

8. EXISTING INFRASTRUCTURE CAPACITY

The purpose of this analysis is to document the existing characteristics and conditions of the storm drainage; wastewater conveyance and wastewater treatment infrastructure that serve the Diridon / Arena Strategic Development Plan Area in San José, California.

METHODOLOGY AND ASSUMPTIONS

In order to document the characteristics and conditions of the existing utility infrastructure in the Diridon Station Area, we reviewed utility block maps and conducted interviews with technical staff at various agencies which provide utility service. Recommendations are made with respect to future investigation that is needed to verify conditions and what additional studies will be needed to evaluate the impact of the redevelopment, based on experience on similar redevelopment projects.

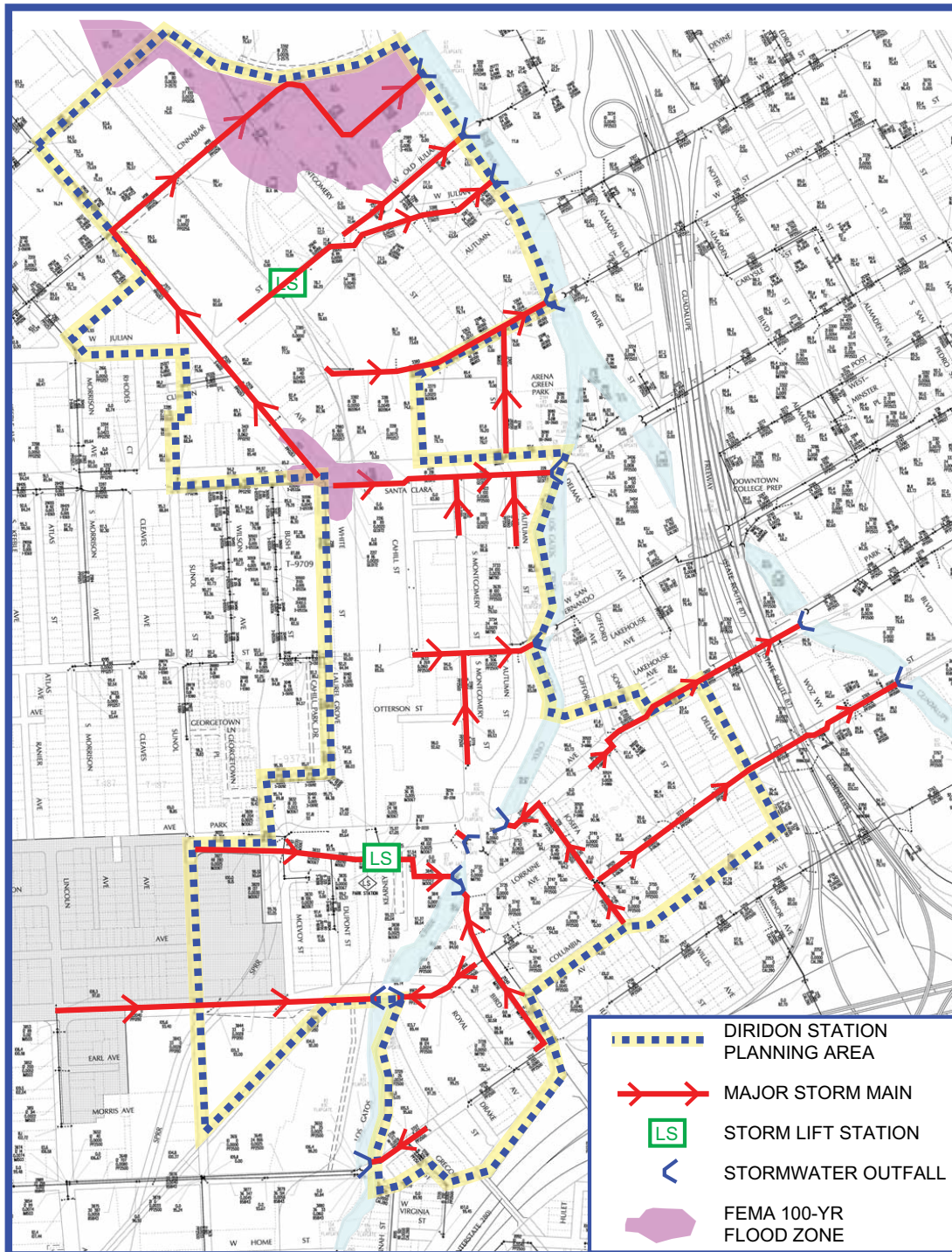
We assume that the existing infrastructure will be utilized to the greatest extent possible. To the extent that the existing infrastructure is in disrepair or does not meet the demands of the redevelopment plan, we assume that it will be replaced and upgraded with adequately sized and current technology.

