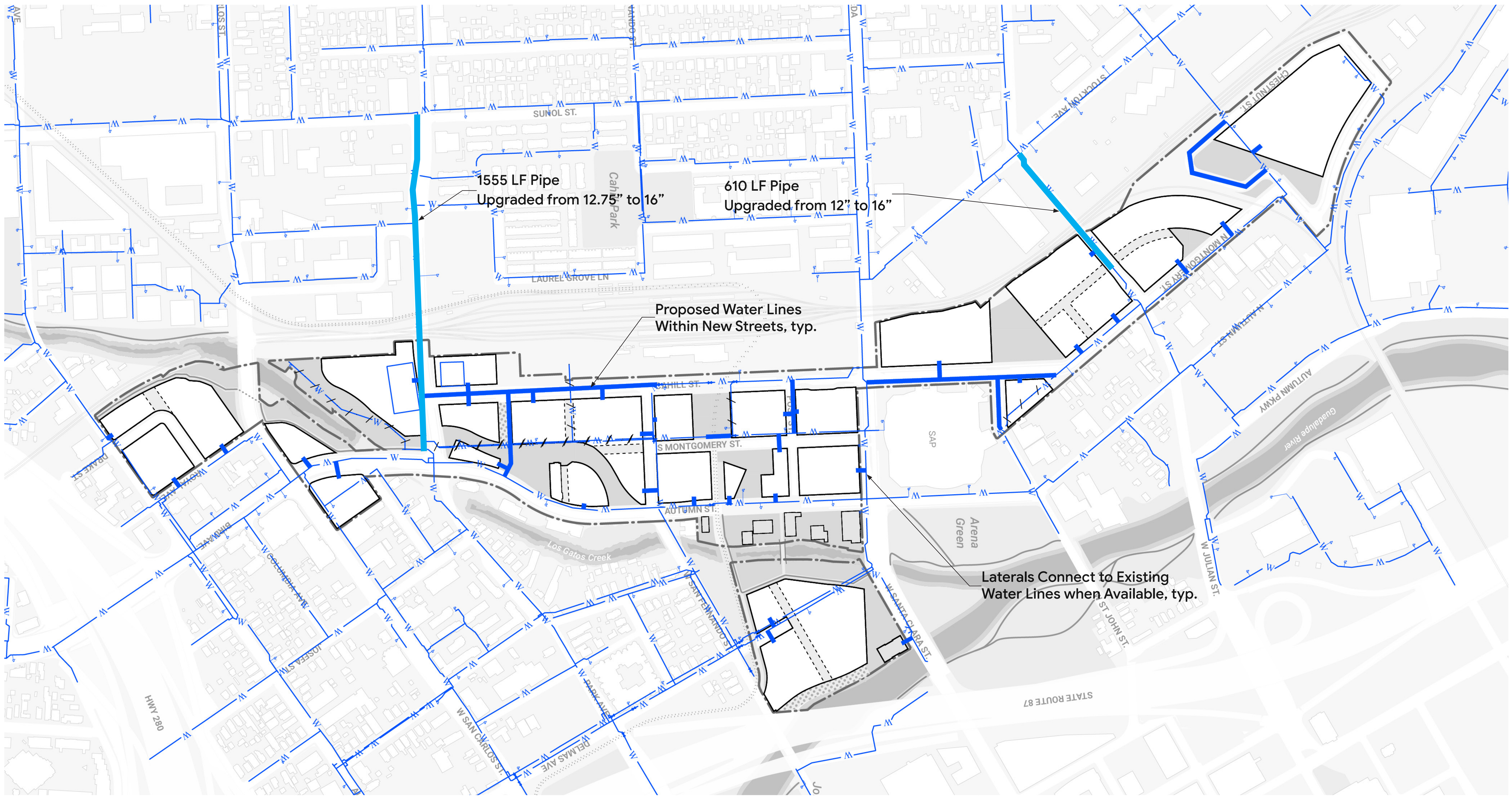
- SEE ARCH DWGS FOR PROTECTION MAT, WATERPROOF MEMBRANE, ELECTRONIC LEAK DETECTION & ROOF DECK
- DECK SLOPES TO DRAIN SEE ARCH DWGS

