

2 | EXISTING PHYSICAL CONDITIONS

According to the *Caltrain 2010 Ridership Report*, Lawrence Station averaged 555 average weekday passenger boardings and alightings in the northbound direction and 536 southbound, compared with Sunnyvale Station at 1,745 and 1,685. The 1,091 total northbound and southbound passengers at Lawrence are lower than the system-wide weekday average at 1,395. The 561 average total boardings at Lawrence comprise 1.5 percent of the system-wide total, which ranks 17th out of 29 stations.

The February 2010 Caltrain counts include 116 total bicyclists getting on and off at Lawrence, which is lower than the system-wide average of 173 but nonetheless a significant contribution (over 10%) to overall station ridership.

Figures 2.9 and 2.10 illustrate that the majority of northbound passengers board at Lawrence rather than alight; similarly, a significant proportion of southbound passengers get off at Lawrence rather than board. This is likely due to Lawrence Station's position near the southern end of the line and the large job pools within the San Francisco, Redwood City, Palo Alto, Mountain View and Peninsula areas. There are fewer destinations south of Lawrence Station, so the shorter distances and generally lower levels of road congestion prompt more commuters to drive rather than use Caltrain. Road congestion during peak periods is higher northbound, with greater impact on travel time due to the longer distances involved to access these job centers.

High Speed Rail (HSR)

The California HSR is studying utilizing four Caltrain tracks at grade through the eastern part

of the City. Engineering studies currently are being prepared to determine the best alignment for HSR in the study area. The release of the EIR for the Peninsula Corridor HSR section (currently on hold) will provide more details on potential station impacts.

Commuter Shuttles and Taxi Service

While no VTA bus routes directly access the station, there are three shuttles that operate at this station (see Figures 2.11-2.13)¹. These include:

- *Duane Avenue Shuttle*: Operates between Mountain View and Lawrence Caltrain Station as well as Duane Avenue office buildings during commute hours.
- *Bowers Walsh Shuttle*: Operates between Lawrence Caltrain Station and Bowers/ Walsh area office buildings during commute periods.
- *Mission Shuttle*: Operates between Lawrence Caltrain Station and the Mission College and Intel areas during commute hours.

The Altamont Commuter Express also runs the Gray Shuttle line three times in the morning (6:14am to 9:06am) in the southbound direction and three in the afternoon (3:10pm to 5:37pm) in the northbound direction. The line runs part of its route north of the Lawrence Caltrain station along Kifer Road and makes stops near Lawrence Expressway during both the morning and evening. The shuttle route provides access to jobs along Kifer Road and Scott Boulevard, which are also served

by the Caltrain shuttles. Although the Gray Line shuttle also extends north to Great America, it is likely that more Lawrence Caltrain passengers will use the free Caltrain shuttles rather than walking up to Kifer Road to access the ACE Shuttle.

VTA runs a Paratransit Program through OUTREACH, a private non-profit. Each bus has lifts or ramps for mobility-impaired riders.

Taxis currently queue in the kiss-n-ride area to the north of the Caltrain station and congregate in an ad-hoc parking area south of the station off Willow Avenue.

Light rail service is provided within Sunnyvale, but is two miles north of the station area, and consequently does not provide direct service to the Lawrence Caltrain Station.

¹ The three shuttle services are funded by the Bay Area Air Quality Management District Transportation Fund for Clean Air, Peninsula Corridor Joint Powers Board, and private companies such as Intel (for the Bowers Walsh and Mission lines) and Advanced Micro Devices (for the Duane Avenue line).

Figure 2.11: Duane Avenue Shuttle route

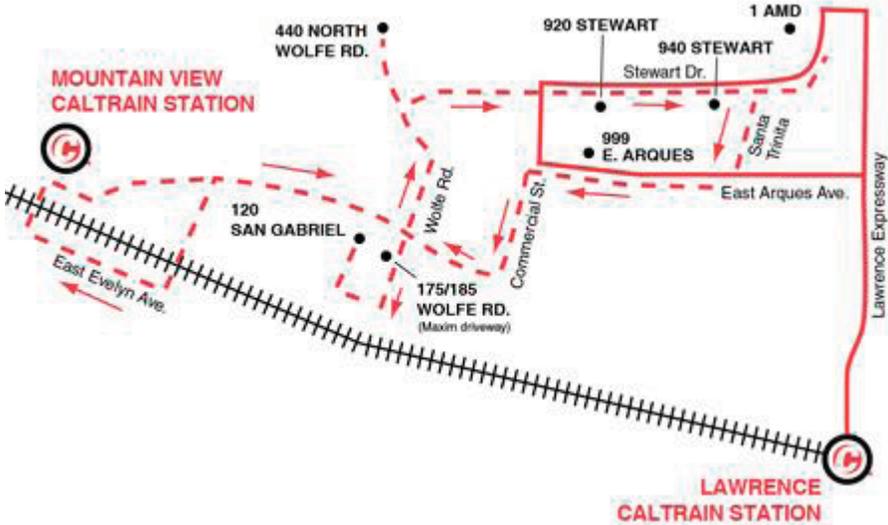
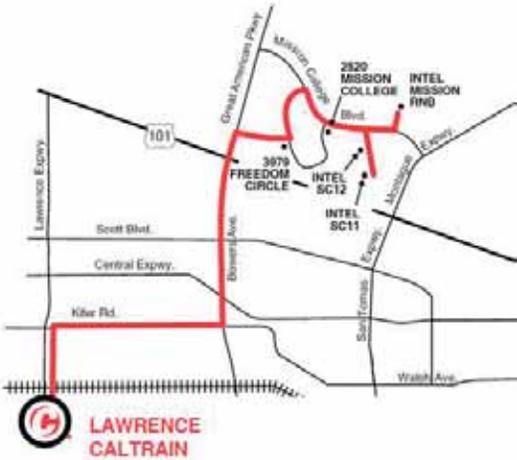


Figure 2.12: Bowers Walsh Shuttle route



Figure 2.13: Mission Shuttle route



Caltrain Station Access Mode Share

As Table 2.7 indicates, About 5 percent of Lawrence station passengers use a free shuttle to get to Lawrence Station and another 22 percent take the shuttle when getting off at Lawrence station.

The majority of passengers traveling to the station come by car, with 34 percent driving to the station and another 34 percent dropped off by a vehicle.