8.1 Storm Drainage

Storm Drainage Facilities in the Diridon / Arena Strategic Development Plan Area are owned and maintained by the City of San José. The City's policy with respect to storm drainage addresses both storm water conveyance and quality. From a conveyance standpoint, facilities are typically designed and constructed such that a storm event that would statistically have a 10-percent chance of occurring each year (often referred to as the "ten year storm") would be conveyed in pipes with a freeboard of at least one foot to the top of any curb, or six inches to any storm drainage grate. New ground-level finished floors must be at least one foot above the reference Federal Emergency Management Agency (FEMA) base flood elevation or flood proof one foot above base flood elevation for structure within the FEMA special hazard area.

Current maps from FEMA indicate that a portion of the area roughly bounded by the Union Pacific Railroad lines at the north edge of the Planning Area, the Guadalupe River and Julian Street would be inundated during a 100-year storm event. Additionally, there is an area at the Stockton Avenue, W. Santa Clara Street and White Street intersection that would be inundated during a 100-year storm event.

Figure 8-1: EXISTING STORM WATER SCHEMATIC



Existing stormwater drainage facilities in the Planning Area consist of two (2) lift stations and several networks of pipes that outfall directly to either Los Gatos Creek or the Guadalupe River through the following existing outfalls (see Figure 8-1):

- 18-inch outfall to Los Gatos Creek at Auzerais Street from the east
- 33-inch outfall to Los Gatos Creek at W. San Carlos Street from the west
- 18-inch outfall to Los Gatos Creek at W. San Carlos Street from the east
- 24-inch outfall to Los Gatos Creek at the Bird Avenue, Montgomery Street and Lorraine Avenue intersection from the east
- 48-inch outfall to Los Gatos Creek at the Bird Avenue, Montgomery Street and Lorraine Avenue intersection from the west
- 15-inch outfall to Los Gatos Creek at Park Avenue from the east
- 15-inch outfall to Los Gatos Creek at Park Avenue from the west
- 12-inch outfall to Los Gatos Creek at Park Avenue from the east
- 24-inch outfall to Los Gatos Creek at W. San Fernando Street from the west
- 18-inch outfall to Los Gatos Creek at W. San Fernando Street from the west
- 18-inch outfall to Los Gatos Creek at W. Santa Clara Street from the west
- 18-inch outfall to the Guadalupe River at W. San Carlos Street from the west
- 18-inch outfall to the Guadalupe River at Park Avenue from the west
- 18-inch outfall to the Guadalupe River at W. Saint John Street from the west has been demolished. 48" outfall to Guadalupe River West Saint John from the south
- 10-inch outfall to the Guadalupe River at Old Julian Street from the west add 60" outfall W. Julian
- 27-inch outfall to the Guadalupe River at Howard Street from the west

While there is no master plan for stormwater drainage in the City of San José, conveyance lines in and around the planning area are thought to be sized to accommodate an event that would statistically occur every two or three years, as opposed to a “ten year storm” as is the City’s design policy. Additionally, many of the pipes in the planning area are 10-inches or 12-inches in diameter. The city’s minimum pipe size for stormwater mains is 15-inches. Therefore, many of the gravity conveyance lines in the area would need to be upsized to meet current requirements.

Each outfall would need to be inspected and hydraulically analyzed separately to determine if replacement would be required by new development. Outfalls that must be replaced will require permits from the Army Corps of Engineers, the California Regional Water Quality Control Board and the California Department of Fish and Game and other public agencies. Current City of San José Public Works records indicate that the Howard Street and West Julian outfalls are in disrepair, but is still functioning. It is not currently on the Department of Public Works’ Capital Improvement Projects list. All other outfalls in the area are in serviceable condition.