TYPICAL LIVING ROOF

SCALE: 3"=1'-0"

DATE: SEPTEMBER 2019
SCALE: 1.0
REV: NONE

NO. 00
BB
2.1



- Legend**
- Proposed Water
 - 2017 DSAP Utility Analysis Proposed Upgrades
 - W- Existing Water
 - Development Boundary
 - Abandon Water Lines (work by SJWC)
 - Proposed Buildings
 - Open Space

- Notes:**
1. Existing utility locations are approximate and shown for reference only. Additional utility survey is required to determine exact pipe structure locations.
 2. All new water mains will be constructed by the San José Water Company.
 3. New fire hydrants will be located per San José Fire Department requirements.
 4. Utility layouts are conceptual and may be revised to reflect final development requirements.
 5. Refer to Infrastructure Framework Section 8 - Potable Water System for further information.

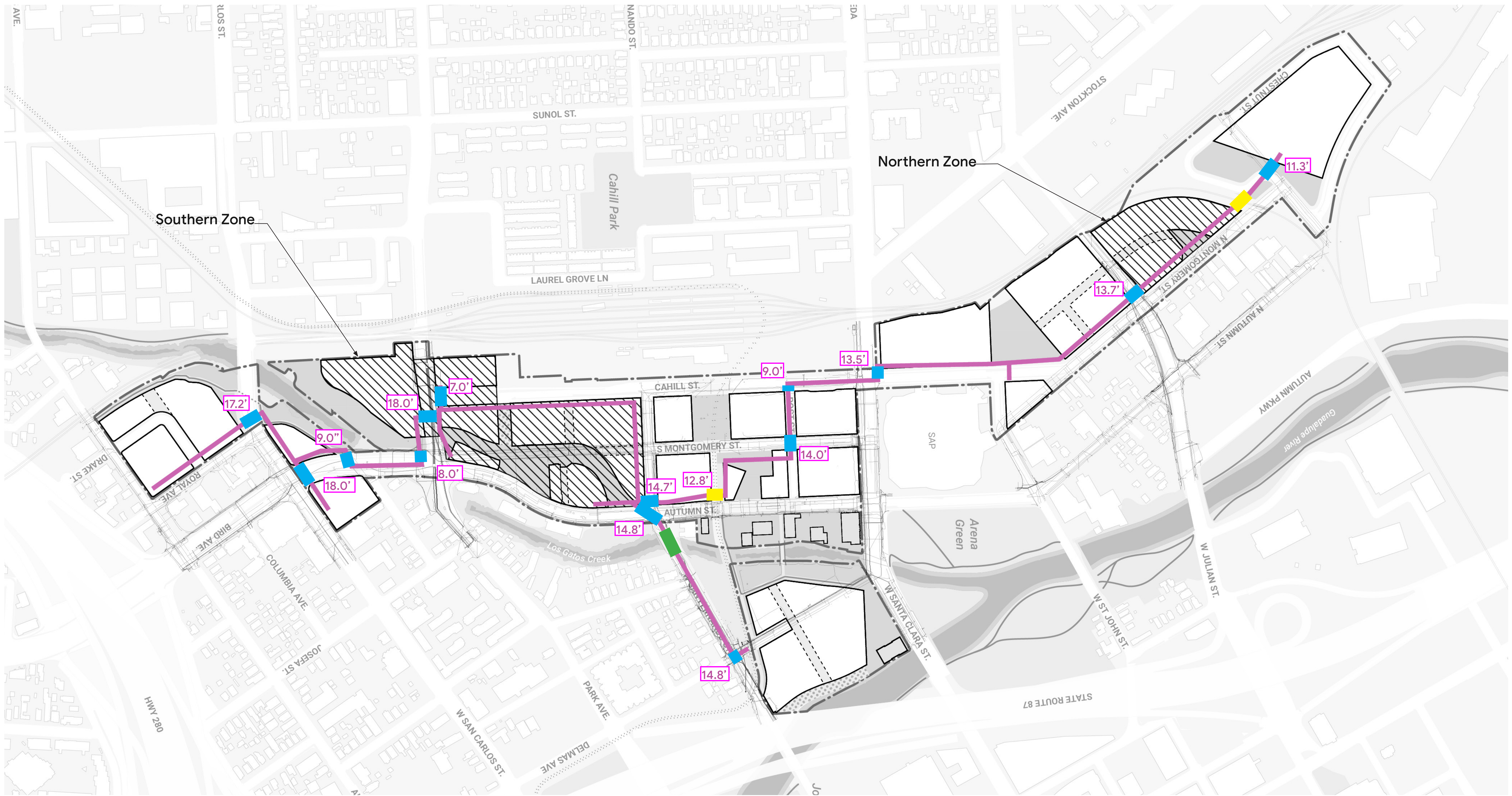


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 Pre-Decisional Draft - For Review Only

C4.1

Domestic & Fire Water Downtown West Mixed-Use Plan

4/20/2020

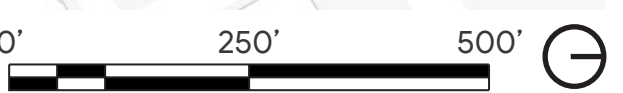


Legend

- Hybrid Utilidor
 - Development Boundary
 - Proposed Buildings
 - Open Space
 - Indicative Location for District Infrastructure
 - Los Gatos Creek Crossing
 - Rail Crossing