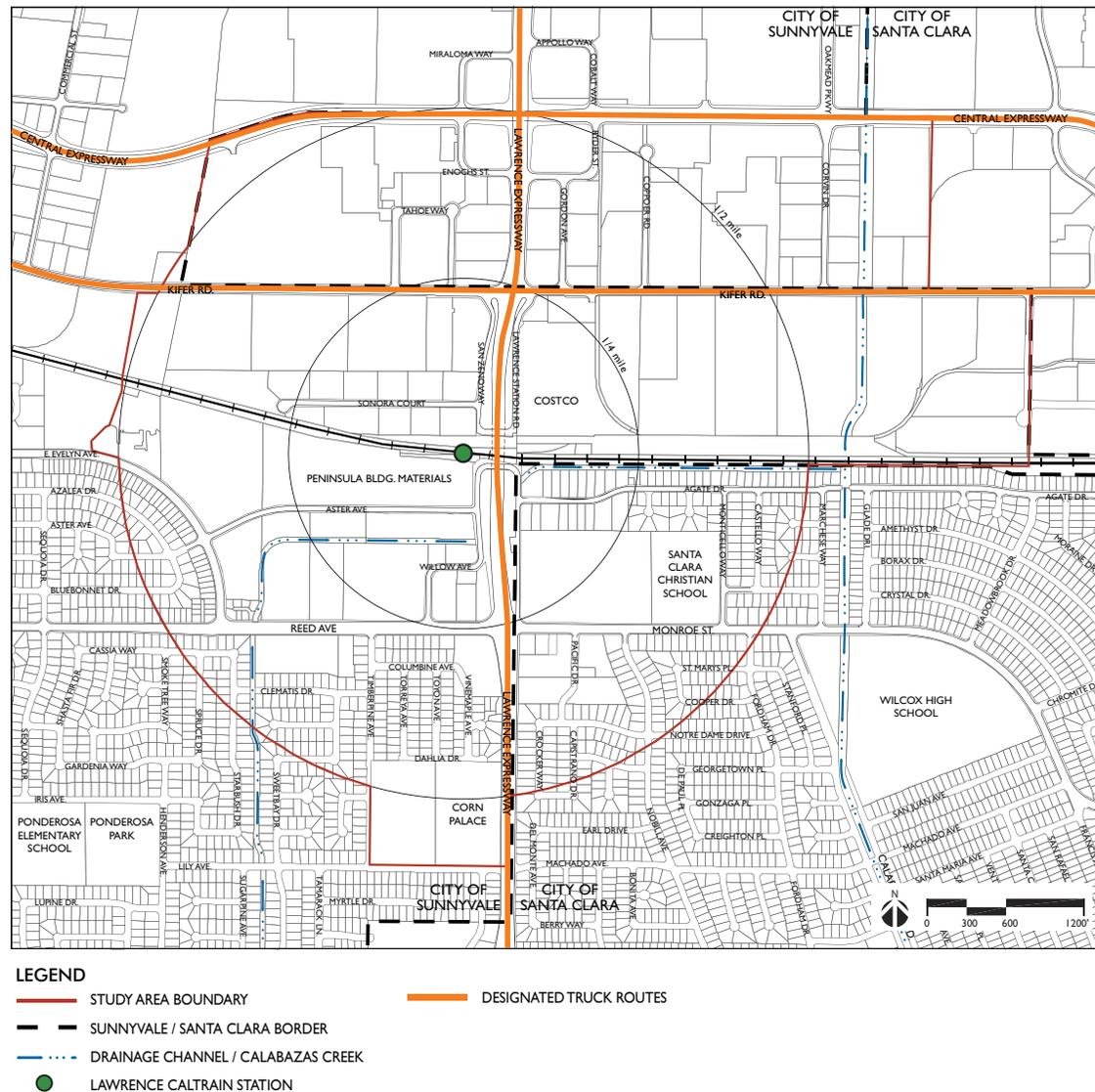
On the other hand, more passengers leave the station on foot (29%), by bicycle (8%), or by shuttle (22%), than by car (25% driving and 14% dropped off).

Table 2.7: Lawrence Station Access Mode Share

Mode	To Station	From Station
Drive	34%	25%
Walk	23%	29%
Another Caltrain	2%	0%
Dropped Off	34%	14%
VTA	0%	2%
Bicycle	2%	8%
Shuttle	5%	22%
Total	100%	100%

Source: Caltrain On-Board Passenger Survey, 2007
 Note: Data based on sample set of 45 boardings and 52 alightings at Lawrence. Includes peak and off-peak weekday as well as weekend trains.

Figure 2.14: Truck Route Network



Truck and Freight Rail

The railroad tracks carry a limited number of freight trains, operated by the Union Pacific Railroad, utilizing a track on the San Francisco - San Jose/Caltrain line. According to information contained in the Santa Clara General Plan, 10-12 freight cars pass through the cities of Santa Clara and Sunnyvale daily. Rail freight has declined over the years and will likely continue to decline as commuter rail along the San Francisco-San Jose rail line takes priority. City policy supports maintenance of freight rail service. Two facilities in the study area utilize the current freight rail service.

The City of Sunnyvale’s LUTE existing conditions analysis indicates that the majority of freight movement within the City is intercity trucking along freeways. Lawrence Expressway and Kifer Road are designated truck routes, which are designated for trucks over three tons in weight mandated by the California Vehicle Code.

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Pedestrian Network

According to Sunnyvale's *Pedestrian Safety and Opportunities Study* (2007), 1.5 percent of Sunnyvale residents walked to work in 2000. The City ranks 94th of all 160 Bay Area communities in walk-to-work, according to the Metropolitan Transportation Commission (MTC). Within the County, Sunnyvale ranks average in walking commute mode share, with Palo Alto on the high end at 3.2 percent and Los Altos Hills lowest at 0.5 percent.

About 5 percent of the City's streets currently lack sidewalks, which is approximately 27.4 miles. Many of these gaps act as a barrier to the surrounding neighborhoods. This condition is especially prevalent in the north part of the station area, though some streets south of the station also lack continuous sidewalks. One example is the missing sidewalks on Willow Avenue, which is a key pedestrian connection to and from the station and Reed Avenue. Additionally, many sidewalks in the study area have obstructions, are discontinuous or non-existent. The image on the opposite page of the sidewalk near the Costco driveway on page 2.27 is an example of a sidewalk that does not meet the ADA required minimum width of three feet. Non-compliant curb ramps and missing sidewalks are defined as deficiencies by the ADA. This situation is indicative of the auto-oriented nature of the development patterns within the study area.

The City standard width for paved sidewalks is five feet, and, according to the *Pedestrian Safety and Opportunities Study*, any sidewalks narrower than 5 feet must include wheelchair passing areas every 200 feet. Reed and Willow Avenue in the study area have missing curb ramps. According to the

Pedestrian Safety and Opportunities Study, Lawrence Expressway and Reed Avenue intersection was the only reported pedestrian collision within the study area during the five-year study period, ending December 31, 2005. Citywide, about 29 percent of the total 144 reported pedestrian collisions occurred at intersections.

The 2008 *Countywide Expressway Plan* indicates that since 2003, pedestrian countdown signals have been added at Reed Avenue and Lawrence Expressway. These devices are particularly helpful when crossing wide, multi-lane roadways like Lawrence Expressway.



Above: Lack of pedestrian facilities on Kifer Road
Below: On-street parking such as shown at this location on Kifer Road, helps separate pedestrians from moving traffic.



Pedestrian Environment

In addition to the quantitative pedestrian access and facilities analysis, a qualitative analysis of the pedestrian environment was conducted. In general, there are few streets where pedestrians can walk safely and comfortably in the study area. Where sidewalks exist, their narrowness, proximity to high-speed or high-volume traffic, quantity of curb cuts and general lack of amenities make them little more than perfunctory circulation facilities rather than desirable elements of the streetscape and urban environment. The lack of sidewalks and their poor quality is not only a lost opportunity to provide a circulation option other than the automobile, but it creates an unsafe environment for those who must walk and eliminates mobility for those who can neither walk nor drive.

