Draft Transportation Concept Report

State Route 17
District 4
February 2019

California Department of Transportation

Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability

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Stakeholder Acknowledgement

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This TCR will be posted on the Caltrans Corridor Mobility website at:
http://www.dot.ca.gov/hq/tpp/corridor-mobility/

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MISSION
Provide a safe, sustainable, integrated, and efficient transportation system to enhance California's economy and livability.

VISION
A performance-driven, transparent and accountable organization that values its people, resources and partners, and meets new challenges through leadership, innovation and teamwork.

GOALS
Safety and Health - *Provide a safe transportation system for workers and users, and promote health through active transportation and reduced pollution in communities.*
Stewardship and Efficiency - *Money counts. Responsibly manage California's transportation-related assets.*
Sustainability, Livability and Economy - *Make long-lasting, smart mobility decisions that improve the environment, support a vibrant economy, and build communities, not sprawl.*
System Performance - *Utilize leadership, collaboration and strategic partnerships to develop an integrated transportation system that provides reliable and accessible mobility for travelers.*
Organizational Excellence - *Be a national leader in delivering quality service through excellent employee performance, public communication, and accountability*.

ABOUT THE TRANSPORTATION CONCEPT REPORT

System Planning is the long-range Transportation Planning process for the California Department of Transportation (Caltrans). The System Planning process fulfills Caltrans statutory responsibility as owner/operator of the State Highway System (SHS) (Gov. Code §65086) by identifying deficiencies and proposing improvements to the SHS. Through System Planning, Caltrans focuses on developing an integrated multimodal transportation system that meets Caltrans goals of safety and health, stewardship and efficiency, sustainability, livability and economy, system performance, and organizational excellence.

The System Planning process is primarily composed of: the District System Management Plan (DSMP), the Transportation Concept Report (TCR), the Corridor System Management Plan (CSMP), and the *DSMP Project List*. The DSMP is a long-range strategic policy and planning document that focuses on maintaining, operating, managing, and developing the transportation system. The Transportation Concept Report (TCR) is a multi-jurisdictional planning document that identifies the existing and future route conditions as well as future needs for each route on the SHS, and informs the DSMP Project List. The CSMP is a more complex document that identifies future needs within corridors experiencing or expected to experience high levels of congestion. The DSMP Project List is a long-range list of conceptual, planned, and partially programmed SHS transportation projects used to recommend projects for funding. These System Planning products are also intended as resources for stakeholders including the public, partners, regional, and local agencies.

The TCR includes detailed review of all transportation modes in the corridor and if applicable, their current and projected levels of operation. Land use, community characteristics, and environmental assessments are described to show a corridor's context and where applicable, are called out as Key Corridor Issues. The TCR also includes Caltrans suggestions for optimizing transportation modes in relation to system preservation, efficiency and expansion. The Corridor Concept, with consideration for various transportation issues, factors and needs, presents the long-term vision for a route during a 25-year planning horizon. Planned and programmed projects from State and local plans and programs are included in this document as well as project proposals to help inform the Caltrans Project Initiation Document (PID) and project development process.

Other policies that guided the development of this document include the Caltrans Strategic Management Plan (2015-2020), Assembly Bill (AB) 32, Senate Bill (SB) 375, SB 391, SB 743, SB 486, SB 32 the California Transportation Plan 2040 (CTP 2040), Deputy Directive (DD) 64-R2, Complete Streets – Integrating the Transportation System, Caltrans Smart Mobility Framework (SMF), the Statewide Transit Strategic Plan (STSP), the California Freight Mobility Plan (CFMP) and the Caltrans Interregional Transportation Strategic Plan (ITSP). Information on these efforts can be found at:

Caltrans Strategic Management Plan:	http://www.dot.ca.gov/perf
AB 32:	https://www.arb.ca.gov/cc/ab32/ab32.htm
SB 375:	http://www.arb.ca.gov/cc/sb375/sb375.htm
SB 391:	http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=200920100SB391
SB 743:	http://www.dot.ca.gov/hq/tpp/offices/omsp/SB743.html
SB 486:	http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201320140SB486
SB 32:	https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB32
CTP 2040:	http://www.dot.ca.gov/hq/tpp/californiatransportationplan2040/2040.html
DD 64-R2, Complete Streets:	http://www.dot.ca.gov/hq/tpp/offices/ocp/complete_streets.html
SMF:	http://www.dot.ca.gov/hq/tpp/offices/ocp/smf.html
STSP:	http://www.dot.ca.gov/hq/MassTrans/statewide-transit.html
CFMP:	http://www.dot.ca.gov/hq/tpp/offices/ogm/cfmp.html
ITSP:	http://www.dot.ca.gov/hq/tpp/offices/omsp/system_planning/itsp.html

STAKEHOLDER PARTICIPATION

Stakeholder participation was sought in the development of this TCR. Outreach involved internal and external stakeholders. During the initial information resource gathering for the TCR, stakeholders were contacted for input related to their particular specializations and to help verify data accuracy. The Draft SR 17 TCR was sent out to the local agencies of San Jose, Campbell, and Los Gatos, as well as Santa Clara County and the Santa Clara Valley Transportation Authority (VTA). Their feedback provided important information for improving the document. The process of working closely with stakeholders adds value and relevance to the TCR.

EXECUTIVE SUMMARY

Route Description

State Route (SR) 17 (Corridor) is situated between San Jose (part of Silicon Valley) and Santa Cruz and traverses the Santa Cruz Mountains. For some, this is the only direct route to and from work. To others, the route serves as an optimal connection between the two regions. On weekends and primarily during the summer, visitors from the San Francisco Bay Area and other points east use this route to access Santa Cruz and the Monterey Bay/Peninsula.

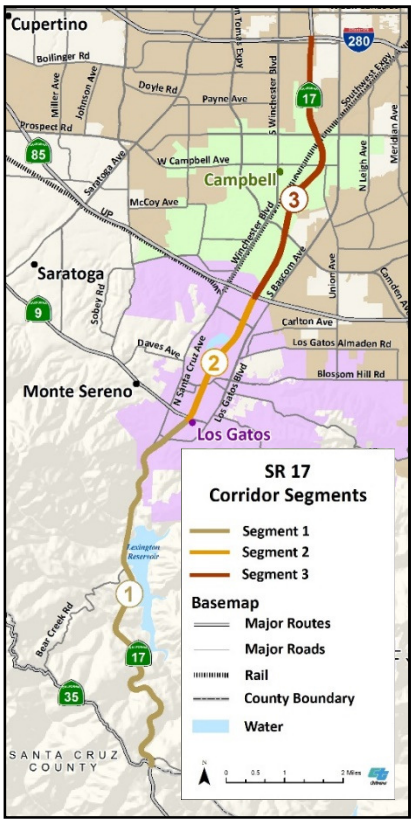

Figure ES1. *SR 17 Segment Map*

In District 4, SR 17 begins at the Santa Cruz/Santa Clara County line and ends at the I-280 interchange, where SR 17 becomes I-880. SR 17 varies between four and eight lanes. The mountainous terrain results in many design constraints, such as sharp curves, with concrete median barriers throughout the route in most areas. Alternative routes are not readily available for detours, thus making extended lane closures especially difficult. Although the route travels through a rugged natural landscape, existing wildlife crossings along SR 17 are limited to culverts that do not allow larger animals to pass through. A new wildlife tunnel crossing is planned near Lexington Reservoir in Santa Clara County.

This Transportation Concept Report (TCR) uses 2013 as the base year (BY) and 2040 as the horizon year (HY) for traffic analyses. By 2040, Santa Clara County is expected to have more than 2 million inhabitants, while Santa Cruz County would be housing close to 300,000 people, an increase of 17 percent and 13 percent respectively since 2010. Population and employment growth may result in more travel in an already congested corridor. Priority Development Areas are established mainly toward the north of the Corridor with the goals of promoting a more efficient land use pattern and a more accessible and reliable multimodal transportation system, which may help reduce the growth rate in congestion within the Corridor. In addition to the existing and forecasted congestion, stakeholders along the SR 17 Corridor also expressed concerns with the cut-through traffic in the Town of Los Gatos, the number of long-distance commuters, and the need for transit, bicycle and pedestrian improvements.

Caltrans District 5 (Santa Cruz County) in collaboration with the California Highway Patrol (CHP), the Metropolitan Transportation Commission (MTC) and the Santa Cruz County Regional Transportation Commission (SCCRTC), organized the Safe on 17 Task Force, a program that helped reduce the number of fatalities and injuries by half within ten years of implementation in 1998.

This TCR also acknowledges that technological advancement such as connected/autonomous vehicles may potentially change travel patterns and have implications for corridor concept development.

Concept Summary

As shown in Table ES1, the 25-year Capital Facility Concept calls for the implementation of Express Lanes in Segment 3 between SR 85 and I-280. In addition, operation and management strategies are proposed, which include Traffic Operation System (TOS) elements such as ramp metering to be implemented within a ten-year time frame. Multimodal improvements are focused on park-and-ride facilities, improvements to the existing Class I bikeway as well as support of the Santa Clara Valley Transportation Authority's (VTA) Vasona light rail extension project. The Post 25-Year Concept includes planning ideas for discussion that require further study.

Table ES1. *Corridor Concept Summary*

Segment	Segment Description	Existing Facility	Ten Year System Operation, Maintenance, and Management Improvements	Ten Year Multimodal Improvements	25-Year Capital Facility Concept
1	PM 0.00 – 7.07 Santa Cruz and Santa Clara County line to SR 9	4C/4F	Traffic Operations System (TOS), Safety Improvements	Class I Bikeway Improvements	4C/4F
2	PM 7.07 – 9.35 SR 9 to SR 85	4F	TOS	Bike Park-and-Ride Facilities, Class I Bikeway Improvements	4F
3	PM 9.35 – 13.94 SR 85 to I-280/I-880	6F – 9F	TOS, Implement Express Lanes	Light-Rail, Class I Bikeway	6F – 9F (2EL)

Legend*:*
F = Freeway Lane C = Conventional Lane EL = Express Lane

Concept Rationale

Mountainous terrain separates the two neighboring regions of Silicon Valley and Santa Cruz. Direct alternative routes are essentially non-existent. In light of strong population and employment growth forecast for both areas, roadway expansion and upgrade would seem necessary. Yet, upgrading Segments 1 and 2 to a six-lane freeway to accommodate current and future demand is not incorporated into the 25-Year Capital Facility Concept because of the geographical constraints and the fact that it would need support from local agencies and communities. The concept therefore remains unchanged for all segments with the exception of implementing Express Lanes in Segment 3. This would involve a conversion of mixed-flow lanes, rather than lane additions. Proposed implementation is 2028.

In the future, people could choose to travel from Santa Cruz to the proposed Gilroy High Speed Rail station by car or by public transportation as an alternative to SR 17, possibly using SR 1 and SR 152. Such alternative route and mode would be most appealing for those traveling to farther locations, such as San Francisco, the San Francisco International Airport (SFO) and Sacramento, and could help alleviate congestion on SR 17. The implementation of this strategy will require collaboration between Caltrans and regional and local jurisdictions from both Santa Clara and Santa Cruz Counties. This TCR recommends a study to further examine this alternative.

Summary of Planned, Programmed and Proposed Projects

Table ES2. *Highlight of Planned, Programmed, and Proposed Projects to Help Achieve Concept*

Segment	Description	Location	Programmed, Planned, Proposed
Motorized On Freeway			
1	Install lighting, warning signs, flashing beacons, guardrail, rumble strips, wet-night visibility striping, and channelizers, and apply High Friction Surface Treatment (HFST)	County line to Los Gatos Main Street	Programmed
3	Santa Clara County SR 17 Express Lanes SR 85 to I-280: Environmental and Design Phase	SR 17 freeway mainline	Planned
3	SR 17/Hamilton Avenue SB off-ramp widening and San Tomas Expressway/SR-17 improvements	SR 17 interchanges at Hamilton Avenue and San Tomas Expressway	Planned
TOS / ITS			
1	Ramp metering	Various SR 17 on-ramps	Planned
Transit			
3	Vasona Light Rail Extension	Off system	Planned
	Improve transit from Santa Cruz to Watsonville and to proposed HSR Gilroy Station	Off SR 17, Santa Cruz-Watsonville-Gilroy	Proposed
Active Transportation			
2, 3	Los Gatos Creek Trail Improvements	Off-system	Programmed/Planned
1, 2, 3	Improve bicycle accommodation at existing freeway crossings and implement new crossings	Various	Planned

See Tables 16 and 17 for more details and a complete list of projects in the Corridor Concept section

SR 17 CORRIDOR

INTRODUCTION

State Route (SR) 17 (Corridor) is a south to north route between Santa Cruz and Santa Clara Counties traversing the Santa Cruz Mountains. The highway in District 4 begins at the Santa Cruz County line, passing through unincorporated Santa Clara County and the Cities of Los Gatos and Campbell, ending at Interstate (I-) 280 in the City of San Jose. On weekends and in the summer, visitors from the San Francisco Bay Area and points beyond use SR 17 to Santa Cruz and the Monterey Bay Area. This route is also used by travelers from Santa Cruz to reach employment centers and other attractions. Prospective destinations include not only downtown San Jose, Diridon Train Station, Mineta San Jose International Airport, and the employment centers in Silicon Valley, but the greater Bay Area and beyond. Between Santa Cruz and San Jose, commuter and recreational travelers have very few options other than SR 17, and none of the alternative routes provides the same direct access or capacity as SR 17 does. For some users, this is the only route between home and work.