 - ROW Crossing
- ##.# Depth to Top of Corridor

Notes:

1. The following typologies are under consideration for the distribution of district utilities: direct bury, utility tunnel and within below grade Google-owned structures.
2. Utility layouts are conceptual and may be revised to reflect final development requirements.
3. Refer to Infrastructure Framework Section 1.4.2 - Utility Corridor for further information.
4. The Northern Zone may be deleted in the future depending on design progression and detailed planning.

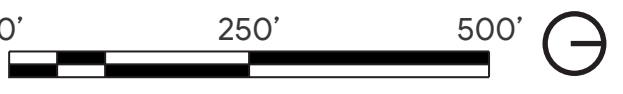
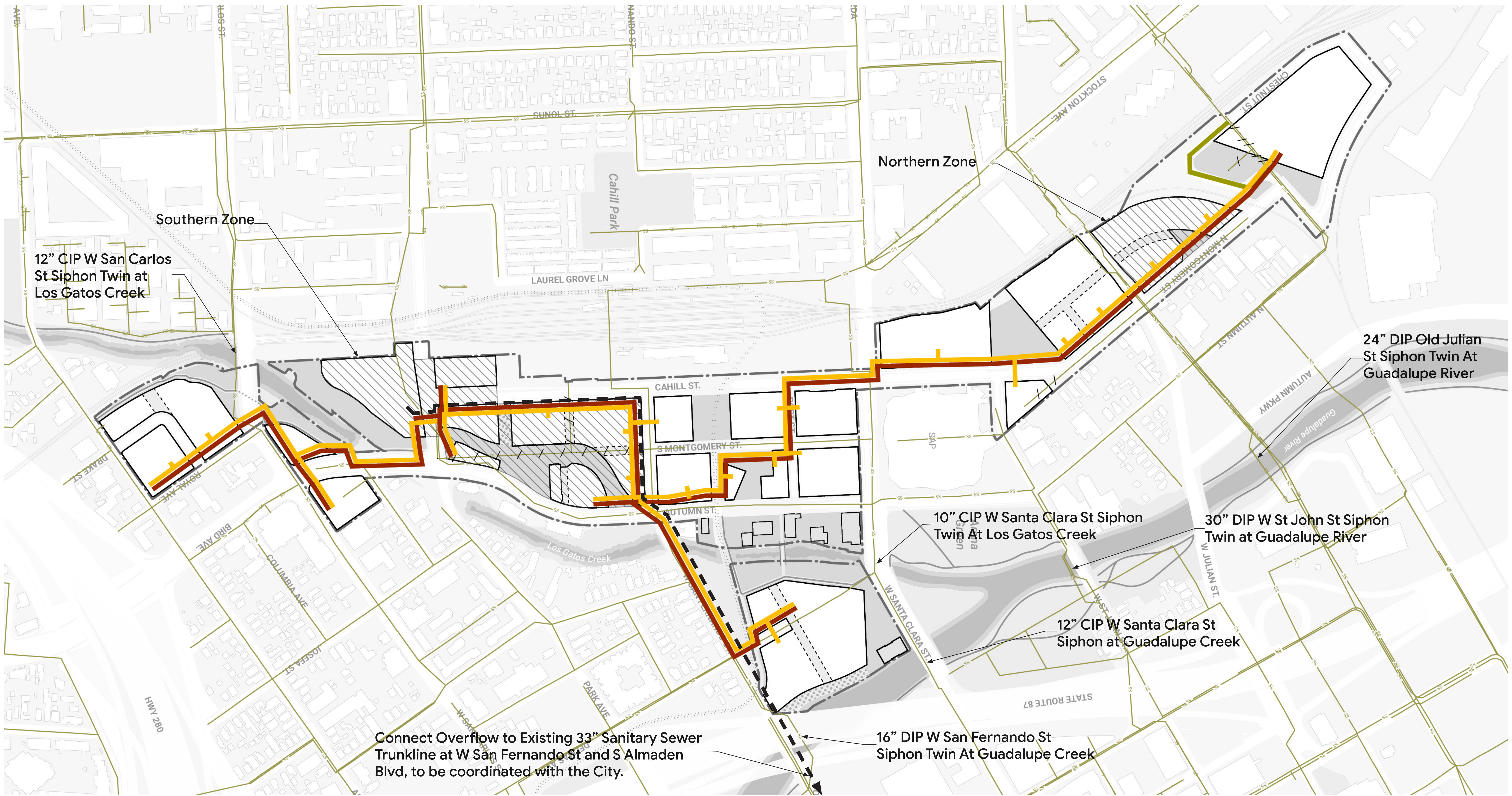