*Above: Streets without sidewalks near the station
Below: Many sidewalks are cluttered with signs and utilities limiting their function for pedestrians and forming a barrier to wheelchair-bound users. This location is within 150 feet of the Lawrence Station platform near the driveway of the Costco gas station.*

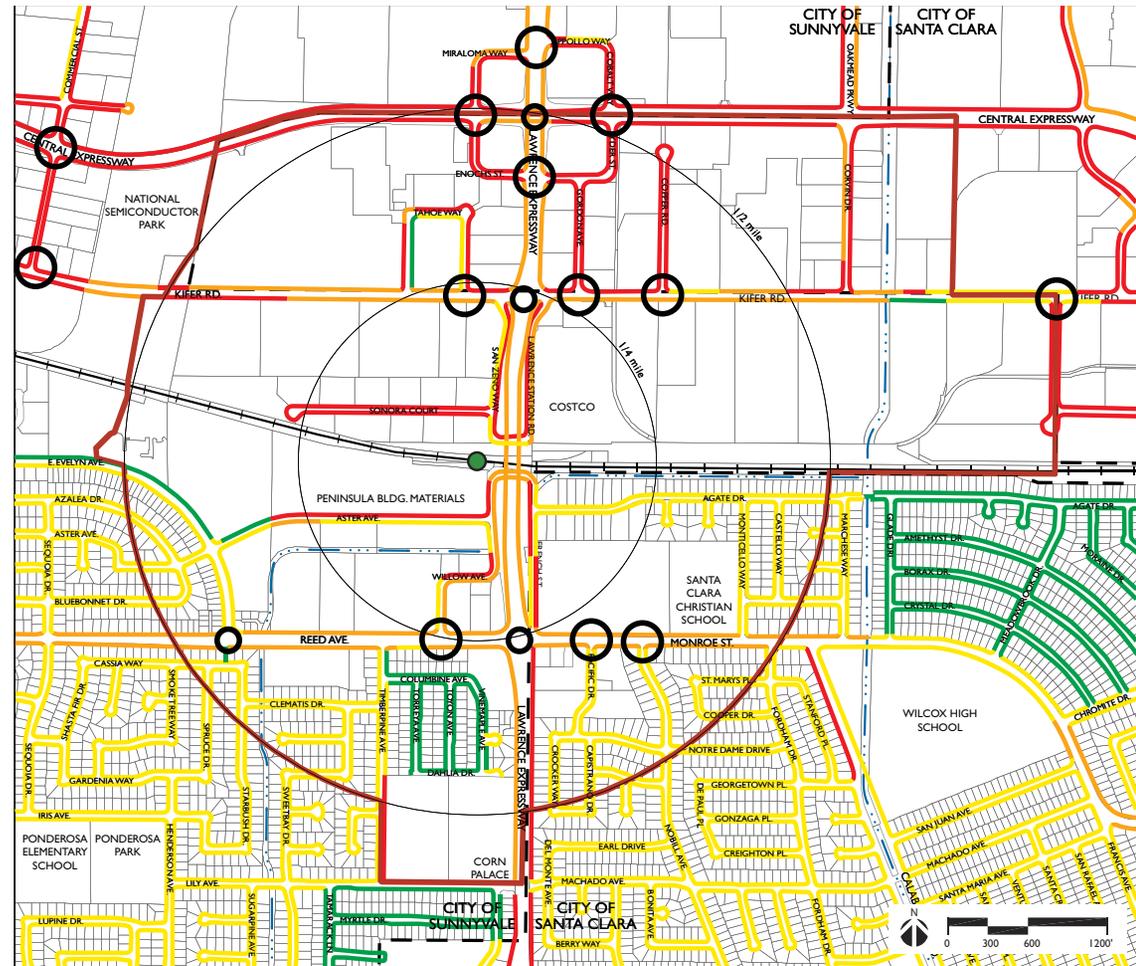
*Above: Large intersections with no center pedestrian refuges make pedestrian crossing difficult.
Middle: Pedestrian sidewalks are discontinuous or lacking in many areas (French Street).
Below: Wide corner radii, even at minor streets, encourage vehicles to round corners at high speeds and increase the crossing distance for pedestrians (Corner of Kifer Road and Tahoe Way)*

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The map shown in Figure 2.15 summarizes the quality of the pedestrian environment in and around the study area. The analysis characterizes the quality of the pedestrian environment as “good,” “fair,” “poor” or “none” taking into account the following criteria:

- Sidewalk width: Meets or exceeds standards and provides sufficient capacity for current adjacent land uses.
- Proximity to traffic: a landscape strip, on-street parking, bulb-outs or other buffers between pedestrians and traffic.
- Amenity: an environment that is visually interesting and comfortable for pedestrians, including building, landscape and streetscape design, street trees or other shade or scale devices, and good visibility and sense of security.
- Sidewalk Condition: a walking surface of good quality and condition.
- Conflicts: presence of obstacles that impact safe pedestrian movement (e.g., sidewalk obstructions, frequent vehicle crossings at driveways).
- Intersections: overall street width, curb radii or dedicated right turn lanes conducive to safe and comfortable pedestrian crossing.

Figure 2.15: Quality of Pedestrian Environment



LEGEND

- | | | | | | |
|--|------------------------------------|--|------|--|---|
| | STUDY AREA BOUNDARY | | GOOD | | DIFFICULT INTERSECTION
(FREE RIGHT TURN LANES, STREET WIDTH) |
| | SUNNYVALE / SANTA CLARA BORDER | | FAIR | | |
| | DRAINAGE CHANNEL / CALABAZAS CREEK | | POOR | | |
| | LAWRENCE CALTRAIN STATION | | NONE | | |



Above: Free right turns such as this location at the corner of Lawrence Expressway, Monroe Street and French, create difficult and unattractive conditions for pedestrians and bicyclists.

Middle: Narrow "attached" sidewalks place pedestrians in close proximity to fast moving traffic and provide no space for attractive street tree plantings.

Below: Narrow sidewalk along Kifer Road

Bicycle Circulation

The 2000 U.S. Census indicates 0.7 percent (526 bicyclists) commuted to work by means of a bicycle in Sunnyvale, increasing to 1 percent (682 bicyclists) as depicted in the American Community Survey 2005-2009 estimates. Of all bicycle commuters, 33 percent travel out of Sunnyvale for work on bicycle, 42 percent inbound, and 25 percent within the city.

The *Sunnyvale 2006 Bicycle Plan* indicates that of the City's 300 miles of streets, 83.8 lane-miles have bike lanes. Santa Clara County allows bicycles on all expressways, including Lawrence. Signalized intersections have bicycle detection to help serve bicycle traffic. However, the facilities on Lawrence Expressway are intended only for advanced riders that are comfortable bicycling next to fast-moving traffic.

The Sunnyvale 2006 Bicycle Plan defines three bicycle facility classification levels as follows:

- Class I bicycle facilities, or shared use path/trails, are two-way off-street facilities.
- Class II bicycle facilities, known as bicycle lanes in the City's Bike Plan, are striped areas on the streets reserved for bicycle travel and are typically one-way on the right side of the street.
- Class III bicycle facilities, or shared roadways as designated in the Bike Plan, do not have a separated designated space within the roadway. They are typically lower volume streets, are often signed, and are shared with motor vehicles.

In addition to these three classifications, the *Sunnyvale 2006 Bicycle Plan* indicates a suggested skill level for streets without Class II or Class III amenities. The City's bicycle map indicates beginner, intermediate, and advanced levels.

Beginner facilities are those streets with low vehicle volumes and speeds; bicyclists less skilled and not as familiar with safety rules are better suited for these streets. Intermediate streets have moderate traffic speeds and volumes and generally have enough space to comfortably accommodate bicyclists as they ride alongside vehicles. Finally, streets with advanced designations, like Lawrence Expressway, have high vehicle speeds and volumes; bicyclists must be comfortable riding on major roadways that may have limited width on the outside lanes for bicycle use.