Corridor Segmentation

Figure 1. *Segment Map*

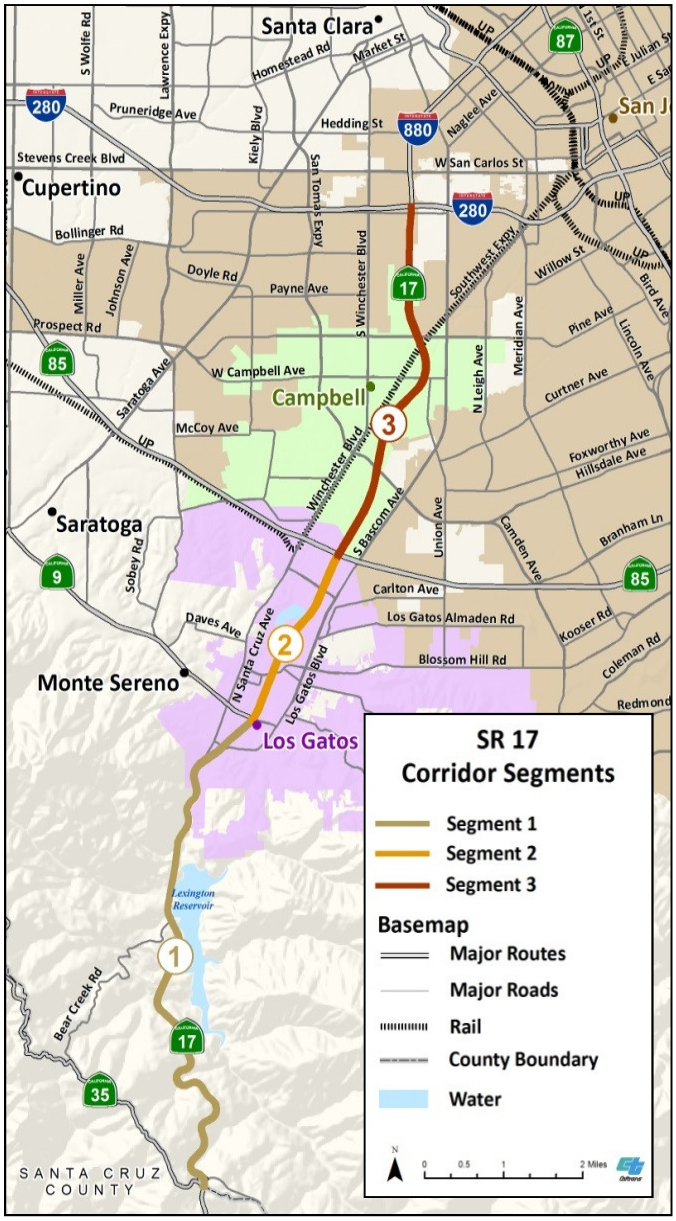

Table 1*. SR 17 TCR Segments*

1	Santa Cruz County/Santa Clara County line to SR 9	Post Mile 0.00	Post Mile 7.07
2	SR 9 to SR 85	Post Mile 7.07	Post Mile 9.35
3	SR 85 to I-280/I-880	Post Mile 9.35	Post Mile 13.94

Corridor Description

SR 17 in District 4 is located between the Santa Cruz/Santa Clara County line and the I-280 interchange where SR 17 becomes I-880. SR 17/I-880 connects Santa Cruz with various Bay Area communities including San Jose, Fremont, Hayward, and Oakland.

Segment 1 starts from SR 35, which forms the boundary between Santa Cruz County and Santa Clara County, and runs through forested lands toward the Santa Clara Valley. Residential development in Santa Clara Valley begins in Los Gatos. Segment 2 is between SR 9 and SR 85. Segment 3, between SR 85 and the I-280/I-880 interchange, is in an urbanized area, passing through the City of Campbell and parts of San Jose.

Public transportation in the Corridor includes the Amtrak Highway 17 Express, which operates between the Santa Cruz Metro Center and the San Jose Diridon

Station, and has one stop in Scotts Valley. The highest frequencies of service occur during commute hours in the peak direction, which is northbound in the AM and southbound in the PM. [1]

Bicycling is permitted on SR 17 between the County line and the edge of Los Gatos, namely the South Santa Cruz Avenue on- and off-ramps. At this location the conventional highway becomes a freeway. Northbound cyclists may remain on SR 17 until SR 9, Saratoga-Los Gatos Road, where they must exit. Due to limited space, shoulders are not always wide enough to accommodate cyclists.

Figure 2. *Limited space for SR 17*

North of SR 35 (Summit Road)
Source: *Stan Shebs, obtained via WikiMedia.*

Safe on 17

The SR 17 Corridor was identified as a high collision corridor in 1998 as a result of collision data analysis and recommendations of local, regional, county and State agencies. An interregional task force was formed to develop collision reducing strategies. *Safe on 17*, a program currently financed by MTC and SCCRTC, has helped reduce the number of fatalities and injuries by half within ten years of implementation. Strategies involve extra CHP officers patrolling SR 17, road improvements, and public education efforts.

Rural Access Management Plan

Starting in June 2015, Caltrans District 5 developed a long-term Access Management Plan, resulting in strategy recommendations that address access, mobility, and safety needs in the SR 17 Corridor in Santa Cruz County. Attention is given to reducing conflict points, coordinating land use and transportation planning, while also preserving the operational levels of both SR 17 and the local roads. This planning effort resulted in a list of funding options to implement the recommended strategies of the plan. Caltrans District 4 participated as a stakeholder in conjunction with VTA and other local agencies. A similar study was not conducted in District 4 since most access points on SR 17 in Santa Clara County have been converted to interchanges or right-in/right-out traffic movements only. Two median openings remain, one at Hebard Road and one at Idylwild Road. State Highway Operations and Protection Program (SHOPP) safety studies warrant closing the median openings at these locations.

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[1] VTA Transit Route 970, accessed November 25, 2014

Additional access improvement strategies involve construction of additional turn-outs, promotion of ride-sharing, transit, and widening travel lanes, shoulders and bridges to meet current standards, as well as implementing more Intelligent Transportation System (ITS) features.

Route Purpose

SR 17 connects communities between Santa Cruz and Santa Clara Counties serving commuter and recreational traffic.

Table 2. *Corridor Description by Segment*

Segment #	1	2	3
Freeway & Expressway	Yes	Yes	Yes
National Highway System	Yes	Yes	Yes
LifeLine and Strategic Highway Network	No	No	No
Strategic Interregional Corridor	No	No	No
Scenic Highway	Eligible	Eligible	Eligible
Caltrans Interregional Road System (IRRS)	Yes	Yes	Yes
Federal Functional Classification	Other Freeway or Expressway	Other Freeway or Expressway	Other Freeway or Expressway
National Highway Freight Network	No	No	No
Truck Network Designation	Terminal Access Route	Terminal Access Route	Terminal Access Route
Metropolitan Planning Organization	MTC	MTC	MTC
Congestion Management Agency	VTA	VTA	VTA
Local Agency	County of Santa Clara, Town of Los Gatos	Town of Los Gatos	Town of Los Gatos, City of Campbell, City of San Jose
Tribes	Ohlone Tribe	Ohlone Tribe	Ohlone Tribe
Air District	Bay Area Air Quality Management District (BAAQMD)	BAAQMD	BAAQMD
Terrain	Mountainous	Rolling	Flat

CORRIDOR SETTING

The transportation corridor exists in a setting that involves more than just the movement of people and vehicles. Land uses, plans and community characteristics are vital aspects that can influence future transportation concepts.

Community Characteristics

Santa Clara County includes approximately 1,300 square miles and has more than 1,919,000 inhabitants (July 2016, U.S. Census estimate). Santa Clara County grew by over seven percent since 2010. The County had a median household income of $93,854 in 2014, and an average of 2.94 persons per household. In 2013, 8.5 percent of the population was living under the federal poverty level (U.S. Census). According to the 2016 Silicon Valley Index, the total number of jobs in Silicon Valley grew almost 20 percent since 2010.

Table 3. *Population Growth Santa Clara County and SR 17 Cities*

	2010	2016	Population growth rate
Santa Clara County	1,781,672	1,919,402	7.73 percent
San Jose	955,290	1,025,350	7.33 percent
Campbell	39,348	40,939	4.04 percent
Los Gatos	29,434	30,545	3.77 percent

Local General Plans

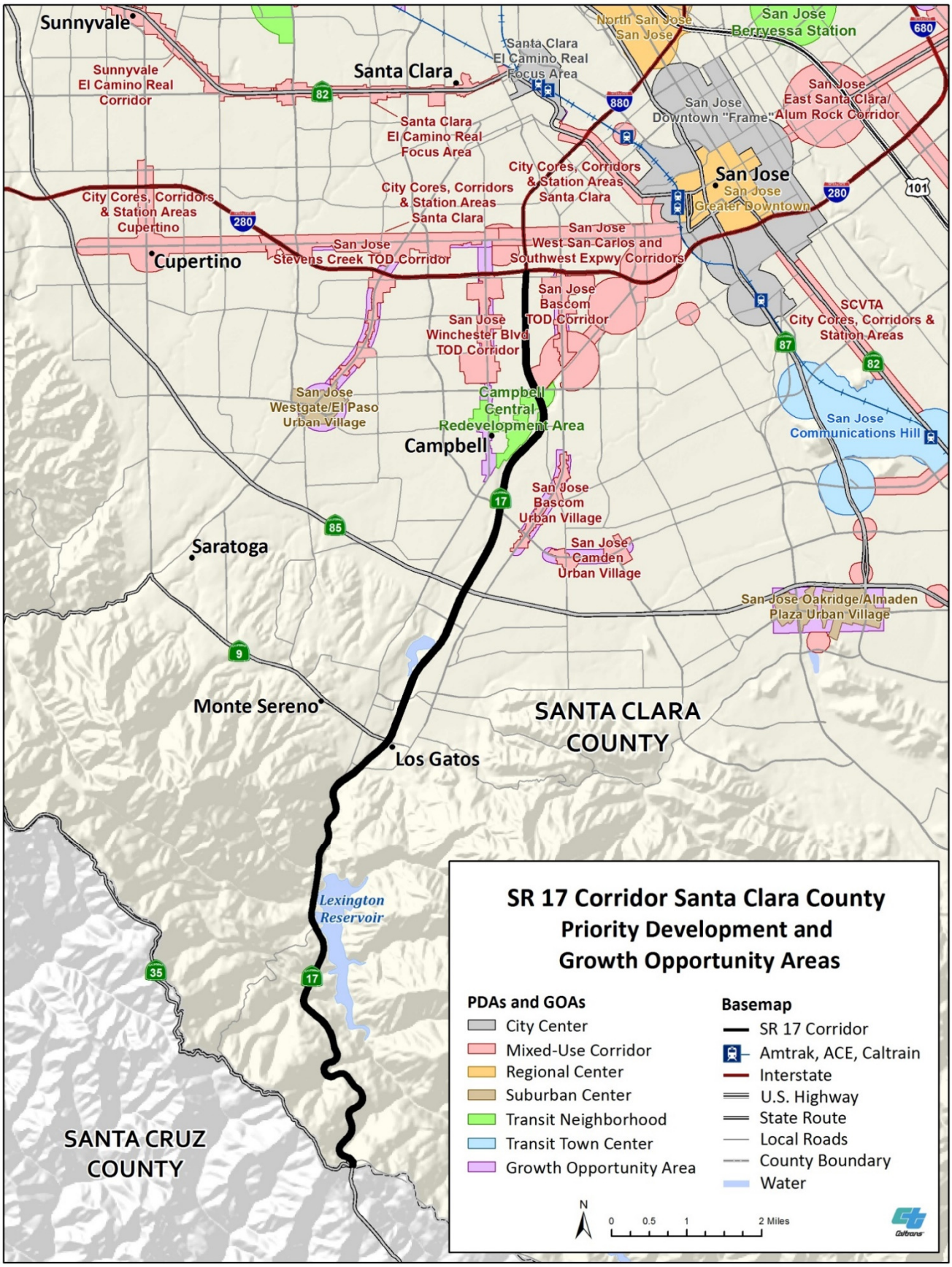
Population and employment growth opportunities are mostly found north of SR 17 in San Jose and Campbell. San Jose has plans to further develop its downtown, North San Jose, and West San Jose areas, which will increase traffic demand for the northern portion of SR 17. Campbell is currently updating its General Plan and has designated a Central Redevelopment Area surrounding downtown Campbell on their current General Plan (see Figure 3). The Los Gatos General Plan emphasizes preserving the "small-town atmosphere" of the town, and also states no capacity improvements for SR 17.

Priority Development and Priority Conservation Areas

Plan Bay Area 2013 is a long-range integrated transportation and land-use/housing strategy, updated in July 2017 as Plan Bay Area 2040, and serves as the Regional Transportation Plan for the San Francisco Bay Area. Plan Bay Area responds to Senate Bill 375 (2008) which requires metropolitan regions in the State to develop a Sustainable Communities Strategy (SCS) to accommodate future population growth while reducing greenhouse gas emissions from cars and light trucks. The identification and establishment of local Priority Development Areas (PDA) will help focus 80 percent of new housing and 66 percent of new jobs forecast for the region. Priority Conservation Areas (PCA) were developed simultaneously for open spaces that need protection from further development. MTC is working on the next RTP/SCS update, to be adopted in 2021.