Because the study area is on the valley floor, was developed over the past 50-years or more, and has sparse stormwater drainage facilities, compared to current standards, we would anticipate some areas of localized ponding in the streets during times of moderate to intense rainfall. There are existing lift stations at the CalTrain rail crossings of Julian, W. Santa Clara, and Park Street that drain the depressed roadways. The station at W. Santa Clara Street is owned by Cal Train; the Julian and Park Street stations are owned and operated by the City of San José.

The Santa Clara Valley Water District has jurisdiction over Los Gatos Creek and the Guadalupe River, which receive the run-off flows from the planning area. The District is engaged in a multi-phase project to widen the Guadalupe River channel so that it can accommodate a storm that statistically would have a 1-percent chance of occurring in any given year (often referred to as “the 100-year storm”). No such project is planned for Los Gatos Creek, so areas from which flows are tributary to the outfalls into Los Gatos Creek will likely need to demonstrate that post development discharge rates do not exceed predevelopment rates.

With respect to stormwater quality, new developments must comply with municipal regional stormwater permit with the California Regional Water Quality Control Board – San Francisco Bay Region. The Santa Clara Valley Urban Runoff Pollution Prevention Program has published a guide titled, C.3 Stormwater Handbook to assist project applicants meet the requirements for treatment of discharges, and the City of San José has ordinances and policies to address the management of urban runoff.

As the existing surfaces in the area are largely impervious and historical land uses in the area have been predominantly industrial and commercial, and as nearly all parcels were developed prior to the adoption of stormwater quality requirements, we would anticipate new development projects to include higher percentages of landscaping and treatment mitigation measures, which will largely serve to decrease, rather than increase peak stormwater run-off flow rates and increase water quality.

The project should comply with current NPDES. Permit is required.

8.2 Wastewater Facilities

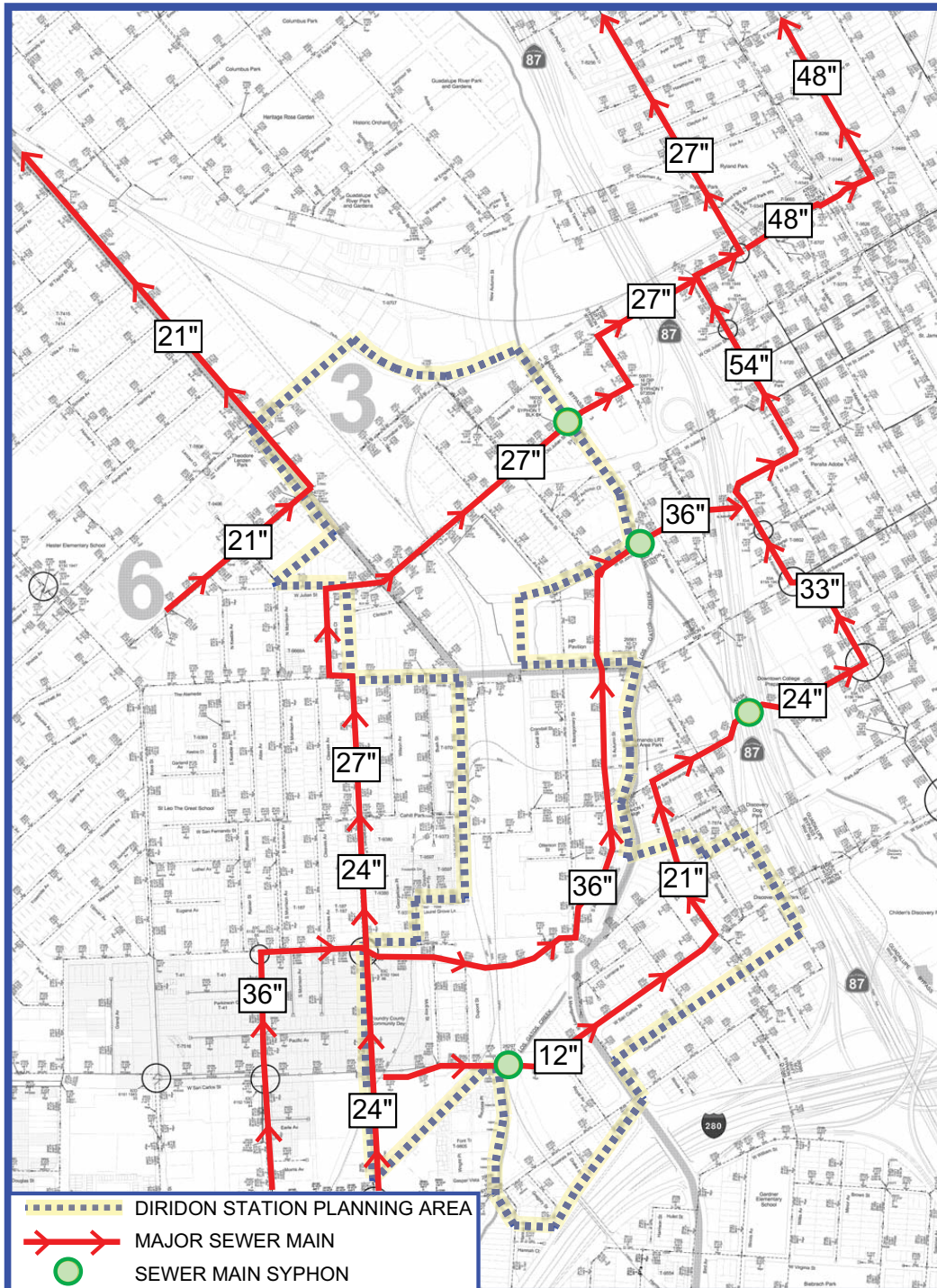
The City of San José has adopted a level of service (LOS) policy for design of wastewater mains. The levels of service range from “A” to “F”, with LOS A defined as unrestricted flow, and LOS F defined as being inadequate to convey existing wastewater flow. To meet the City’s guidelines, new developments must meet LOS D or better. LOS D is defined as restricted sewage flow during peak conditions.