Station Area Bicycle Network

The VTA *Countywide Bicycle Plan* (2008) indicates a Class II bicycle facility within the study area on Reed Avenue from Evelyn to the City limit on Lawrence Expressway. Lawrence Expressway has wide shoulder stripes and is a designated bicycle facility as indicated above. The *Countywide Expressway Study* verifies that since 2003, the County has completed bicycle shoulder widening on Lawrence Expressway from El Camino Real to Kifer.

According to the *Sunnyvale 2006 Bicycle Plan*, access to Lawrence Station includes Kifer Road to the north providing east/west access. Kifer has Class II bicycle lanes west of Lawrence Expressway; it transitions to a class III bicycle route with wide outside lanes east of Lawrence in Santa Clara. South of the Caltrain station, class II bicycle lanes on East Evelyn and Reed Avenues in Sunnyvale, and a proposed class III bike route on Monroe Street in Santa Clara provide east/west access.

The new tunnel under the Lawrence Station provides access to the other side of the tracks by means of a ramp or stairs, which have metal

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channels for bicycle tires to help bicyclists manage on the stairwells.

There are many gaps in the existing bicycle network around the station. Many of the bicyclists utilizing the tunnel are coming from the Calabazas Creek trail or from the bicycle routes on Reed Avenue or Kifer Road in Sunnyvale, or Monroe Street in Santa Clara. Enhancing these connections is a vital part of improving bicycle circulation in the station area.

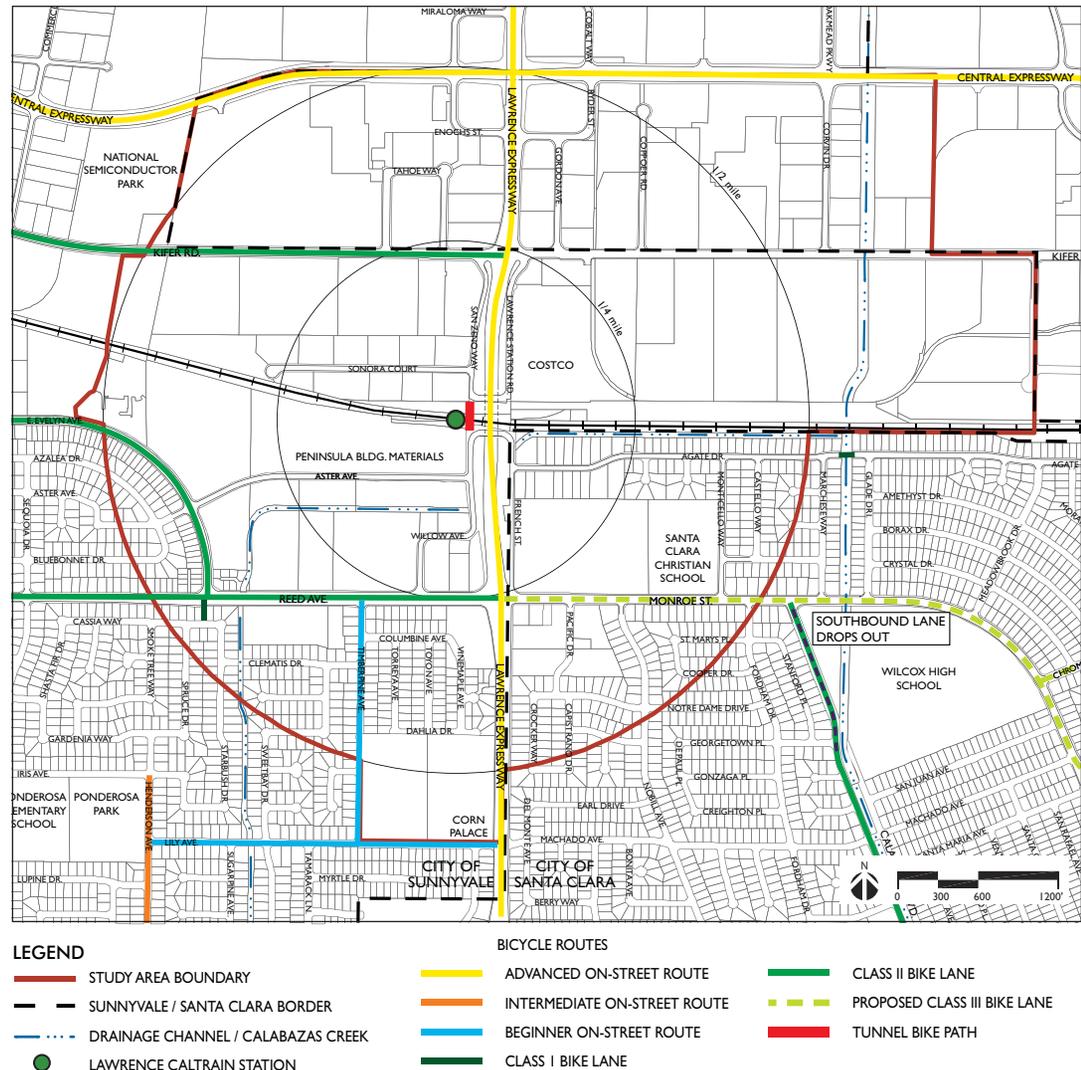
As noted above, a significant number of bicyclists utilizing the new tunnel under the station do not board Caltrain but use it as a means of getting from one side of the tracks to the other. This is likely a popular connection for bicyclists connecting to and from existing bicycle trails in lieu of using Lawrence Expressway overpass.

Bicycle Parking

While Caltrain has one of the most generous onboard bicycle programs in the U.S., it still has limited onboard capacity. In 2011, Caltrain increased their capacity to provide space for 48 to 80 bicycles, depending on the train. Caltrain continues to encourage bicyclists to park at Caltrain stations when feasible.

According to Caltrain's *Bicycle Access and Parking Plan*, roughly eight percent of all passengers arrive at Caltrain by bicycle system-wide, which is significantly higher than at Lawrence Station (two percent arrive at the station via bicycle, eight percent use bicycle to go from the station to their ultimate destination). The plan identifies the importance of the type of bicycle parking, not just the quantity. There are 24 bicycle lockers and two bicycle racks at Lawrence station.

Figure 2.16: Bicycle Network





Above: Bicycle bridge at Calabazas Creek
 Middle: Sonora Court at San Zeno
 Below: Bicycle lane on Kifer Road

Above: Reed Avenue near Willow Avenue
 Below: Class II bike lane at Kifer Road and Lawrence Expressway

Above: Ramp leading to station underpass
 Middle: Bicycle lockers are provided at the Lawrence Station
 Below: Bicycle parking and transit information at Station

Summary: Transportation & Circulation Issues and Opportunities

The Lawrence Station Study Area is not well served by facilities for bicyclists, pedestrians, and buses. While the station has good facilities for vehicle drop-off and parking, it is located under Lawrence Expressway and has poor roadway access points (from Reed/Monroe via Willow and from Kifer via Lawrence Station Road and San Zeno Way). Awkward intersection designs combined with high vehicle volumes contributes to the inaccessibility of the station. The station’s shuttle service provides adequate service to many but not all employment centers, and service is limited to commute hours.