PDAs are locally-designated areas within existing communities that have been identified and approved by cities or counties for future growth. These areas are typically more accessible to transit, jobs, shopping and other services. Priority Conservation Areas (PCA) are areas identified through consensus by local jurisdictions and park/open space districts as lands in need of protection due to pressure from urban development or other factors. Plan Bay Area 2040 population estimates for the Bay Area include two million new residents and a total population topping nine million. For jobs, the estimated growth by 2040 is 1.1 million new jobs, with the total number of jobs topping 4.5 million for the Bay Area.

Figure 3. *Priority Development and Growth Opportunity Area Map*



Santa Cruz County

Located along SR 17, the Cities of Santa Cruz and Scotts Valley are seen as associated with Silicon Valley, as they both have attracted high tech industries. See Table 4 for a quick view of the Santa Cruz County population and their travel to work. U.S. Census data indicates that almost a quarter of Santa Cruz County residents travel outside of the County for work. Important to note for the SR 17 Corridor is that the population is mainly concentrated in the two communities, Scotts Valley and Santa Cruz. Travelers between the Bay Area and the larger Santa Cruz area including Felton and Capitola are potential users of the SR 17 Corridor, too.

As shown in Table 4, an estimated 26.7 percent of those driving alone, and 29.6 percent of people carpooling, were working outside of Santa Cruz County in 2014. The larger percentage for carpooling, compared to driving alone, can probably be explained by trip length and availability of carpool lanes.

Meanwhile, more than a quarter of the commuters had trips taking longer than 35 minutes (Table 4, gray background). For people who drove alone, close to one in ten traveled more than an hour to work (9.7 percent); while for those taking public transportation, about one in four rode at least an hour to work (24.7 percent).

Among the 28,700 commuters traveling outside the county, about 578 people used transit. That translates to a two-percent public transportation share among those working outside of Santa Cruz County. It should be noted these are countywide statistics and do not just apply to users of SR 17.

Table 4. *Santa Cruz County Transportation to Work, 2014*

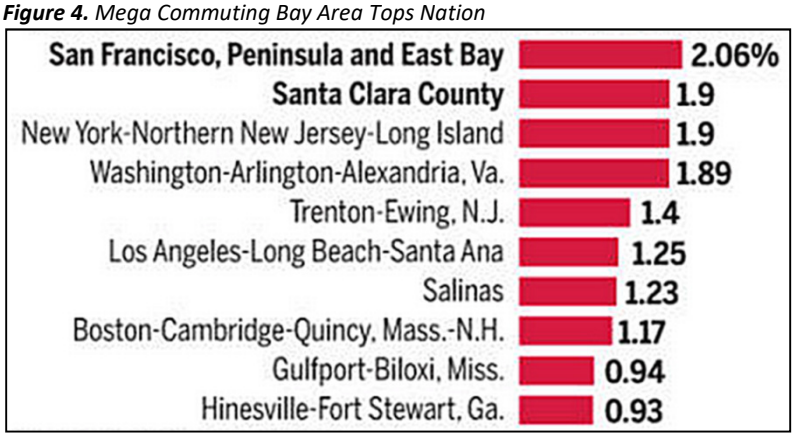
	Santa Cruz County	Total	Car, truck, or van -- *drove alone*	Car, truck, or van -- *carpooled*	Public transportation (excl. taxicab)
Population	Estimated	126,431	88,913	11,847	3,443
Place of Work	In county of residence	97,225 (76.9%)	65,084 (73.2%)	8,293 (70.0%)	2,820 (81.9%)
	Outside county of residence	28,700 (22.7%)	23,740 (26.7%)	3,507 (29.6%)	578 (16.8%)
Travel Time to Work	Less than 10 minutes	12.8%	12.2%	8.0%	0.7%
	10 to 14 minutes	17.6%	17.5%	15.7%	6.6%
	15 to 19 minutes	17.5%	17.6%	18.8%	11.2%
	20 to 24 minutes	12.6%	12.0%	12.1%	16.1%
	25 to 29 minutes	3.5%	3.6%	3.3%	2.6%
	30 to 34 minutes	10.7%	10.3%	13.5%	23.0%
	35 to 44 minutes	6.5%	7.2%	7.5%	4.2%
	45 to 59 minutes	9.4%	10.0%	11.0%	11.0%
	60 or more minutes	9.5%	9.7%	10.1%	24.7%
	Mean travel minutes to work	25.8	26.1	27.6	40.1

Source: *US Census, 2014 American Community Survey 1-Year Estimates*

The number of people in the three travel modes above do not add up to 100 percent, since about 0.5 percent worked out of State, ten percent walked or biked, and about seven percent worked from home.

According to the California Employment Development Department, the reverse commute traffic volume from Santa Clara County to Santa Cruz County is about 20 percent of the northbound volume during the peak period in the morning.

Figure 4. *Mega Commuting Bay Area Tops Nation*



Source: *U.S. Census Bureau, 2006-2010 American Community Survey*[2]

A mega-commuter is defined as someone who drives at least 90 minutes to get to work over a distance of 50 miles or more from home. According to a report in the San Jose Mercury News, a "Bay Area worker is four times more likely than the average American worker to be a mega-commuter, and […] officials say this isn't likely to change anytime soon."

Several factors contribute to the large numbers of mega-commuters in and around the Bay Area, such as fast-growing job markets and much slower-growing affordable housing markets nearby. The report also identifies the availability of freeways as one of the reasons mega-commuters are found in greater numbers. [3]

By 2040, Santa Clara County is expected to have more than two million inhabitants, while Santa Cruz County would be housing close to 300,000 people, an increase of 17 percent and 13 percent, respectively.[4] Population growth will generate greater transportation needs between Silicon Valley and Santa Cruz County, both job-related and for recreational uses.

Caltrans Smart Mobility Framework

In 2010, Caltrans introduced the concept of Smart Mobility through establishment of the Smart Mobility Framework (SMF). The SMF is a transportation planning guide that includes the notion of place types to further integrate smart growth concepts into transportation and land use development. The goal of this framework is to serve as a guide and assessment tool for determining how well plans, programs, and projects meet the definition of "smart mobility" and ensure applicability of the framework for both Caltrans as well as partner agencies. Location efficiency of a place type is measured and ranked based on its community design characteristics and regional access to the transportation system.

Place types help planners determine transportation needs. By identifying what kind of built environment is most prevalent along a State highway corridor, the interrelated challenges of mobility and sustainability in specific areas can become clearer. The analysis is based on Caltrans Mission, Vision and Goals. Once likely transportation, development and conservation investment strategies are identified, a place type location efficiency factor can be applied and further Smart Mobility benefits can be realized in the future.

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[2] U.S. Census as used in Mercury News article, March 7, 2013, accessed December 17, 2014

[3] Mercury News, March 7, 2013, Bay Area Tops Mega Commuters, accessed December 17, 2014

[4] California Department of Finance, Population Projections, accessed December 1, 2014

Figure 5. *Place Type Designations along SR 17*

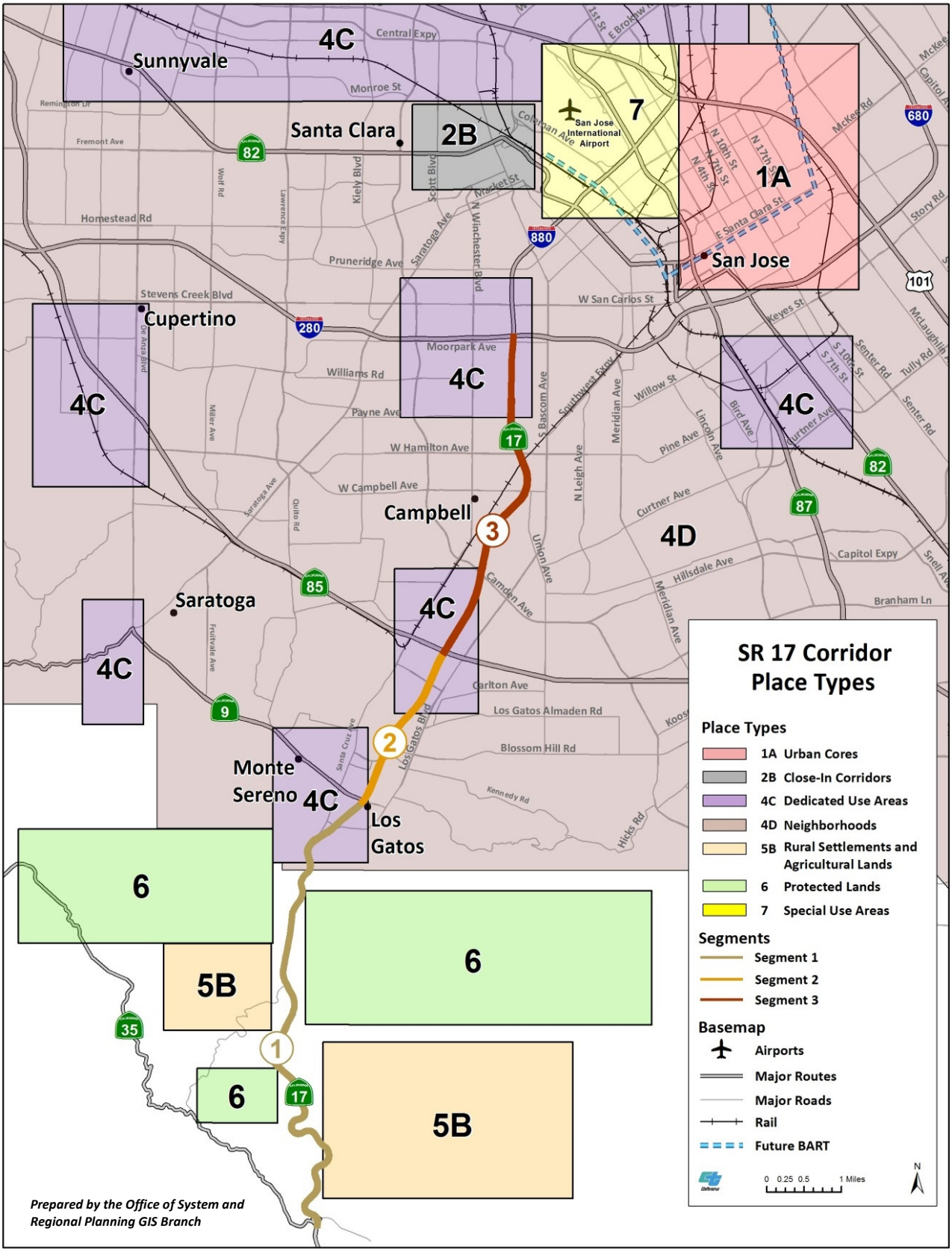


Table 5. *Smart Mobility Framework Place Type Designations along SR 17*

Segment	Place Type	Transportation Strategies
1	*Rural Settlements and Agricultural Lands*	• *Park-and-ride lots; safety improvements for walking and biking on rural roads; demand-responsive transit.*
	Protected Lands	• *Capacity and connectivity increases only when required for resource preservation/management, improving public access.*
	Dedicated Use Areas	• *Investments in Complete Streets and Safe Routes to School; connectivity improvements creating shorter routes.*
2	*Dedicated Use Areas*	• *Investments in Complete Streets and Safe Routes to School; connectivity improvements creating shorter routes.*
	Suburban Neighborhoods	• *Access management and speed management on arterial system.*
3	*Urban Cores*	• *High-capacity and high-speed transit; extensive bicycle network; ongoing reinvestment in existing roadway facilities.*
	Close-in Corridors	• *Complete Streets projects; street network connectivity including extensive bicycle network; addition of HOV lanes.*
	Dedicated Use Areas	• *Investments in Complete Streets and Safe Routes to School; connectivity improvements creating shorter routes.*
	Suburban Neighborhoods	• *Access management and speed management on arterial system.*
	Special Use Area	• *Airport high connectivity to surface transportation systems*