Wastewater facilities within the study area are owned and maintained by the City of San José Department of Public Works (SJDPW). The SJDPW facilities consist of gravity pipe lines of predominantly vitrified clay (VCP) but the mains are of various other materials including polyvinyl chloride (PVC), high density polyethylene (HDPE), reinforced concrete (RCP), ductile iron (DIP), and cast iron (CI). Wastewater flows exit the area predominantly to the east through four main lines (see Figure 8-2):

- The Lincoln Avenue 36-inch – This system runs east on Park Street, turns north on Autumn Street and then exits the planning area in St. Johns Street.
- The Sunol Street 24-inch – This system turns into a 27-inch line in Old Julian Street and continues down Old Julian Street to exit the planning area.
- The Lincoln Avenue 21-inch line – This system runs north up Morrison Avenue to Cinnabar Street, then briefly enters the planning area before exiting on Stockton Street to the northwest.
- Another line runs in W. San Carlos Street to Gifford Avenue where it turns north and exits the planning area.

Available flow test data indicates that the 36-inch and 21-inch Lincoln lines are flowing roughly half-full during dry weather flows, while the Sunol 24-inch line is flowing greater than 2/3 full in dry conditions. This line may surcharge during wet weather conditions. It is expected that, between these three lines, an additional 2-3 million gallons per day (MGD) of capacity is available and the 36” Lincoln Avenue sewer line has bigger capacity for future development. Flow test data on the W. San Carlos Street line is not currently available.

Figure 8-2: EXISTING WASTE WATER SCHEMATIC



Beyond the planning area boundary, these lines flow through a series of siphons under Los Gatos Creek, the Guadalupe River and California State Route 87 (SR 87). Flows then travel northward through a network of mains in the Downtown San José street system, where they eventually converge in Zanker Road, which carries multiple 84-inch RCP trunk mains to the Santa Clara – San José Water Pollution Control Plant for treatment prior to discharge to San Francisco Bay. Flow test data is not available on these major trunk mains. There are no lift stations or force mains between the project area and the Water Pollution Control Plant.

A closed circuit television (CCTV) inspection of 2,500 lineal feet of 6-inch VCP wastewater line just north of the planning area was conducted in February of 2005 in association with the development of the San José Market Center on Coleman Avenue and found many instances of cracking, offset joints and broken pipe, all of which, if severe enough, could allow infiltration of groundwater into the pipeline. Broken pipe or offset joints can cause obstructions to wastewater flow. We would anticipate that much of the VCP segments in the project area are in similar condition.