Observations indicate that while the Lawrence Station has the opportunity to be a successful station, many issues exist which prevent the station from being well-utilized. The overarching issue is the automobile-oriented transportation network in the area, with limited transit connections and poor pedestrian and bicycle circulation. The six main transportation challenges include:

1. A framework of few streets and large blocks in the northern half of the study area based on large footprint industrial uses limit access throughout the area for all modes of travel, including motor vehicles.
2. Gaps in the existing bikeway network, with poor connections between the station, the neighborhoods and local bicycle routes, such as Reed Avenue and the Calabazas Creek Trail.
3. Gaps in the existing pedestrian network, including missing sidewalks, expansive street crosswalk distances, sidewalk obstructions and major barriers created by large intersections at

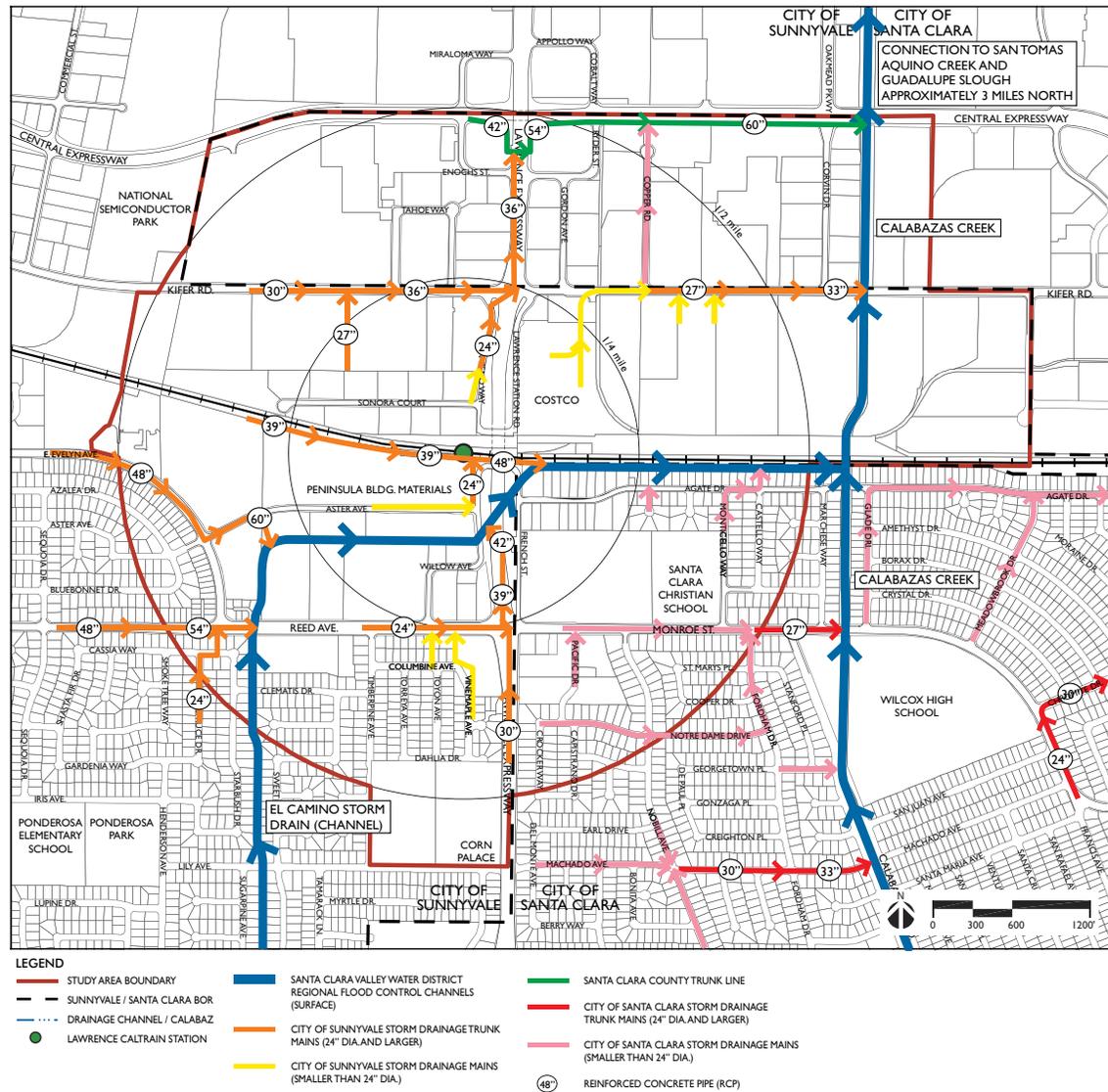
- wide arterial streets such as Reed and Monroe, and Kifer and Lawrence Expressway.
4. Limited north/south bus service from the Lawrence Station area to employment centers to the north and no direct bus service to the station. The existing Caltrain shuttles help provide access to some employment centers, but they are limited in the locations they serve and hours they run.
5. Poor access to the station by all modes of travel. High vehicle volumes and speeds on Lawrence Expressway coupled with a large overpass contribute to low station visibility.
 - Wide, unsafe crossings for bicyclists and pedestrians at key intersections of Lawrence and Kifer Road and Lawrence and Reed/Monroe.
 - Automobile access to Lawrence Station is challenging, limited by right-in and right-out movement.
6. Inefficient parking management
 - Some Caltrain passengers park their vehicles in local residential neighborhoods to avoid Caltrain parking lot fees. Parking surveys indicate that this occurs particularly on the streets south of the station that do not have parking restrictions (e.g. Agate Drive). Further detail on parking surveys is discussed in Appendix C.

There are opportunities in the study area to address these challenges. In order to support a mixed-use neighborhood and capitalize on the unrealized opportunity of the Lawrence Station area, the following opportunities should be considered:

- Provide an improved multi-modal circulation network that is less automobile-oriented. Provide a circulation system that supports a comfortable walking and bicycling environment.

- Redistribute existing streets’ rights-of-way to include pedestrian, bicycle and bus transit facilities.

Figure 2.17: Storm Drainage System



Utilities & Infrastructure

The following information summarizes the existing utilities and infrastructure in the study area focusing primarily on water conveyance systems. The purpose of this review is to determine whether sufficient capacity exists in existing water utility systems to accommodate potential increased future development in the study area.

Storm Drainage

Sunnyvale

Local storm drainage facilities in Sunnyvale are owned and maintained by the City of Sunnyvale’s Department of Public Works. The local system discharges into a regional system, under the jurisdiction of the Santa Clara Valley Water District (SCVWD), which conveys storm run-off to the San Francisco Bay.

In the study area, SCVWD facilities include the El Camino Storm Drain Channel (ECSDC), and Calabazas Creek. From the residential neighborhood located in the planning area’s southwest quadrant, the ECSDC flows northward and then eastward, running along the railroad’s southern edge before connecting to Calabazas Creek, approximately one-half mile east of the Lawrence Station. Calabazas Creek flows from south to north connecting into the San Tomas Aquino Creek which empties into Guadalupe Slough approximately 3-miles north of the El Camino Storm Drain Channel confluence.