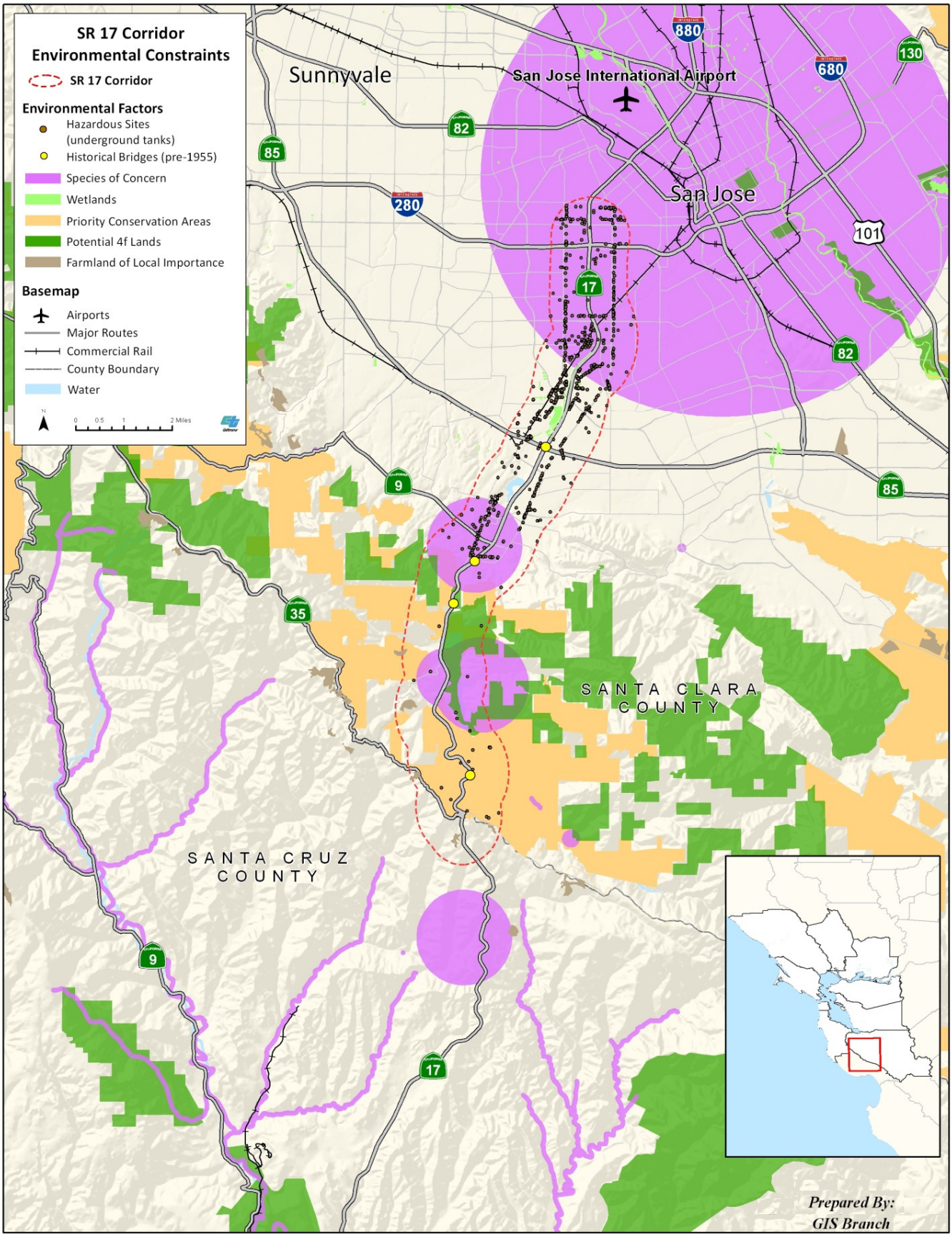
Environmental Considerations

The purpose of the environmental scan is to conduct a high-level identification of potential environmental factors that may require future analysis in the project development process. This information may not represent all environmental considerations that exist within the corridor vicinity. The factors are categorized based on a scale of low-medium-high probability of an environmental issue as determined by District 4 Transportation Planning. Caltrans supports minimizing adverse environmental impacts as an overall strategic objective. One of Caltrans sustainability objectives is to achieve an 80 percent reduction in greenhouse gas emissions below 1990 levels by 2050. Table 6 below lists environmental factors present in the SR 17 Corridor and shows their impact probability.

Table 6. *Environmental Considerations*

Segments	Section 4(f) Land	Farmland/ Timberland	Environmental Justice	Cultural Resources	Geology/Soils/ Seismic	Climate Change and Sea Level Rise Vulnerability	Hazardous Materials	Air Quality				Noise	Waters and Wetlands	Species of Concern	Fish Passage	Habitat Connectivity
								Ozone	PM 2.5	PM 10	CO					
1	*High*	*Med*	*Low*	*Med*	*High*	*Med*	*Med*	*Non-Attainment*	*Non-Attainment*	*Non-Attainment*	*Attainment*	*Med*	*Med*	*Med*	*Low*	*High*
2	*Low*	*Low*										*Low*				
3			*Med*													*Low*

Figure 6. *Environmental Map*



SR 17 has a number of species of concern within its vicinity: Among them are the Robust Spineflower, the California Tiger Salamander, the California Red Legged Frog, and the Rainbow Trout, shown here clockwise starting at the left.

Figure 7b. *California Tiger Salamander*
Source: John Cleckler, obtained via WikiMedia

Figure 7a. *Robust Spineflower*
Source: Lena Chang, USFWS Ventura, via Wikimedia

Figure 7c. *California Red Legged Frog*
Source: John Bettaso, obtained via WikiMedia

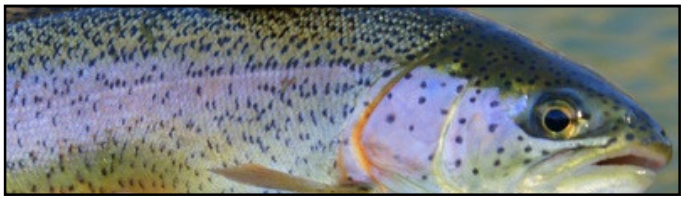


Figure 7d. *Rainbow Trout*
Source: Mike Anderson, obtained via WikiMedia

The natural environment plays other roles in the corridor beyond the natural species. During wet winters, landslides can block lanes and cause major delays, sometimes for weeks. For example, the extreme wet winter of 2016/2017 led to toppled trees and landslides that blocked travel lanes on SR 17, causing major disruption. Major landslides also occurred during the winters of 1982/83 and 1997/98 on SR 17.

CORRIDOR MODES

Caltrans is a multimodal transportation agency, and other jurisdictions and transportation modes are included in this report, guided by Caltrans Strategic Management Plan goals.[5] To achieve a 15 percent reduction (three percent annually) of statewide per capita VMT relative to 2010 levels, reliance on other modes to help achieve this Caltrans target is needed. Where possible, operational coordination of multiple transportation networks and cross-network connections can improve the functioning of the transportation corridor.

Commute Mode Split

While much of the Bay Area economy operates on a 24-hour/seven-day basis, the transportation networks are used most intensely during commute hours. As such, the commute mode split provides an indication how the transportation system is utilized. The General Plan update for the City of San Jose, Envision San Jose 2040, shows mode split in the city (Table 7).

[5] 2015-2020 Caltrans Strategic Management Plan

Table 7. *Traffic Performance San Jose and Target 2040*

San Jose Envision Commute Mode Split	2014	2040 Target
Car, Truck – Driving alone	**77.0 %**	**< 40 %**
Car, Truck – Carpool	**11.5 %**	**> 10 %**
Public Transportation	**4.1 %**	**> 20 %**
Walked	**1.4 %**	**> 15 %**
Bicycled	**1.1 %**	**> 15 %**
Worked at Home	**5.0 %**	No specific target

Source: Envision San Jose 2040, 2015.

The same report states the residents living in downtown San Jose in 2013 had a higher percentage of using alternative transportation modes than residents citywide. Percentages for using transit and walking were at least four times greater than the average.

Pedestrian and Bicycle Facility

With the 2010-12 California Household Travel survey[6] serving as a baseline, two of Caltrans 2020 performance targets are to triple bicycle and double pedestrian trips. The underlying strategic objective is to help improve the quality of life for all Californians by providing mobility choice, increasing accessibility to all modes of transportation and creating transportation corridors not only for conveyance of people, goods, and services, but also as livable public spaces. People may commute by foot or bicycle, but a Complete Streets environment is also meant for leisure and exercise, and can improve the visitor experience of the region.

SR 17 does not have a separate bicycle facility available for those climbing to or descending from Summit Road (SR 35), though local roads can also be used (see Figure 10). Directly north from Lexington Reservoir, the Los Gatos Creek Trail is available for pedestrians and cyclists east of and generally parallel to SR 17 along the creek. When reaching the urbanized area of Los Gatos, this sub-regional trail as well as the creek moves to the west of the route with the creek crossing the freeway underneath and the trail overhead; this bridge is not ADA compliant. A planned improvement is to connect the trail to SR 9 where the trail currently only crosses underneath.

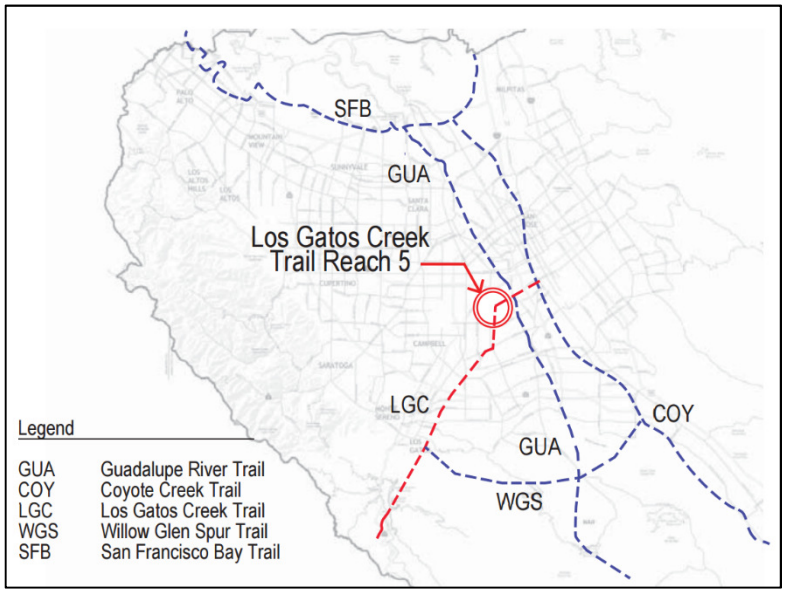


Figure 8. *Trail alignments, open or planned*
Source: *City of San Jose*

The trail and creek then follow SR 17 on the west side until the northern city limits of Campbell when the creek and the trail veer off to the east, crossing under SR 17 at PM 12.0 before heading for downtown San Jose. The plan is to connect the trail to the Guadalupe River Trail (see Figure 8). However, a gap will exist from Lincoln Avenue to Meridian Avenue, where a Class II Bikeway is found on Willow Street.[7] Along SR 17 in Segment 3, a bike lane is available on South Bascom Avenue, between where the trail crosses and Fruitdale Avenue. North of Fruitvale Avenue, the route is not designated as a bike route.

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[6] 2010-12 California Household Travel survey

[7] City of San Jose, Los Gatos Creek Trail, accessed December 24, 2014

VTA's Countywide Bike Plan (2018) identified several crossings over or under SR 17 as unfriendly to bicycles. Bicycle crossing improvements are recommended at Nino Way/Ohlone Court, Hamilton Avenue, San Tomas Expressway/Camden Avenue, Blossom Hill Road, Lark Avenue, and SR 9, and a new crossing is proposed near Lexington Reservoir County Park. Oka road, running parallel to SR 17 just west of the SR 17/SR 85 interchange, has been identified as inadequate for bicycles to cross SR 85, but no project has been planned at this location, while San Tomas Expressway and the Bascom Avenue crossing plans are only partially funded. A corridor study is also planned for the Bascom Avenue that parallels SR 17 north of SR 85.

Large gaps between bicycle crossings are identified along SR 17: between Lark Avenue and Blossom Hill Road, between Campbell Avenue and San Tomas Expressway, between San Tomas Expressway and the SR 17 bicycle/pedestrian overcrossing (PM 9.6), and between Main Street and Bear Creek Road. Additionally, the Westfield Avenue-Downing Avenue bicycle/pedestrian overcrossing is not ADA compliant. The Bike Plan also shows that in the south the Ridgeline Bicycle Corridor can be used by bicyclists to reach Santa Cruz County from the Los Gatos Creek Trail.

Table 8. *Bicycle facility by Segment*

Segment	State Bicycle Facility							Parallel Bicycle Facility			
	Subsegment	Post Mile	Location Description	Bicycle Access Prohibited	Facility Type	Outside Paved Shoulder Width	Posted Speed Limit	Parallel Facility Present	Name	Location Description	Classification
1	A	0.0-4.81	SR 35 to Lexington Reservoir	No	Conventional	0-2 ft.	50 mph.	n/a	n/a	Local road alternatives	3
	B	4.81-6.16	Lexington Reservoir to South Santa Cruz Avenue	No	Conventional	0-8 ft.	50 mph.	Yes	Los Gatos Creek Trail	Bidirectional multiuse path	1
	C	6.16-7.07	South Santa Cruz Avenue to SR 9	Yes	Freeway	n/a	n/a	Yes	Los Gatos Creek Trail	Bidirectional multiuse path	1
2	D	7.07-9.35	SR 9 to SR 85	Yes	Freeway	n/a	n/a	Yes	Los Gatos Creek Trail	Bidirectional multiuse path	1
3	E	9.35-12.06	SR 85 to Campbell Avenue	Yes	Freeway	n/a	n/a	Yes	Los Gatos Creek Trail	Bidirectional multiuse path	1
	F	12.06-13.94	Campbell Avenue to I-280	Yes	Freeway	n/a	n/a	Yes	Bascom Avenue	bike lane/ bike route	2/ 3

In the rural area outside of Los Gatos, the trail along the Los Gatos Creek provides pedestrians the opportunity to walk within the SR 17 Corridor all the way to Lexington Reservoir. The trail is also used by bicyclists, although it becomes steep close to the reservoir. For the remainder of Segment 1, local roads are best used to reach Summit Road in the Santa Cruz Mountains.

The Los Gatos Creek trail also provides bicyclists and pedestrians the option to bike or walk along most of Segments 2 and 3. The exception is the stretch north of Hamilton Avenue, where the trail along the creek continues, but veers away from SR 17. Depending on the destination, one can choose to stay on the trail and travel northeast or continue north on South Bascom Avenue.

A planned improvement is the Los Gatos Creek trail connection to SR 9. At this location the creek trail currently crosses just underneath SR 9. By making connections to SR 9, this trail will attract additional pedestrians and bicyclists. Table 8 describes bicycle facilities by segment that can also be used by pedestrians.