As noted above, all mains that carry wastewater from the area cross either the Guadalupe River or Los Gatos Creek in siphons and there is the potential for increased development density in the Planning Area to increase the wastewater flow rates through these siphons. The City of San José typically does not allow increases of flow rates through their existing siphons. If increases in dry weather wastewater flows cannot be offset by the decreases in infiltration and inflow that may be expected with the replacement of older, VCP laterals, and potentially some mains, with PVC or HDPE pipes, some of the siphons may need to be replaced. For the replacement of siphons, permits would need to be obtained from multiple local, state and federal agencies, including the Santa Clara Valley Water District, the U.S. Army Corps of Engineers, the California Regional Water Quality Control Board and the California Department of Fish and Game.

The City of San José's Environmental Services Department is currently updating the Master Plan for the WPCP. Based on initial projections, and taking into account current trends in water conservation and decreasing industrial demands, increases in population are not anticipated to cause wastewater flows to exceed the plant's treatment capacity in the next 20 years.

Wastewater treatment is provided for the cities of San José, Santa Clara, Milpitas, Campbell, Cupertino, Los Gatos, Saratoga, and Monte Sereno at the San José / Santa Clara Water Pollution Control Plant (WPCP), which is located in the Alviso area of San José. A majority of the treated water from the WPCP is discharged as fresh water through the Artesian Slough and into the South San Francisco Bay. Approximately 10 percent of the water is recycled through the South Bay Water Recycling Program (SBWR) for landscaping, agricultural irrigation and industrial uses throughout the South Bay.

The WPCP has an existing capacity to treat 167 million gallons of wastewater per day (mgd), and of this total amount the capacity allocated to San José is approximately 107 mgd. While the capacity of the WPCP is 167 mgd, the National Pollution Discharge Elimination System (NPDES) permitting program limits the amount of treated wastewater that can be discharged to the San Francisco Bay to 120 mgd average dry weather effluent (wastewater) flow (average of the 3 lowest months between May—October). This is due to potential impacts of additional freshwater discharges to saltwater marsh habitat, as well as pollutant loading to the San Francisco Bay. The NPDES permit requirement is a trigger that, if the 120 mgd average dry weather effluent flow is exceeded, requires the WPCP to engage in specific mitigation activities. Currently, discharges are averaging 80 mgd. Current estimates do not anticipate that discharges will approach 120 mgd in the foreseeable future. In order to avoid such discharges, WPCP is investigating the possibility of installing additional outfall points so that the discharge will not be concentrated in one point. Additionally, increased water recycling would decrease the amount of water discharged to the bay.

8.3 Water Facilities

WATER SUPPLY AND DEMAND

The City of San José Water Company supplies water to the Planning Area. They do not anticipate that meeting the domestic water demands of increased development density in the planning area will be problematic.

WATER DISTRIBUTION

The water distribution system is owned and operated by the San José Water Company and consists of a pipe network which lies predominantly beneath the traveled roadway in the public street rights-of-way.

Distribution lines in the area are a combination of asbestos cement, cast iron, polyvinyl chloride and ductile iron pipe. Many of the distribution lines in the Planning Area are 6-inch in diameter and will likely need to be replaced with larger pipes in order to meet fire service demands for new building structures. Trunk mains that feed the area may also need to be upsized to meet increased fire service demands.

RECYCLED WATER

The City of San José Environmental Services Department administers the South Bay Water Recycling Program (SBWR), through which 10 percent of the wastewater that flows into the WPCP is recycled. The wastewater recycled at the WPCP undergoes primary, secondary, and tertiary treatment before it is used for landscaping, agricultural irrigation, and industrial uses. The SBWR system includes over 100 miles of pipelines that convey recycled water to portions of the cities of San José, Santa Clara and Milpitas. The SBWR program is currently recycling approximately 10-16 mgd of wastewater flowing into the WPCP during the peak summer season. Currently the closest existing recycled water line is at the intersection of Coleman Ave. and Autumn Street. A potential system expansion in the planning area is currently forecast to occur between 2015 and 2020. The project should comply with the City of San José ordinance requirements for the use of recycled water.