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Major local facilities in the Sunnyvale portion of the study area include:

- The Lawrence Expressway 42 flows from the south in Lawrence Expressway. With pipe sizes increasing from 30-inches to 42-inches, it discharges into the ECSDC just south of the Station;
- The Reed Avenue 54 which flows from the west in Reed Avenue in varies pipe sizes from 48-inches to 54-inches before discharging to the ECSDC;
- The Evelyn Aster 60 which flows from the west in Evelyn Avenue and Aster Avenue (pipe sizes from 48-inches to 60-inches) before discharging to the ECSD;
- The Railroad 48 which flows from the west in the railroad right-of-way (in pipe sizes from 39-inches to 48-inches) before discharging to the ECSD just east of the Lawrence Expressway and the Station;
- The Kifer-Lawrence 36 flows east in Kifer Road and north in Lawrence Expressway, (contained in pipes with varying sizes from 30-inches to 36-inches) before connecting to a 60-inch Santa Clara County line running east in Central Expressway;
- The Kifer Road 33 flows east in Kifer Road (in pipe sizes from 27-inches to 33-inches) before discharging to Calabazas Creek.

The area bounded by the railroad right-of-way on the south, Lawrence Expressway on the west, Kifer Road on the north and Calabazas Creek on the east, is characterized by commercial uses with interconnected parking areas with no internal public streets. As such, there is very little public storm drainage infrastructure in this area.

Santa Clara

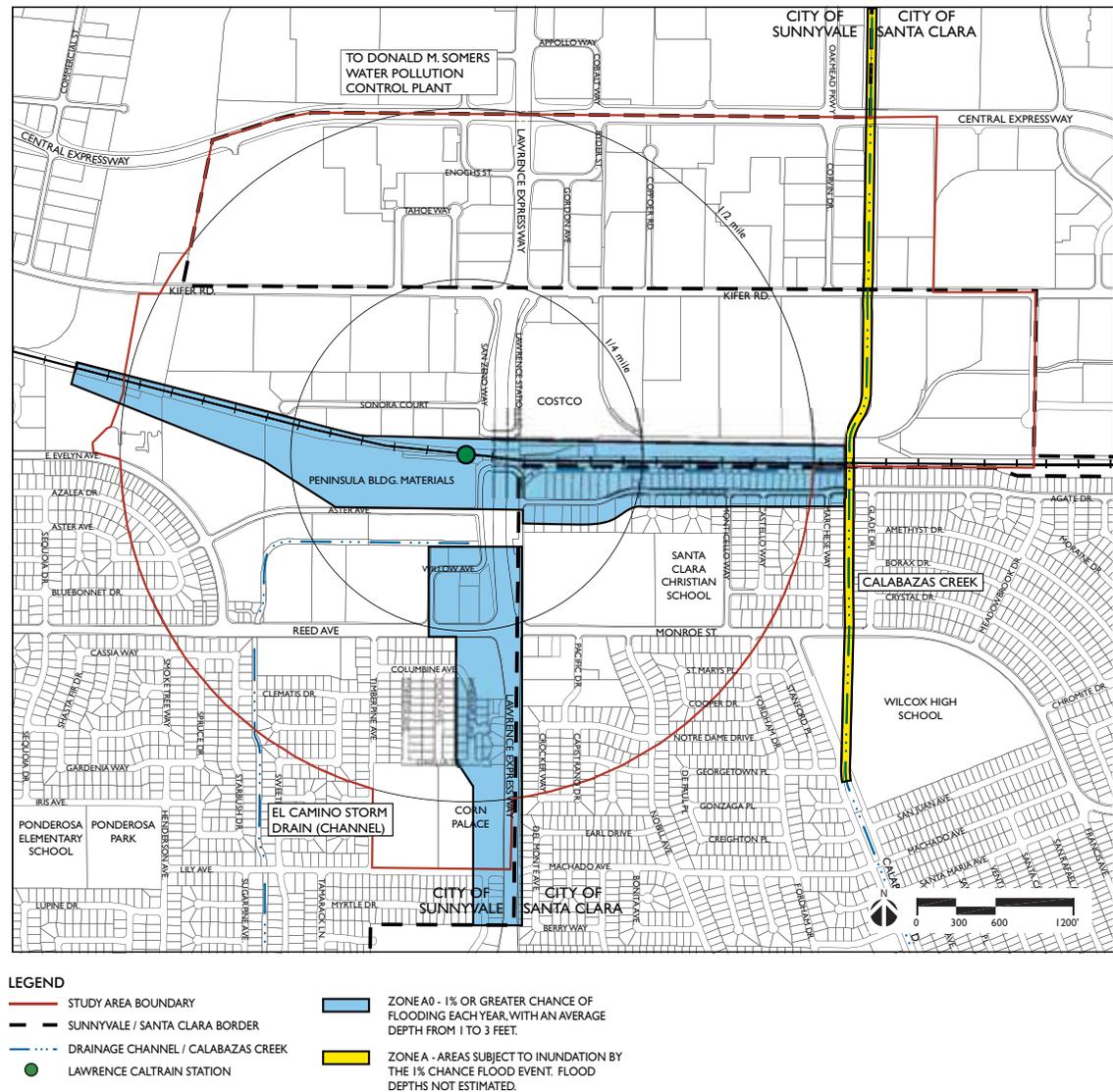
Local storm drainage facilities in Santa Clara are owned and maintained by the City of Santa Clara's Department of Public Works. Santa Clara's local system also discharges into the Santa Clara Valley Water District's regional system, which flows to the San Francisco Bay.

Santa Clara's residential neighborhoods in the southeast quadrant of the study area, is drained through a network of smaller pipes that have multiple discharge points to both Calabazas Creek and the El Camino Storm Drain Channel.



Above: Calabazas Creek is the major storm drainage facility in the study area. Culvert at Kifer Road (view north)
Below: Calabazas Creek (view south)

Figure 2.18: Flood Plain



Flood Plain

Current maps from FEMA indicate inundation during a 100-year storm event occurs along:

- The railroad right-of-way and some developed property along its southern edge;
- A segment of Lawrence Expressway between the Sunnyvale city limit line, and the El Camino Storm Drain Channel to the north including adjacent properties.

Wastewater Facilities

Sunnyvale

Wastewater from the portions of the Study Area that are southwest and north of the Lawrence Station is conveyed through the City of Sunnyvale’s wastewater collection system to the City’s Donald M. Somers Water Pollution Control Plant (WPCP), which is approximately four miles north of the Lawrence Station.

The Donald M. Somers Water Pollution Control Plant was last upgraded in 1984 and has an existing capacity to treat 29.5 million gallons of wastewater per day (MGD) before discharging to the San Francisco Bay. It is currently operating at approximately half of its capacity, as projections made in 1983 anticipated higher levels of industrial land uses and wastewater flow levels than have been realized. Flows are not expected to increase to levels that would approach the plant’s design capacity in the foreseeable future.