Strava Heat Map

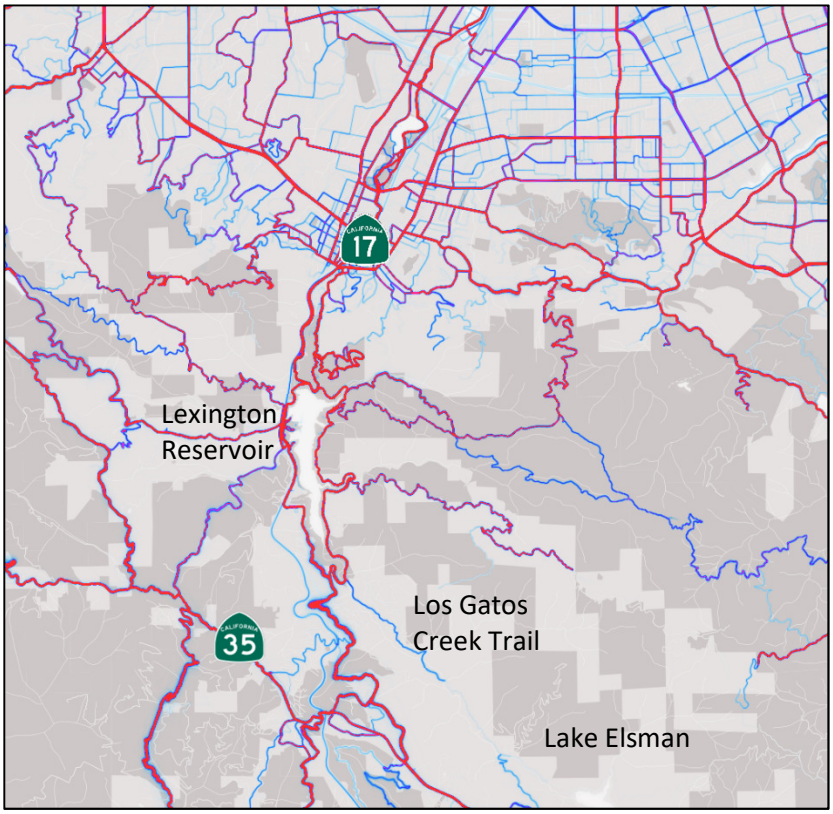
Strava users are runners and bicyclists that use cell phone technology to track their personal achievements. The collective 2015 activities of bicyclists for this area are shown in the heat map below. Activity levels are visible in red and blue, with red indicating the routes that are used most. Please note that the data does not represent all bicyclists, but route popularity can reasonably be estimated.

From this activity map, continuous bike routes can be observed along SR 17, though straight stretches are absent in the hilly area between SR 35 and Lexington Reservoir.

Figure 9. *Los Gatos Creek Trail*

Source: *City of Los Gatos*

Figure 10. *Strava Athlete Bicycle Heat Map, 2015*

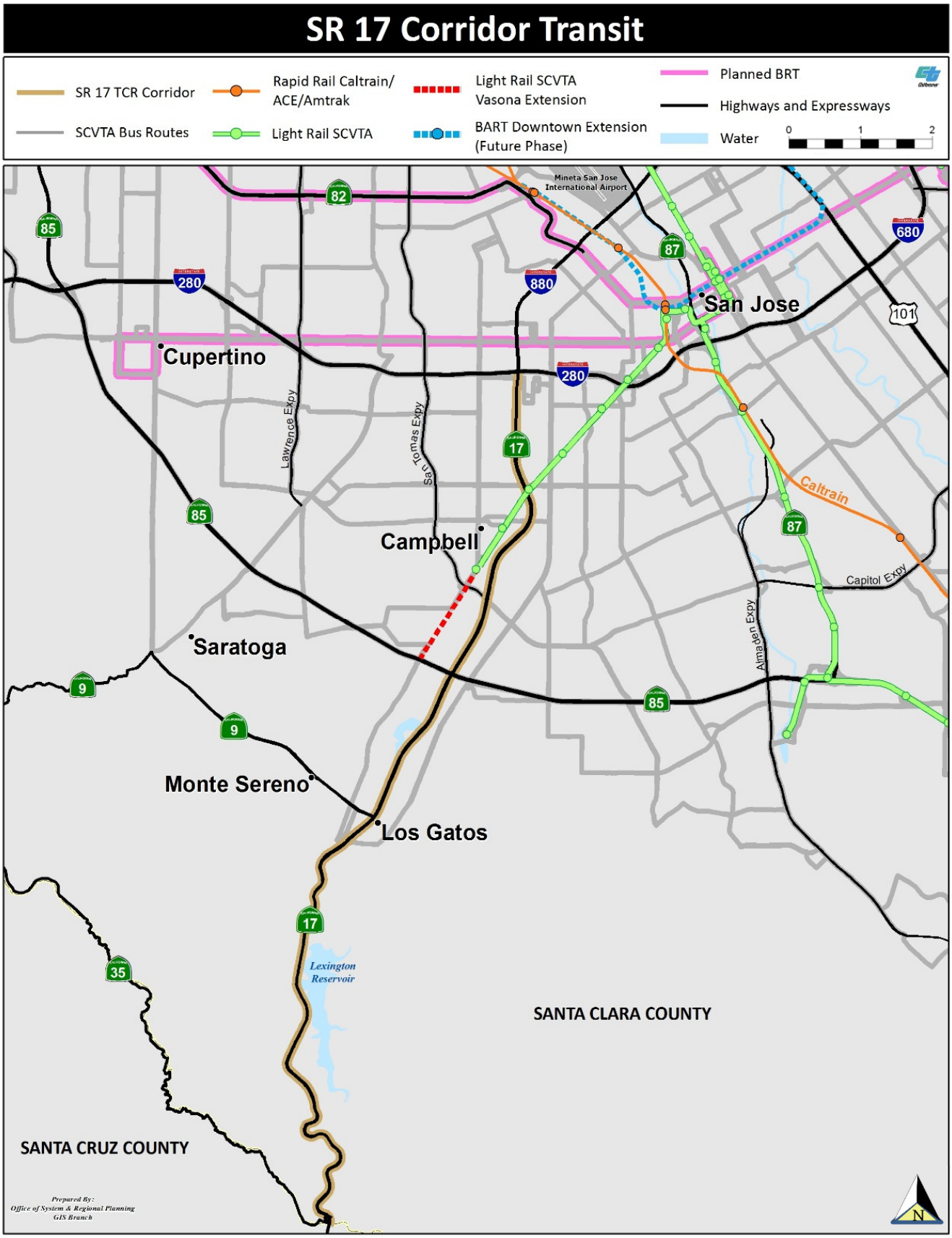


Strava Bicycle Heat Map of the area with red indicating the most heavily used routes.

Transit Facility

The Caltrans Strategic Management Plan 2015-2020 calls for doubling the number of transit trips by 2020, using the 2010-12 California Household Travel survey results as the baseline. In District 4, an extensive managed lane network, which includes HOV lanes and High Occupancy/Toll (HOT) lanes, is frequently used by transit service providers. Other transit such as BART commuter rail and VTA light rail have rail segments within Caltrans right of way. While most transit trips take place away from the SHS, transit is a vital modal choice and Caltrans is partnering with local and regional transit providers to help achieve these strategic goals. In coordination and partnership with the California Transit Association (CTA), the California Association for Coordinated Transportation (CalACT), and transit stakeholders across the State, the 2012 Statewide Transit Strategic Plan sets a new direction that emphasizes support for public transportation in the future.

Figure 11. *Transit Map*



Areas along SR 17 located within the greater San Jose area are well served by transit, including light rail, BRT and other bus services. Private shuttles and taxis augment transit services. Diridon Station is an important transit hub in the Santa Clara Valley serving Caltrain, the Altamont Corridor Express (ACE) and the Capitol Corridor, as well as VTA light rail and buses. According to the 2013 US Census, about 3.5 percent of the population in Santa Clara County uses public transportation to travel to work, some bringing their bicycles on board of trains or buses, although limitations to bike accommodation apply. Transit service found along the SR 17 Corridor is listed in Table 9.

Table 9. *Transit Modes and Facilities by SR 17 Segment*

Segment	Mode & Collateral Facility	Name	Route End Points	Ridership trips	Operating Period	Stations		Bikes Allowed	# Parking Spaces
						Name	Post miles		
1, 2, and 3.	Bus	48	Los Gatos to Winchester	410 per weekday	6:10 AM - 8:30 PM	Via Winchester Boulevard	6.55 to 11.007	yes	54
		49	Los Gatos to Winchester	275 per weekday	6:30 AM - 7:45 PM	Via Los Gatos Boulevard	6.55 to 11.007	yes	
	Express Bus	Highway 17 Express	Santa Cruz to Diridon Station	1,250 per weekday	4:45 AM - 11:45 PM	n/a	Full length	yes	--
2 and 3	Bus	61	Good Samaritan Hospital to Sierra/Piedmont	1,750 per weekday	5:40 AM - 10:30 PM	Via Bascom	9.212 to G13.94	yes	24
		62	Good Samaritan Hospital to Sierra/Piedmont	1,700 per weekday	5:30 AM - 11:00 PM	Via Union	9.212 to G13.94	yes	
3	Rail	Amtrak Capitol Corridor	San Jose to Auburn	1.7 million per year	AM/PM commute	Diridon Station	--	yes	581
		ACE	San Jose to Stockton	3,700 per weekday	AM/PM commute				
		Caltrain	Gilroy to San Francisco	52,000 per weekday	5:00 AM - 1:30 AM				
	Light Rail	VTA	Mountain View to Winchester via Diridon Station	13,500 per weekday Station: 950	5:15 AM - 12:14 AM	Winchester Station	11.007	yes	54
				13,500 per weekday Station: 410	5:16 AM - 12:15 AM	Campbell Station	11.516	yes	29
				13,500 per weekday Station: 230	5:18 AM - 12:17 AM	Hamilton Station	12.32	yes	--
				13,500 per weekday Station: 390	5:20 AM - 12:19 AM	Bascom Station	12.717	yes	24
	Express Bus	101	Camden to Palo Alto	70 per weekday	AM/PM commute	n/a	10.203 to 12.353	yes	--
	Bus	25	De Anza College to Alum Rock	7,000 per weekday	5:00 AM - 12:30 AM	n/a	13.384 to 13.873	yes	--
		26	Eastridge Transit Center to Sunnyvale	3,770 per weekday	5:30 AM - 11:50 PM	n/a	10.642 to 11.855	yes	--
		37	West Valley College to Capitol	690 per weekday	6:30 AM - 10:15 PM	n/a	10.207 to G13.94	yes	--
		60	Winchester to Great America	2,350 per weekday	5:30 AM - 11:00 PM	n/a	11.007 to G13.94	yes	--

Bus

Within the greater urbanized area, the SR 17 area has a number of bus routes, including VTA bus Routes 25, 60, 61, and 62. Towards Campbell, there are Routes 26, 37, 48, 49, and the 101 Express Bus Route. Additionally (not shown in Table 9), Routes 328 and 330 are limited stop bus routes crossing the Corridor.

Along Segment 2, the options are more limited with Routes 48 and 49 providing service west and east of SR 17, respectively. Along Segment 1, the Highway 17 Express is available with service between San Jose Diridon/Downtown and the Metro Center in Santa Cruz. Service frequency varies depending on time of day (as short as 15-minute headways during commute hours, but less frequent during the mid-day).

Light Rail

The Winchester Station terminal for the Mountain View-Winchester light rail line also functions as a Transit Center for local bus routes and express bus service. It is one of the four light rail stations within the SR 17 Corridor. The other three are Downtown Campbell Station (see image), Hamilton Station, and Bascom Station. Further down the line, transfers are available to (inter)regional rail at Diridon Station to Amtrak, Caltrain and ACE. VTA adopted the Next Network operations plan in anticipation of the new BART operations; an express bus study assessment is also forthcoming.

Figure 12. *Downtown Campbell Light Rail Station*
Source: Brianvdb, obtained via WikiMedia.

Vasona Light Rail extension

Extending the light rail from Downtown San Jose to Winchester Station in Campbell was completed in 2005 as the second phase of the light rail extension. Phase III of the project entails extending the route from Winchester Station to Vasona Junction, close to SR 85. This phase is still being planned and project funding has not been identified. An additional Park-and-Ride lot is being considered for the terminal at Vasona.

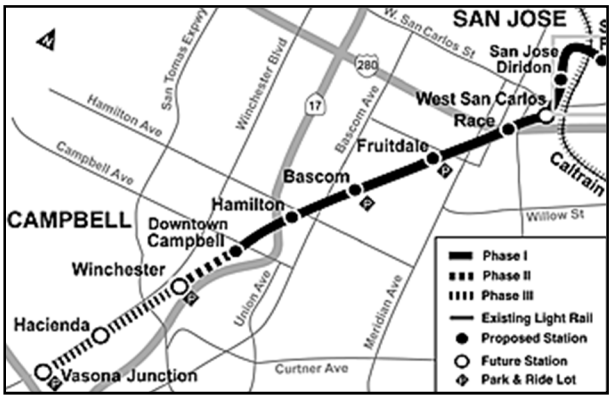


Figure 13. *Extension to Vasona*
Source: lightrail.com

Park-and-Ride

Three Park-and-Ride lots are found near SR 17, two at light rail stations: Winchester and Bascom Stations. The third Park-and-Ride lot is located at the summit (SR 35). In Santa Cruz, park-and-ride lots are found near the SR 17 Corridor in Scotts Valley (Mount Hermon Road) and in the City of Santa Cruz (Pasatiempo overcrossing).