C5.1

Utilidor Plan Layout Downtown West Mixed-Use Plan

4/20/2020

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Legend

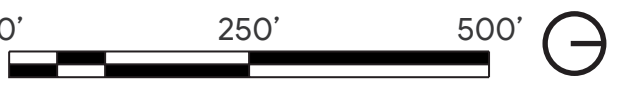
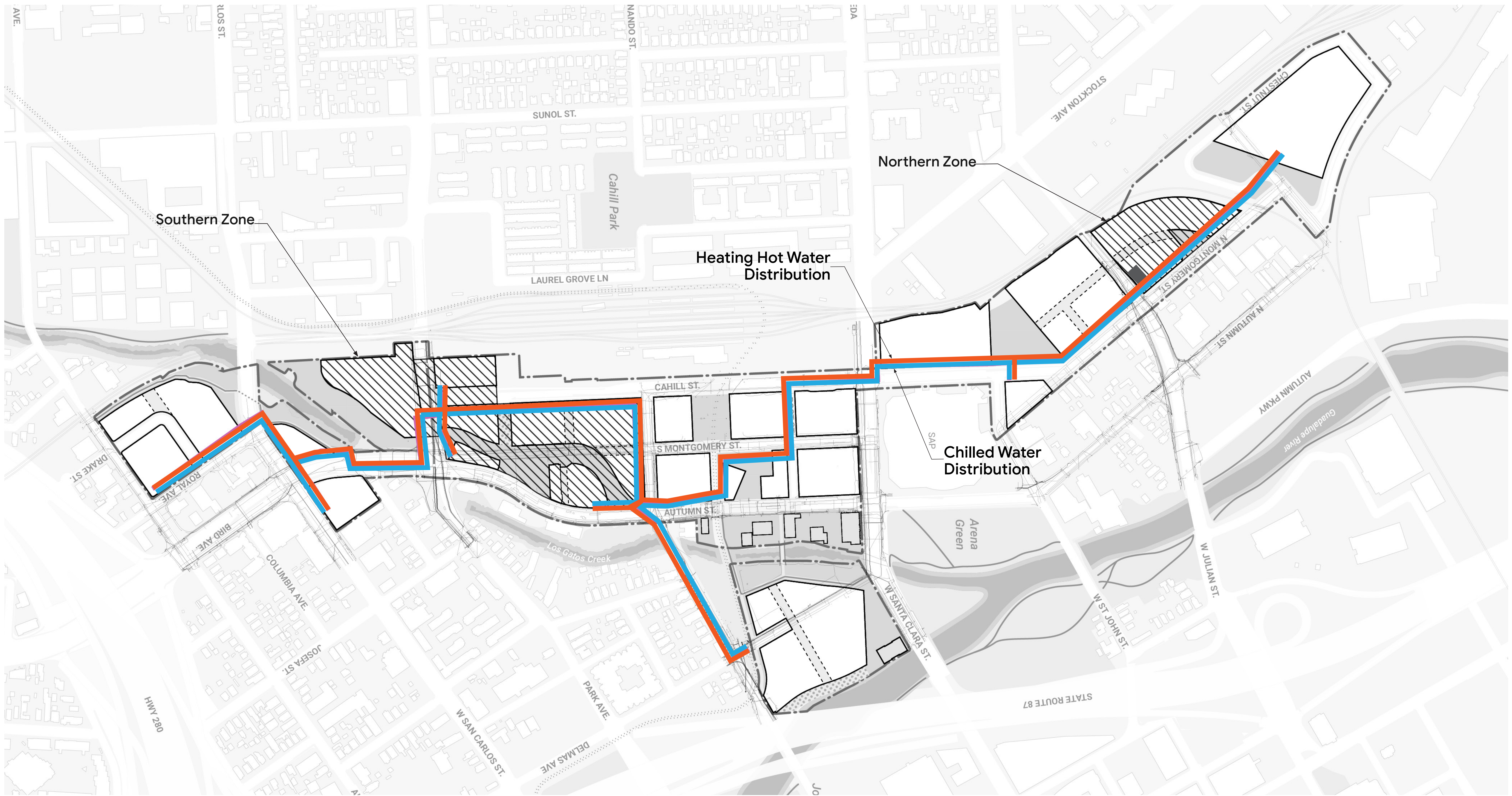
- Proposed Private Sanitary Sewer Upgrades
- Proposed Automated Waste Collection System (AWCS)
- Existing Sanitary Sewer Upgrades
- Existing Sanitary Sewer
- Development Boundary
- Demo & Remove Existing Sanitary Sewer
- Proposed Buildings
- Open Space
- Indicative Location for District Infrastructure
- Sanitary Sewer Overflow

Notes:

1. Existing utility locations are approximate and shown for reference only. Additional utility survey is required to determine exact pipe structure locations.
2. An onsite water reuse facility is proposed to support the wastewater management needs of the development. Connection with the City sanitary sewer is also under review.
3. Sanitary solids produced as a by-product of the onsite wastewater treatment processes are proposed to be managed onsite. These solids can also be pumped into the City's sanitary sewer network.
4. Utility layouts are conceptual and may be revised to reflect final development requirements.
5. Refer to Infrastructure Framework Section 9 - Sanitary Sewer System and Section 15 - Solid Waste Collection for further information.
6. The Northern Zone may be deleted in the future depending on design progression and detailed planning.



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- Legend**
- Heating Hot Water
 - Chilled Water
 - Development Boundary
 - Proposed Buildings
 - Open Space