Sunnyvale’s wastewater conveyance facilities are owned and maintained by the City of Sunnyvale Department of Public Works (SDPW). The facilities consist of gravity pipe lines of predominantly vitrified clay (VCP) but the mains are of various other materials including polyvinyl chloride (PVC),

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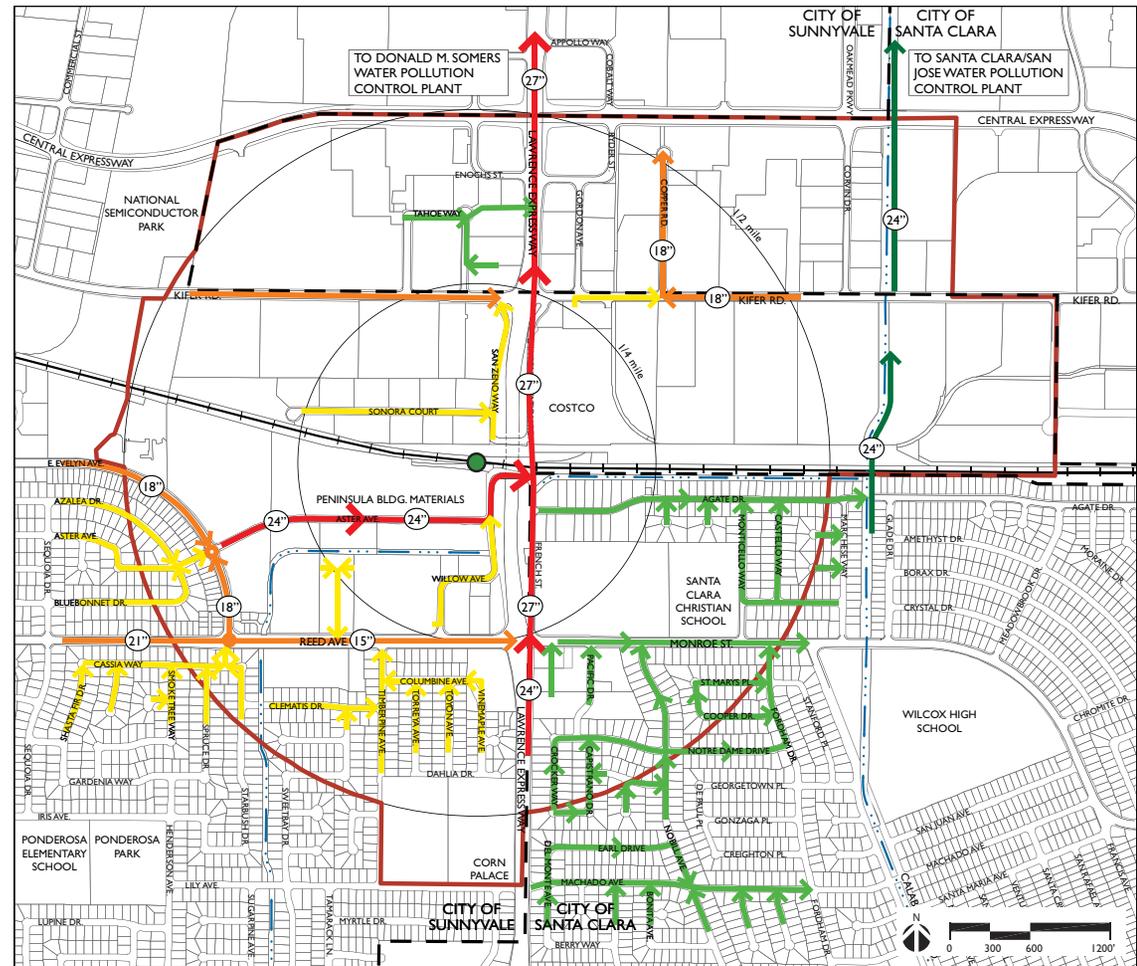
high density polyethylene (HDPE), reinforced concrete (RCP), ductile iron (DIP), and cast iron (CI). Sunnyvale’s wastewater flows exit the area predominantly to the north through the Lawrence main line:

- The Lawrence 27-inch – This City of Sunnyvale system runs along Lawrence Expressway from south to north, through the center of the planning area and conveys wastewater flows to the WPCP.

Additionally, several smaller trunks that serve other portions of Sunnyvale convey wastewater through the planning area before connecting with the Lawrence 27-inch, including:

- The Evelyn-Astor 24-inch – This line runs east down East Evelyn Avenue, then turns to continue east in Aster Boulevard before connecting to the Lawrence 27-inch near the south platform of the Lawrence Station;
- The Reed 21-inch – This line runs east down Reed Avenue before jogging to the north in Evelyn to meet the Evelyn-Astor 24-inch described above. An additional 15-inch line continues easterly in Reed Avenue and provides redundancy;
- The Kifer 18-inch (west) – This line runs from west to east in Kifer Road before tying into the Lawrence 27-inch;
- The Kifer 18-inch (east) – This line runs from east to west in Kifer before turning north in Copper Road where it parallels the Lawrence 27-inch.

Figure 2.19: Wastewater System



LEGEND

STUDY AREA BOUNDARY	CITY OF SUNNYVALE TRUNK GRAVITY MAIN (24"-27")	CITY OF SANTA CLARA TRUNK GRAVITY MAIN
SUNNYVALE / SANTA CLARA BORDER	CITY OF SUNNYVALE BACKBONE GRAVITY MAIN (15"-21")	CITY OF SANTA CLARA SERVICE MAIN (SMALLER THAN 15"DIA.)
DRAINAGE CHANNEL / CALABAZAS CREEK	CITY OF SUNNYVALE SERVICE MAIN (SMALLER THAN 15"DIA.)	DIAMETER OF WASTEWATER PIPE
LAWRENCE CALTRAIN STATION		

The northeast quadrant of the study area, bounded by the railroad right-of-way on the south, Lawrence Expressway on the west, Kifer Road on the north and Calabazas Creek on the east, is characterized by commercial uses with interconnected parking areas with no internal public streets. As such, there is very little public wastewater collection infrastructure in this area.

There are no known problem locations in the City's wastewater collection system that would constrain development in the study area, although this project represents an opportunity to prepare an updated, focused study of the 27-inch trunk main, identify and evaluate potential issues, and include any improvements required to support the development in an overall financing plan. A pump was installed near the intersection of Lawrence Expressway and Arques Avenue circa the year 2000 to divert peak flows, when necessary, from the Lawrence line to the Borregas sewer, which runs north in Mathilda Avenue, which may alleviate potential capacity issues.

Santa Clara

The area to the southeast of the Lawrence Station is within Santa Clara's City limits and is conveyed through the City of Santa Clara's wastewater collection system to the San Jose/Santa Clara Water Pollution Control Plant. The Plant is located approximately five miles north of the Lawrence Station in the Alviso area of San Jose. The Plant provides wastewater treatment for the cities of San Jose, Santa Clara, Milpitas, Campbell, Cupertino, Los Gatos, Saratoga, and Monte Sereno.

The San Jose/Santa Clara Water Pollution Control Plant has an existing capacity to treat 167 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 flow. 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 contains a trigger that, if the 120 MGD average dry weather effluent flow is exceeded, additional mitigation activities are required. 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 at a single location. Additionally, increased water recycling would decrease the amount of water discharged to the bay.

Wastewater conveyance facilities within Santa Clara are owned and maintained by the City of Santa Clara Department of Public Works (SCDPW). Wastewater flows exit Santa Clara predominantly to the north through the Corvin Drive main line:

- The Corvin Drive 24-inch – This City of Santa Clara system runs north in Corvin Drive and collects wastewater from the southeast quadrant of the study area (areas within the City of Santa Clara), as well as portions of the City further to the south.

Water Facilities

Water Supply and Demand

Water in the City of Sunnyvale is provided by the Water Section of the City of Sunnyvale Public Works Department and comes from several sources, including local, city-owned wells; the Santa Clara Valley Water District (SCVWD); and the San Francisco Public Utilities Commission (SFPUC). The City has long-term contracts in place with SFPUC (through 2034) and SCVWD (through 2050).

In the study area, water is provided entirely by the SFPUC through a connection to their Bay Division pipe lines near the intersection of Lawrence Expressway and Lakehaven Drive, approximately two miles north of the station.