Bicycle Parking

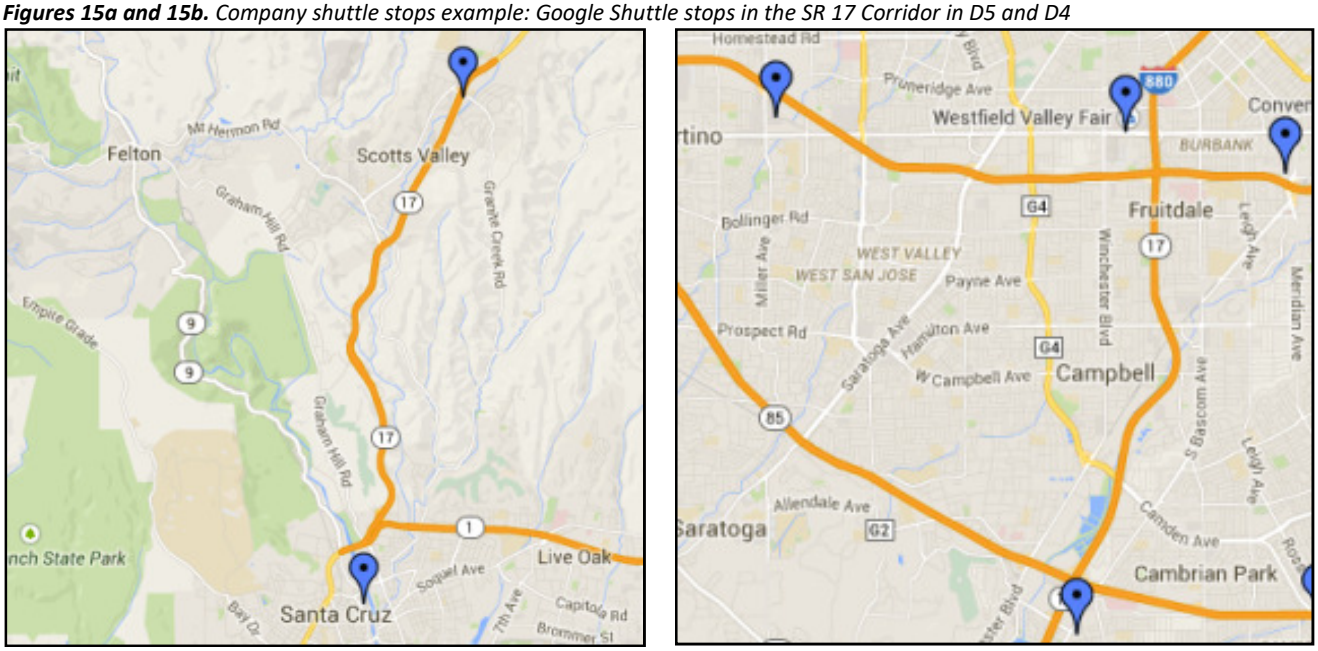
Opportunities may exist for VTA to increase its ridership by providing additional bicycle parking at its transit stations. Quality rail transit and free bicycle parking can help overcome what is known as the first-mile/last-mile problem. By providing secure quality parking, cyclists can ride a bike from their home, leave it parked at a rail station, and take the train or light-rail for the remainder of their trip.

Figure 14. *Bicycle treatment*
Source: Joe Mabel, obtained via WikiMedia.

Company Shuttle Service

Many large tech companies provide bus shuttles for their employees that include Wi-Fi on board. In 2014, Apple had, on average, 1,600 employees riding their free biodiesel buses, and Google shuttles more than 6,000 employees to its offices from around the Bay Area and Santa Cruz. Both Apple and Google run shuttles that make use of SR 17. Whereas Apple has three stops in Santa Cruz County, Google has two (see Figure 15). Located close to SR 17 in Los Gatos, Netflix also provides shuttle service for its employees.

Figures 15a and 15b. *Company shuttle stops example: Google Shuttle stops in the SR 17 Corridor in D5 and D4*



Source: Google

Future Projects

Construction of the first phase of the BART Silicon Valley Extension Project (to Berryessa Station) is nearing completion, while the second phase to Downtown San Jose, which includes a future station at the San Jose Diridon Station, will start construction in 2020/2021.

The future California High-Speed Rail (HSR) line between Los Angeles and San Francisco is also scheduled to stop at the San Jose Diridon Station.

Capacity Constraints on the Light Rail System

The Vasona light rail line is a single-track light rail service between Downtown Campbell and Bascom Station as well as between Fruitdale Station and Diridon Station. The single-track alignments measure a little over one mile and close to one and a half mile, respectively. Single track services limit capacity and require greater coordination in operations. Double-tracking the entire alignment will improve operation service options and efficiency.

SPUR San Jose Report

The San Francisco Planning and Urban Research Association (SPUR), who opened an office in San Jose in 2012, published a report on Santa Clara County transportation opportunities. The report, called *Freedom to Move,* provides strategies on how to move forward towards a new multi-modal transportation "culture" in Santa Clara County.[8] One strategy for the urban core area is to make "bus and light-rail services […] frequent, productive, appealing and easy to access and navigate", and to improve travel times for high-demand transit trips so they are "competitive with the car." For suburban areas where transit service is impractical to run and transit stations are hard to access, the report suggests VTA "pilot new kinds of transportation services […] such as ridesharing, bikesharing, smartphone apps and new vehicle technology."

Rail Corridor Feasibility Study

A Santa Cruz-Los Gatos Rail Corridor Feasibility Study was conducted in 1994 to assess the feasibility of providing passenger rail service in the SR 17 Corridor at a conceptual level. Because a rail connection existed once between Santa Cruz and San Jose, a new rail service can take advantage of/upgrade some of the existing infrastructure, including existing tunnels. However, to implement a full service, large capital investments are needed. Converting the 1994 cost figures from the study into 2018 dollars, the estimates for various alternatives, including a rail alignment on SR 17, hover around $1.1 billion.

The study estimated that almost 8,500 commuters would switch to light rail, among other alternatives. The estimated travel time in 1994 was also comparable to that of driving under today's typical conditions. Many factors, including rail technologies, have changed since the completion of the study. Therefore, this TCR proposes a new study to reexamine the feasibility of providing passenger rail service within the SR 17 Corridor.

High Speed Rail Connections

The future High Speed Rail could serve as an alternative to SR 17 for some users. Instead of using SR 17, residents in the Santa Cruz area could choose to travel to the Gilroy HSR station and take the high speed train to destinations such as San Francisco, SFO Airport or Sacramento in the future. Time savings and comfort offered by HSR could make this alternative more appealing, especially to those traveling longer distances.

As Figure 16 shows, the majority of the morning commuters on SR 17 originates from the Santa Cruz/Monterey Bay Area; a number of people using this route start their trip as far south as Monterey and Carmel. The future Gilroy HSR Station may attract passengers from a wide area, providing an alternative for traveling on SR 17.

The success of this HSR alternative is dependent on how reliable the transportation connection is

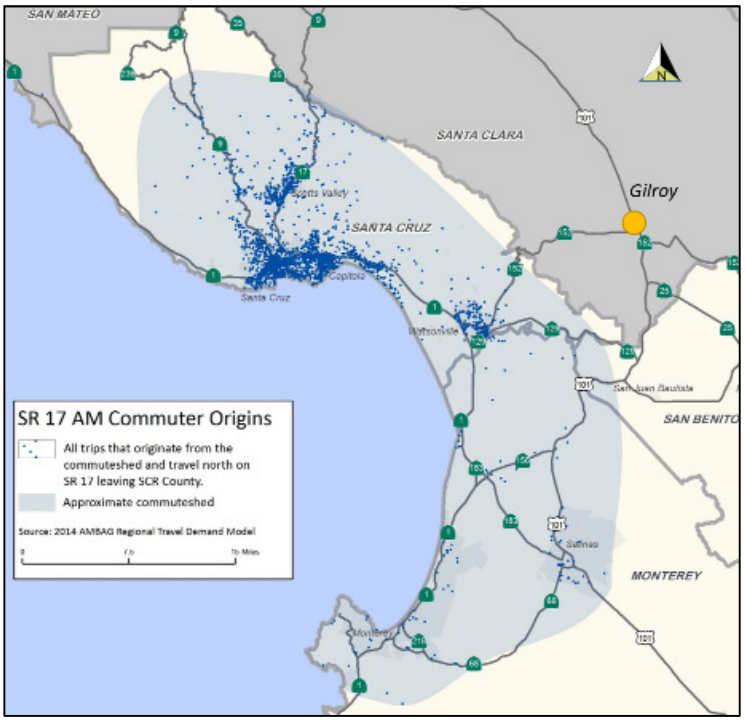


Figure 16. *Origin of SR 17 Morning Commuters*

[8] Freedom to Move, transportation publication by SPUR San Jose, 2014, accessed January 22, 2015

between the Santa Cruz/Monterey Bay Area and Gilroy. One can opt to drive to Gilroy via SR 1 and SR 152 (or the lengthier SR 1, SR 129 and US 101 route). The SR 1 TCR of District 5 indicates severe congestion on SR 1. SR 152 is currently operating at level of service C west of US 101 in Santa Clara County (VTA Monitoring Report 2016), but the mountainous section northeast of Watsonville may have difficulties handling a surge in travel demand. Two alternatives to driving should be studied.

The first alternative involves a rail connection between Santa Cruz and Gilroy. In 2012, the Santa Cruz County Regional Transportation Commission bought the rail line between Santa Cruz and Watsonville, and a transit feasibility study was completed in 2014 for passenger service between these two cities. Measure D, a 30-year half-cent sales tax measure for transportation projects that was passed in November 2016, will help fund maintenance of the existing rail corridor and study passenger service further. An expansion of this rail service to Gilroy would connect Santa Cruz to the future HSR.

The second alternative involves a high-quality bus connection, in the form of either a BRT service with dedicated Right-of-Way or an enhanced bus service that incorporates certain BRT features such as queue jump lanes and signal prioritization. Of the two, the BRT would offer a faster service, but the enhanced bus alternative would likely be more affordable to implement.

Freight

Table 10. *Freight Generators*

Facility Type/Freight Generator	Location	Mode	Facility Name	Major Commodity/ Industry	Comments/Issues
Mineta San Jose International Airport	*San Jose*	*Air*	*SJC*	*Hi-tech*	*Six percent of Bay Area cargo ships via Mineta*
Highway/Freeway	*Santa Cruz to San Jose vicinity*	*Truck*	*SR 17*	*Trucking*	*Limited highway capacity*

While truck volumes on SR 17 are relatively low – trucks comprise around three percent of all traffic – the proportion of five-axle trucks can be as high as one-third of the total truck traffic. Truck speed restrictions are in place for both the climb and descent in this mountainous area. Because climbing is much harder for trucks than regular traffic, a slower 'climbing lane' occurs almost naturally in the right lane in the southbound direction, with faster cars driving in the left lane. Meanwhile, there is a speed restriction on trucks going downhill of 35 mph, also leading to a de-facto northbound truck lane in the right lane.

STAA truck designation for SR 17 is *Terminal Access* from SR 1 to I-280, meaning a regular truck road with access to terminals and facilities. The same designation continues on I-880 until US 101. It is important to note that SR 17 is the only direct truck route between Santa Cruz and Silicon Valley. Alternatives are SR 9 (with a lower classification of CA Legal Advisory Route) and SR 1 south to US 101 via SR 129 (a longer distance); SR 152 has special restrictions on trucking.

State Highway Characteristics and Performance

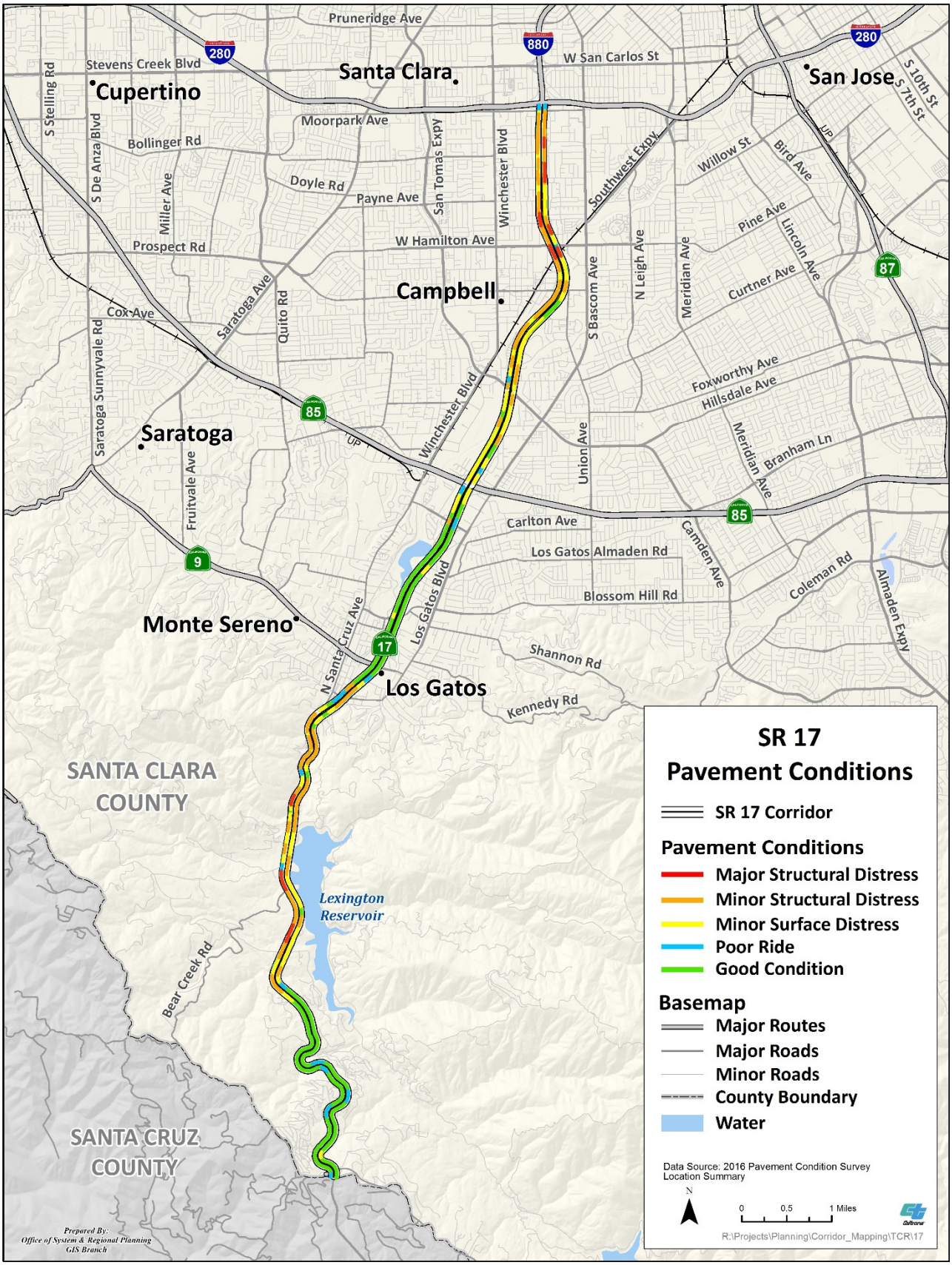
From the Santa Cruz County line to Los Gatos, SR 17 is a conventional four-lane highway with a median barrier separating both directions most of the way. Due to space constraints, median and shoulders are limited to a few feet or even absent altogether. At the on and off-ramps at South Santa Cruz Avenue in Los Gatos the route becomes a four-lane freeway, and median and shoulders are at least eight-feet wide. After crossing SR 85,

the route starts with four lanes, but lane configuration varies with mostly lane additions. Segment 3, from SR 85 to I-280, typically has eight lanes. Median and shoulders are eight feet or wider (see Table 11). Auxiliary lanes are mainly found in this segment. In this segment the median is paved and rail is present. As such, this segment is similar to I-880 in characteristics.