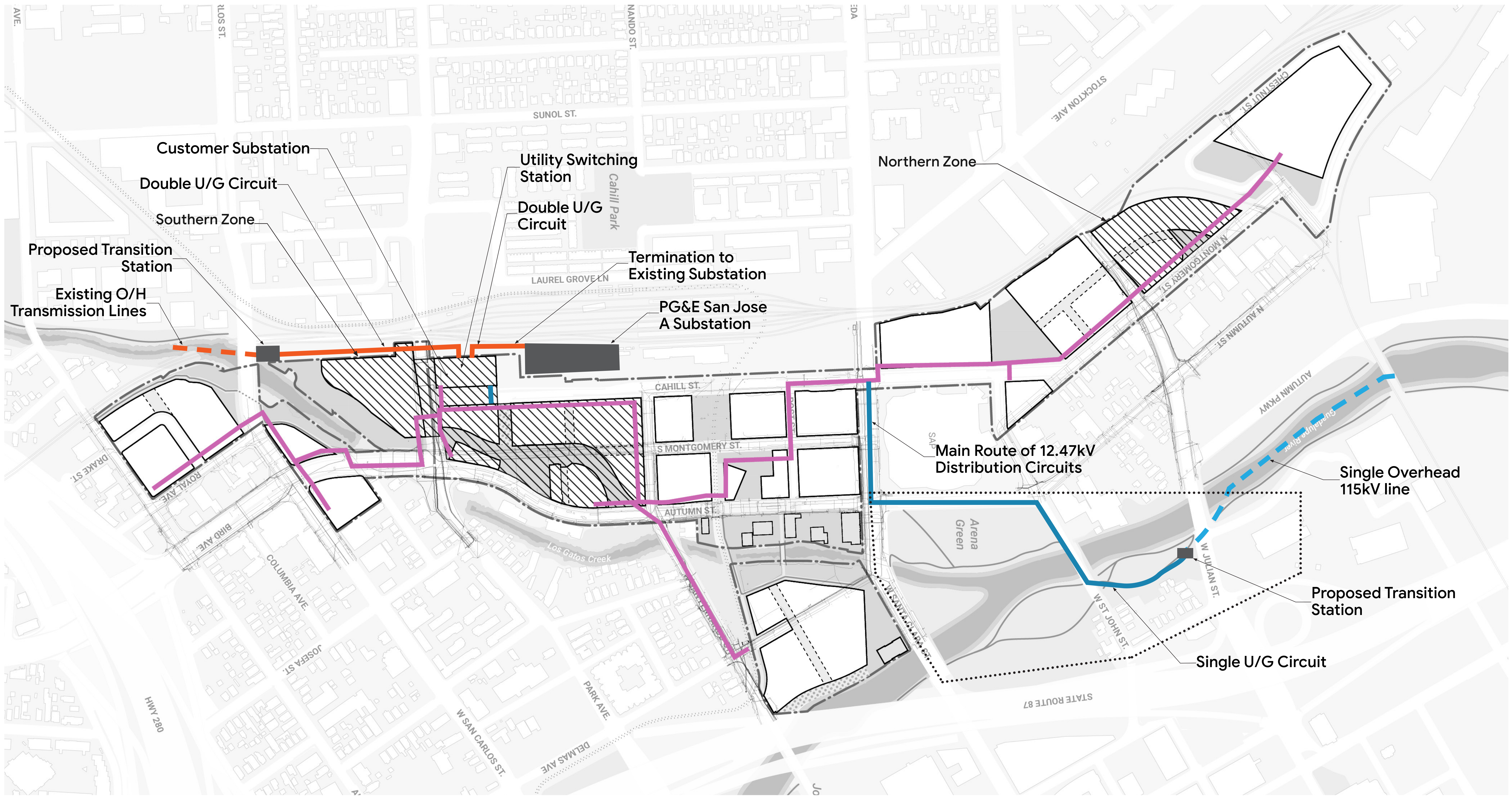


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C7.1

Thermal Energy Downtown West Mixed-Use Plan

4/20/2020



Legend

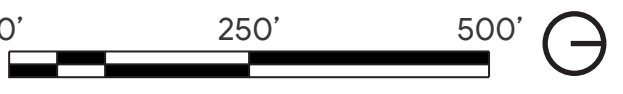
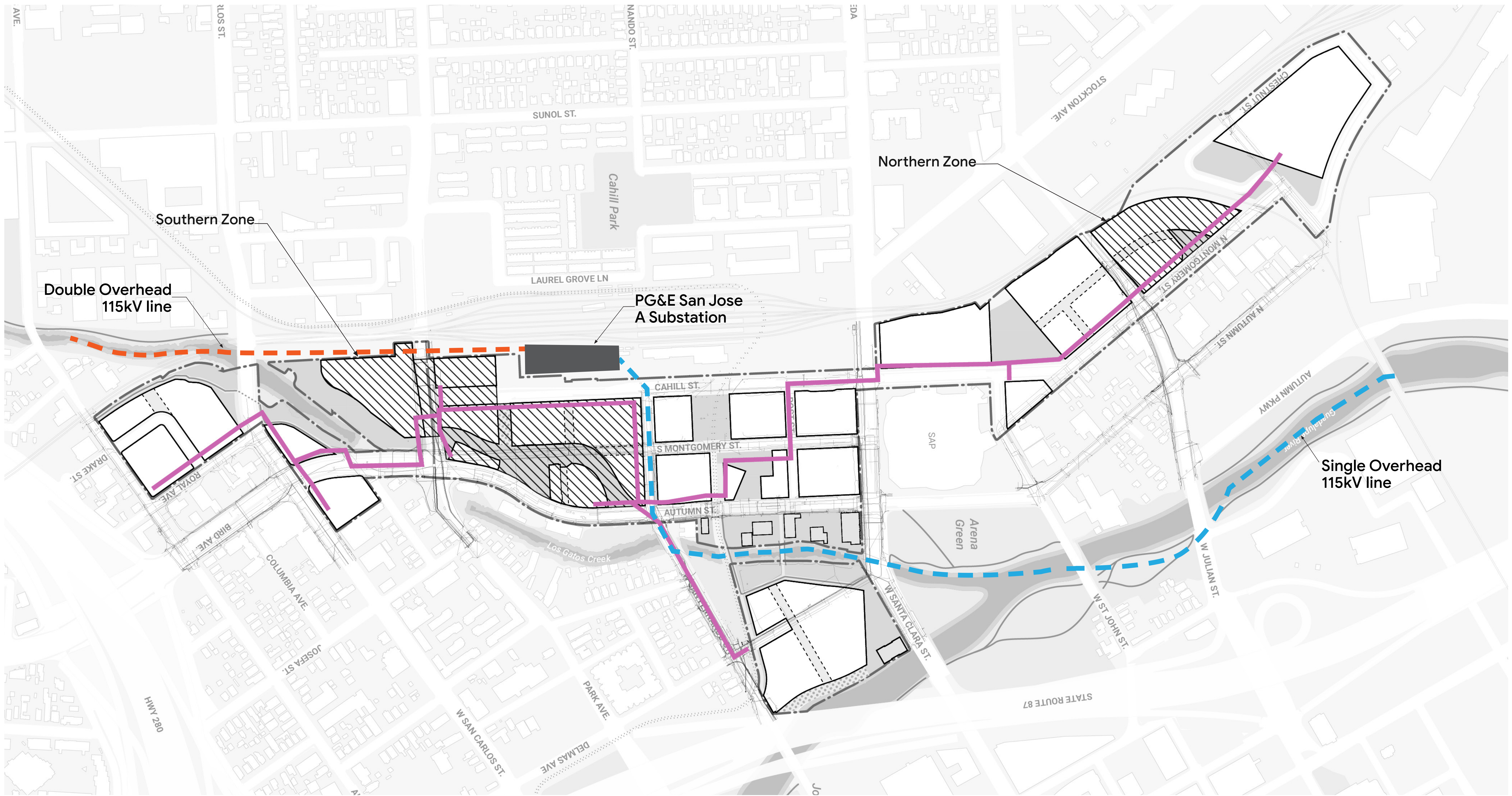
- Double U/G Circuit
- Existing Transmission Lines
- Single U/G Circuit
- Single Overhead 115 kV Line
- Hybrid Utilidor
- Development Boundary
- Proposed Buildings
- Open Space



C8.1

Electrical Power Downtown West Mixed-Use Plan 4/20/2020

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- Legend**
- Double Overhead 115 kV Line
 - Single Overhead 115 kV Line
 - Hybrid Utilidor
 - Development Boundary
 - Proposed Buildings
 - Open Space



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C8.2

Existing Transmission Corridor Downtown West Mixed-Use Plan

4/20/2020