Barring catastrophic events, the City has adequate supply commitments and facilities to reliably meet the projected water needs of its residents and businesses for the foreseeable future.

Water Distribution

The water distribution system is owned and operated by the City of Sunnyvale Department of Public Works and consists of a pipe network which lies predominantly beneath the traveled roadways in the public street rights-of-way, and a system of reservoirs that serve to store water and regulate pressures. Pressures in the study area are between approximately 75 pounds per square inch (psi) and 90 psi. Many of the distribution lines in and to the study area are 8-inch to 10-inch in diameter.

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The northeast quadrant of the study area, bounded by the railroad right-of-way on the south, Lawrence Expressway on the west, Kifer Road on the north and Calabazas Creek on the east, is characterized by commercial uses with interconnected parking areas and no internal public streets. As such, there is very little public water distribution infrastructure in this area.

Over 80% of the distribution and trunk lines in the City were installed in the 1960s and are nearing the end of their estimated 50-year service life. Planned rehabilitation and/or replacement are needed to minimize the need for emergency repairs.

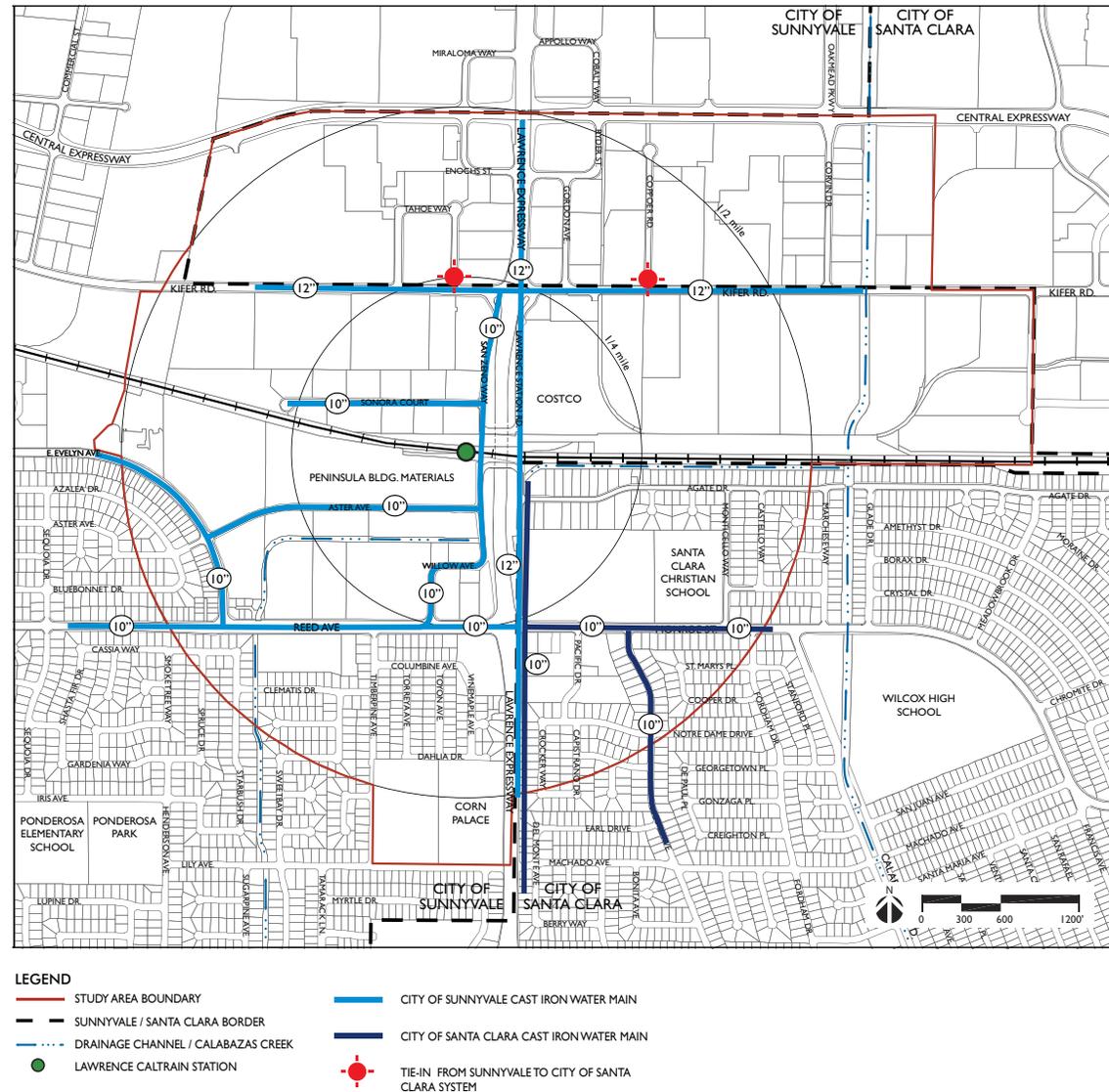
Recycled Water

The City of Sunnyvale water recycling program provides a drought-resistant supply of water to portions of the City for non-potable uses. A portion of the water that is treated at the WPCP is used for landscaping purposes in the northern portion of the City. Parks, golf courses, industrial parks and play fields obtain water at a discounted rate where available. To serve these customers, the City has constructed a separate distribution network in the northern portion of the City used solely for the delivery of recycled water. The system has the capacity to produce and deliver approximately 7.5 million gallons/day (mgd). Currently, the typical demand is approximately 6.0 mgd.

The existing system extends south to a storage tank at Wolfe Road adjacent to the Caltrain right-of-way, approximately 1-mile west of the Lawrence Station.

The Department of Public Works is currently updating the 2000 Recycled Water Master Plan,

Figure 2.20: Water Conveyance System



scheduled for Council adoption in 2011. The plan will address recycled water usage including regulatory requirements, strategies for promoting the use of recycled water, analysis of existing facilities, and the demand for recycled water. It will also include strategies for potential expansion of the recycled water distribution system.

Summary: Utilities & Infrastructure Issues and Opportunities

The Lawrence Station Area is, in general, adequately served by public water conveyance infrastructure to meet the needs of existing conditions. Some infrastructure systems have considerable excess capacity while others may require improvement and upgrade if significant additional development occurs in the study area. Following is a summary of key issues and opportunities:

Storm Drainage

1. Existing trunk system and main is adequate to serve the area.
2. Redevelopment has the potential to improve drainage and reduce flows through incorporation of Best Management Practices (BMPs).

Flood Plain

1. Currently some areas are subject to flooding.
2. BMPs incorporated into redesigned and developed sites can improve these conditions.
3. Any new structure placed within the study area would need to be built in compliance with the City's Municipal Code requirements.

Wastewater Facilities

1. There is currently significant excess capacity in Sunnyvale's citywide treatment plant.
2. Issues currently exist in the conveyance system serving portions of the study area, notably the Lawrence 27-inch line.
3. Significant additional development in the study area will require improvement to these facilities. The most significant constraint is the Lawrence 27.

Water Supply and Distribution

1. The City has long-term supply contracts with SFPUC adequate to meet the needs of significant increased development within the study area through the year 2050.
2. Most of the distribution lines will require rehabilitation and replacement soon.
3. Increases in development intensity will require upgrades in most areas.

Recycled Water

1. The City has significant recycled water supplies available.
2. Distribution facility will be required in the study area to provide recycled water.



Sonora Court looking west, January 2011