An Express Lane is planned for Segment 3 in each direction. This would involve a conversion of a mixed flow lane to an HOV lane and later to an Express Lane. No HOV or Express Lanes are planned for the other two segments. The geographical constraints make it very difficult to establish additional HOV or Express Lanes in Segment 1. Segment 2 is less constrained, but would still require additional right of way acquisition. As a result, they are not included as part of the 25-year Corridor Concept.

As of 2016, many sections of SR 17 are showing distress in pavement conditions, especially in Segments 1 and 3, as shown in Figure 17.

Figure 17. *Distressed Pavement 2015*



As shown in detail in Table 11, the SR 17 facility type changes from an expressway in the mountainous area to a freeway in the Santa Clara Valley. While SR 17 remains the preferred transportation facility connecting the two regions of Santa Cruz and Silicon Valley, the rugged terrain along the route limits the possibility of upgrading it to a full freeway. Shoulder width and median width are limited in Segment 1. The cost of acquiring additional right of way is expensive and major redesign of the roadway would be required to upgrade the facility. The General Plan of Los Gatos also indicates that capacity improvements for SR 17 are not desired.

Table 11. *State Highway Characteristics*

Segment #	**1**	**2**	**3**
Existing Facility			
Facility Type	E, F	F	F
Total Lanes	4	4	6 - 9
Centerline Miles	7.07	2.28	4.59
Median Width	2 – 54 feet	34 – 50 feet	12 – 42 feet
Median Characteristics	Concrete Barrier	Paved/ Landscaped	Concrete Barrier, Paved
HOV/Express Lanes	0	0	0
Auxiliary Lanes	0%	1%	20%
Shoulder	0 – 8 feet	8 – 16 feet	10 – 16 feet
Truck Climbing Lanes	0	N/A	N/A
Distressed Pavement	8%	0%	2%
ROW	100 feet and up	160 feet and up	230 feet and up
Concept Facility			
Facility Type	E, F	F	F
General Purpose Lanes	4	4	6 - 9
Express Lanes	0	0	2
Post-25 Year facility			
Facility Type	F	F	F
Total Lanes	6	6	6 - 9
Express Lanes	2	2	4
Total ROW Needs	120-150 feet	120-180 feet	120-180 feet
TMS Elements			
TMS Elements (2013)	CCTV, CMS, TMS,	CCTV, CMS, TMS,	CCTV, CMS, TMS, Ramp Metering
TMS Elements (2040)	CCTV, CMS, TMS,	CCTV, CMS, TMS,	CCTV, CMS, TMS, Ramp Metering

E=Expressway, F=Freeway

VTA Travel Forecasting

Vehicular traffic performance analysis for SR 17 is based on the VTA Demand Model. The 2013 base year data is based on model estimate. For 2040, the forecast assumes the completion of BART Phase II extension to downtown San Jose and Santa Clara, but not the HSR. Of the three segments, Segment 3 from SR 85 to I-280 carried the most traffic in 2013, and is expected to remain so in 2040. Segment 1 carried the least amount of traffic in 2013 – approximately 43 percent less than that in Segment 3.

Growth is forecast for all segments, with 18,631 and 18,274 more vehicles in Segment 1 and 2, respectively. The largest growth is 19,046 in Segment 3, but this is only marginally larger than the growth in the other two segments. In 2040, Segment 1 is projected to carry close to two-thirds the volume of Segment 3. Peak hour traffic data suggests that growth occurs for a good extent during non-peak hours, and the directional splits moves toward being more even in all segments in 2040. This can partially be explained because capacity in the peak direction may be reached already (assuming 2,000 vehicles per lane per hour), and there is limited potential for further growth in traffic volume for some sections of the route at that time.

The numbers in bold used for the directional split in the lower sections of Table 12 represent the peak direction numbers; the largest volumes in the peak direction are highlighted in darker green and orange. For instance, with three general purpose lanes and an auxiliary lane, NB Segment 3 had 6,290 vehicles during the AM peak hour in 2013 (shown on the dark green background) and it accounted for 52 percent of trips during that period.

Table 12. *Traffic Performance on State Highway*

Segment	1	2	3
Basic System Operations			
AADT 2013	56,500	69,500	98,500
AADT 2040	75,000	88,000	117,500
AADT: Growth Rate/Year	1.22	0.97	0.72
VMT 2013 per day	399,500	158,500	452,000
VMT 2040 per day	531,500	200,250	539,250
Truck Traffic 2013			
Total Average Annual Daily Truck Traffic	1800	1950	3050
Total Trucks (% of AADT)	3.2	2.8	3.1
5+ Axle Average Annual Daily Truck Traffic	750	700	1100
5+ Axle Trucks (as % of AADT)	1.3	1.0	1.1
Truck Traffic 2040			
Total Average Annual Daily Truck Traffic	1900	2050	3400
Total Trucks (% of AADT)	2.5	2.3	2.9
5+ Axle Average Annual Daily Truck Traffic	700	700	1100
5+ Axle Trucks (as % of AADT)	0.9	0.8	0.9
Peak Hour Traffic Data 2013			
AM NB Peak Hour Demand	3950	5020	6290
AM SB Peak Hour Demand	2650	3820	5830
AM Peak Hour Directional Split (NB/SB)	***60***/40	***57***/43	***52***/48
PM Peak Hour Directional Split (NB/SB)	39/***61***	47/***53***	46/***54***
PM NB Peak Hour Demand	2410	3650	5940
PM SB Peak Hour Demand	3770	4120	7040
Peak Hour Traffic Data 2040			
AM NB Peak Hour Demand	3990	5070	7330
AM SB Peak Hour Demand	3420	4770	7050
AM Peak Hour Directional Split (NB/SB)	***54***/46	***52***/48	***51***/49
PM Peak Hour Directional Split (NB/SB)	48/***52***	50/***50***	47/***53***
PM NB Peak Hour Demand	3810	4520	6730
PM SB Peak Hour Demand	4140	4570	7670

The traffic data also shows how the Corridor is an important commuter and travel route between Santa Cruz and Santa Clara County/the City of San Jose, as indicated by the high AADT and peak hour volumes. With various attractions/destinations in both regions, SR 17 is and will continue to be serving interregional travel.

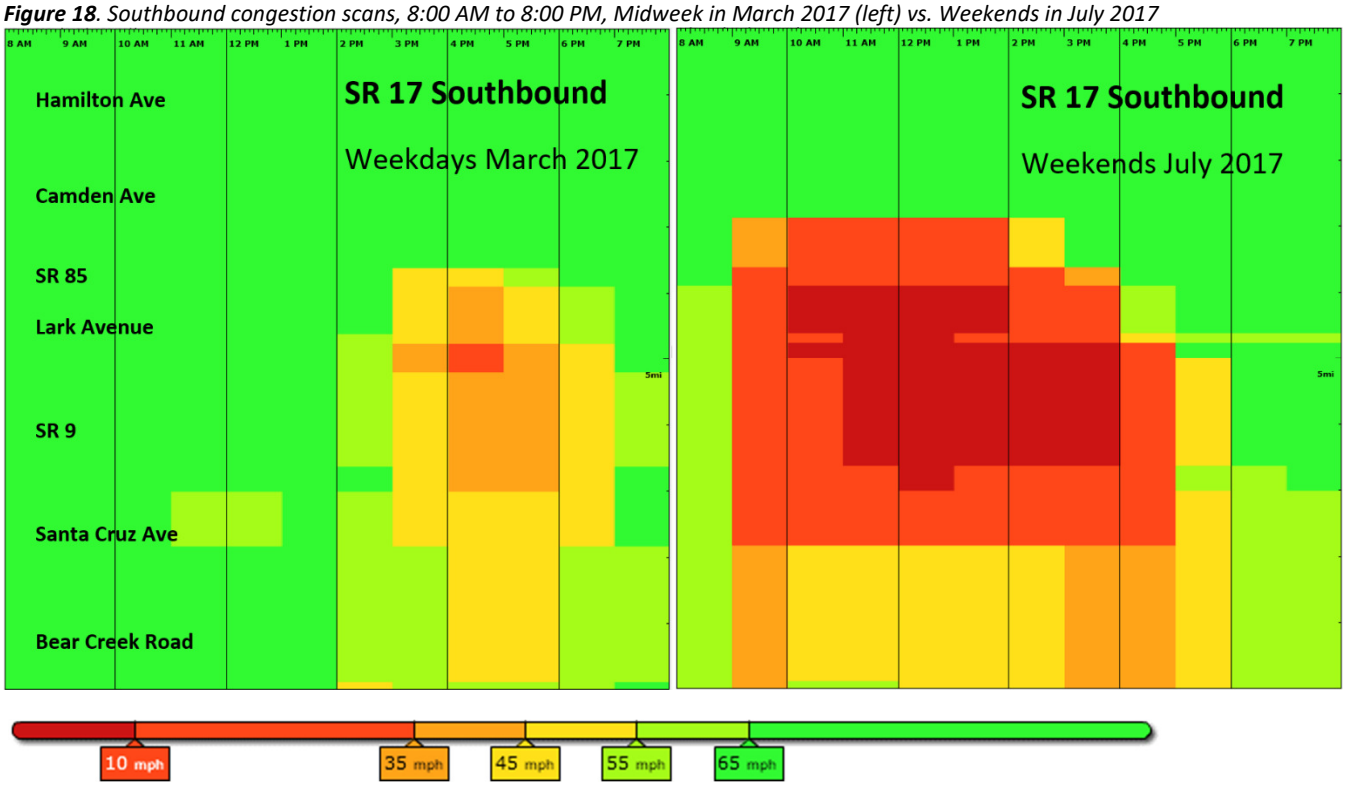
The number of trucks using SR 17 is relatively low at around three percent. Although growing in absolute numbers, truck traffic is predicted to account for a smaller share of total vehicular volume in 2040. As mentioned before, over one-third of truck traffic are trucks with five-axles or more.

Local Roadway

There are no local roadways along the mountainous section of SR 17 that function as a parallel route. Yet with lower volumes of traffic and low posted speed limits, these local roads provide opportunities for pedestrians and bicyclists to circumnavigate the mountainous area, even though many of them offer minimum lane width with no shoulder. Between Los Gatos and I-280 in San Jose/unincorporated Santa Clara County, Santa Cruz Avenue/ Winchester Boulevard to the west and Los Gatos Boulevard/Bascom Avenue to the east are generally within a half-mile from SR 17 and function as parallel routes. These parallel routes connect to SR 17 via a number of arterials: Saratoga-Los Gatos Road, Lark Avenue, San Tomas Expressway/Camden Avenue, and East Hamilton Avenue. Sidewalks are present on these routes, but they don't provide continuous Class II bike lanes. The majority of the parallel routes accommodate bus transit service.

The Town of Los Gatos experiences heavy cut-through traffic impacts during summer weekends and holidays. Motorists heading toward Santa Cruz beaches use the local streets as alternative routes to avoid congested SR 17, causing local gridlock. The situation may be exacerbated by cellular phone navigation applications that encourage use of alternate routes. In the past, remedial actions were taken by town staff, such as weekend signal timing modifications, freeway signage, and temporary closures of roadway to help keep traffic from diverting onto the town roadways.

***Figure 18**. Southbound congestion scans, 8:00 AM to 8:00 PM, Midweek in March 2017 (left) vs. Weekends in July 2017*



The southbound congestion scan of the weekday evening commute, shown in Figure 18 (left), indicates reoccurring bottlenecks at Lark Avenue and at SR 9. The weekday congestion appears mild compared to southbound weekend traffic congestion, while weekday northbound congestion (not shown) does not occur regularly. Shown to the right in Figure 18, severe southbound congestion with speeds of 10 mph or slower occurs

throughout the weekend from SR 85 to SR 9. These severe conditions taper off quickly after leaving Los Gatos town limits. In the northbound direction (not shown), weekend congestion occurs after 4:00 PM, but particularly between 8:00 and 10:00 PM.

As indicated in the weekend congestion scan, the primary southbound bottleneck is at South Santa Cruz Avenue, where SR 17 transitions from a freeway to a conventional highway. The queue from this bottleneck extends upstream as far as north of SR 85. There are also secondary bottlenecks contributing to the congestion, including the SR17/SR 9 interchange and the lane drop south of Lark Avenue.

The General Plan of Los Gatos discourages widening of the freeway. While Caltrans does not plan to close any on or off ramps, increasing alternative modes of transportation should be considered for relieving traffic congestion on SR 17 and cut-through traffic impacts to local streets. The outside shoulders on SR 17 are mostly 8-foot wide and not in a condition suitable for bus-on-shoulder operations without improvement.

Additional investigations are planned. Review of a roundabout proposal at Santa Cruz Avenue/Wood Road near the SB onramp to SR 17 to facilitate weekend traffic management was approved conceptually by Caltrans. Los Gatos is also working with apps providers to minimize cut-through traffic. This TCR recommends a comprehensive traffic study be undertaken to examine the effects of various operational improvements such as potential bus-on-shoulder operations and other active traffic management strategies.

TECHNOLOGY AND TRAFFIC MANAGEMENT

Technology influences the outcomes in the transportation field by providing effective tools for traffic management.

Technological Innovations

Technological innovations are changing the transportation system today and will continue to do so in the future. Shared mobility, defined as using a vehicle, bicycle, or other mode on a short-term or “as-needed” basis, is now a reality. Self-driving vehicles, while difficult to forecast their full transportation system integration, are promising to transform transportation as we know it. Current car technology provides an increasing number of vehicles with automatic assistance, improving safety along the way. Many pilot programs are underway for fully automated self-driving vehicles, and this includes advancements for freight delivery. There is a tremendous potential for change occurring in the field of transportation, ranging from platooning vehicles to smaller-sized pods, from shared ownership issues to nearing zero accidents, and from high speed rail to highly complex hyperloop technology. Yet the socioeconomic and industry-driven changes are not crystalized well enough for further discussion here at this point in time. An acknowledgment is, however, in place that technological changes will have implications for corridor concept development. Autonomous vehicles, for instance, will likely increase capacity of our roadways, while this could also lead to induced demand, suburban sprawl and more congestion.

Transportation Systems Management and Operations (TSMO)

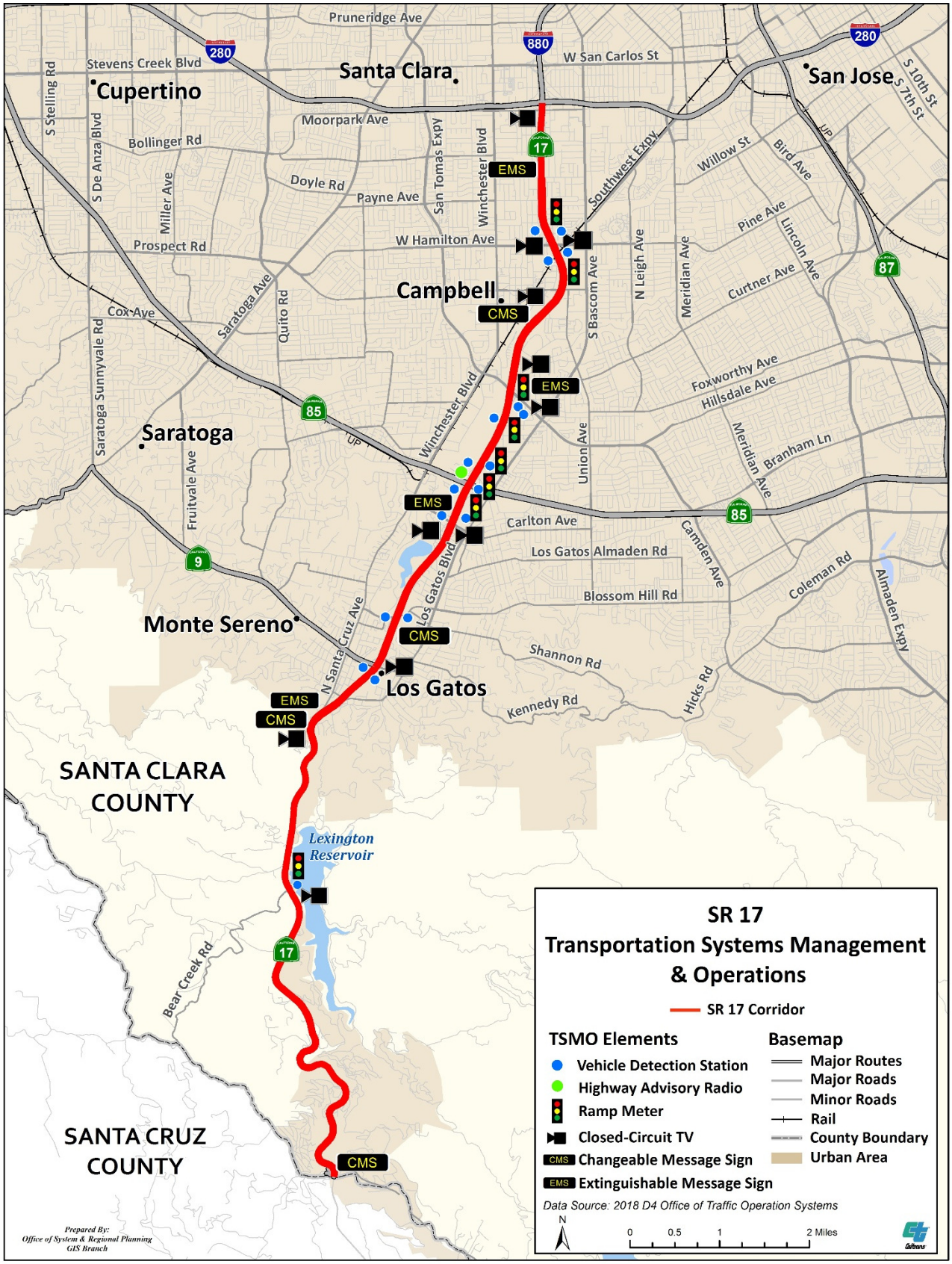
Caltrans is committed to effective Transportation Systems Management and Operations to optimize the performance of California's transportation systems for all users and modes of travel. TSMO strategies are essential to a performance-based decision making process Caltrans will use to improve the efficient and effective operation of the transportation network. Examples of TSMO strategies include ramp metering, traffic signal synchronization, Intelligent Transportation Systems (ITS) and managed lanes. Efficiency can often be achieved by operational improvements through ITS deployments. These include three types of management for improving throughput:

- System management for recurring localized congestion (ramp metering, managed lanes, traveler information, dynamic speed limit, traffic signals and transit priority, Integrated Corridor Management (ICM), parking management system, automated vehicles).
- Incident management for non-recurrent congestion (detection-verification-response, Closed-Circuit Television (CCTV), Changeable Message Signs (CMS), Highway Advisory Radio (HAR), weather detection, traveler information system, ICM).
- Event management for emergencies, disasters and other occurrences (through system monitoring, evacuation management, route selection, ICM).
- Asset Management for managing existing infrastructure and other assets to deliver an agreed upon standard of service. One of the first steps in the efficient management of the transportation system will be the completion and implementation of a Transportation Asset Management Plan.

In partnership with regional and local agencies, and other stakeholders, operational strategies form the basis of ICM. TSMO and ICM require proactive integration of the transportation systems to efficiently move people and goods along highly congested urban corridors. TSMO and ICM strategies improve operations of multimodal transportation infrastructure.

Caltrans Strategic Management Plan 2015–2020 has as Strategic Objective to "effectively manage transportation assets by implementing the asset management plan and embracing a fix-it-first philosophy." The plan specifies a target of maintaining 90 percent or better ITS element health by 2020. Operation and Maintenance (O&M) resources are essential to achieve this fix-it target. As more TSMO/ITS elements are implemented, O&M resource needs will continue to grow. Figure 19 shows a snapshot of TSMO element inventory within the right-of-way of the SR 17 Corridor. Operational status is not reflected in the figure.

Figure 19. *TSMO Inventory Map*



DSMP CONNECTION, PROPOSALS AND FUNDING

The TCRs are developed in tandem with the District System Management Plan (DSMP) and the DSMP Project List. One of the objectives of the TCR is to establish new proposals for consideration while remaining realistic about available funding sources and currently programmed projects.

Corridor SHOPP Suggestions

In 2015, Senate Bill 486 was signed into law by Governor Brown, requiring Caltrans to develop and implement a robust Asset Management Plan by the end of the 2020. The SHOPP is the primary program available to Caltrans to execute the Asset Management Plan. The SHOPP addresses the State's fix-it-first approach to the State Highway System. For SHOPP cycles, priorities will be evaluated to match funding and the goals established in the Caltrans Strategic Management Plan, such as Safety, Sustainability, Livability, Economy and Performance. As projects are selected and developed, they will also address Complete Streets, the Americans with Disabilities Act (ADA), Sea Level Rise, and issues such as fish passage, in particular. The SHOPP is limited to maintenance, safety, and rehabilitation projects on existing State highways and bridges, with generally no projects that add new traffic capacity.

Table 13. *SHOPP suggestions*

Segment	Description	Location
1	Striping solid lines on SR 17 Summit approach to reduce weaving (± 1 mile)	PM 0.00 – 1.00
1	Improve wildlife crossings, possibly near Lexington Reservoir, based on a proposed study. (See Table 17)	PM varies
3	Add bus queue-jump lane at NB off-ramp and SB loop on-ramp at the SR 17/East Hamilton Avenue interchange. This would facilitate Highway 17 Express service bypassing freeway congestion and using local facilities between Campbell and San Jose Diridon Station.	PM 12.23

Funding Sources

Active Transportation Program

The State of California established the Active Transportation Program (ATP) in September 2013 that funds projects through competition. Half of the funding is awarded through statewide competition, while 40 percent is awarded regionally. MTC is responsible for developing the region's guidelines, and for submitting projects to the CTC for adoption. The remaining ten percent is also managed by the State for small urban and rural areas. During both the 2014 and 2015 cycle, Santa Clara County was able to get one project funded (the Central and South County Bicycle Corridor Plan in 2014, and Coyote Creek Trail in 2015), both not within the SR 17 Corridor.

Santa Clara County Sales Tax Measures

Voters in Santa Clara County have approved a series of sales tax measures to help fund transportation projects. Table 14 lists current Measures including those that support transit, including Measure B approved in November 2016 for multimodal projects and operations.

Senate Bill 1

The Road Repair and Accountability Act of 2017, Senate Bill 1 (SB 1), was signed into law on April 28, 2017; there is no sunset date. The funding package provides $52.4 billion over the next decade to fix roads, freeways and bridges in communities across California and puts more dollars toward transit, active transportation, and safety and toward Caltrans Planning grant funds. Funds will be split equally between State and local investments. SB 1 includes funding augmentation to existing programs as well as the establishment of new funding programs, such as the Solutions for Congested Corridor Program.

Table 14. *Current Transportation Measures*

Transportation Measures	Rate / Horizon Year	Eligible Project Types
Measure A (1976)	• ½ cent sales tax (Permanent)	Support the Santa Clara County Transit District (that later became part of VTA)
Measure A (2000)	• ½ cent sales tax replacing older Measure A/B in 2006 (30 years) • Tax collection began in 2006	Public transit capital improvement projects & operations
Measure B (2008)	• 1/8 cent sales tax (Permanent)	O/M costs for BART to Silicon Valley
Measure B (2016) Envision Silicon Valley	• ½ cent sales tax (30 years) • Tax collection began in Spring 2017	Transit, bike/ ped & highway capital projects and operations.

ADDITIONAL CORRIDOR ISSUES

Limiting Geography

Due to the limiting topography in Segment 1, SR 17 has been upgraded from a conventional highway to an expressway, but still has partial access. Heavy trucks add operational challenges, even though the overall truck percentages are low, and a variety of ideas have been proposed over the years to address these challenges. One idea worth exploring further is to create a reversible fifth lane for regular traffic, to be operated in the peak commute direction. Adding a reversible lane may be less costly and requires less right-of-way than upgrading this Segment to a freeway. This option also has the potential to be combined with other managed lane strategies such as HOV or Express Lane configurations. Implementing a reversible lane on SR 17 would require local and regional support.

Fish passage

There are no fish passage issues identified within the SR 17 Corridor. Caltrans District 4 Environmental Planning has conducted a preliminary assessment and found all locations passable for fish.

Wildlife Crossings

0SR 17 moves through essential connectivity areas for wildlife and potentially restricts wildlife movement, such as that of mountain lions. Culverts that allow for some wildlife crossings are of moderate size, insufficient for larger animals.[9] Caltrans has agreed to spend $3.1 million for a wildlife crossing tunnel in Santa Cruz County (District 5) in the Laurel Curve area, and together with local funding, the tunnel could be built by 2020. In District 4, a potential wildlife crossing is proposed near Lexington Reservoir, but funding has not been secured. SR 17 contains spots with more road kill, so called hot spots, from around Summit Road to the outskirts of Los Gatos, as shown in Figure 21.

Figure 20. *Mountain Lion*
Source: Bas Lammers, Wikimedia

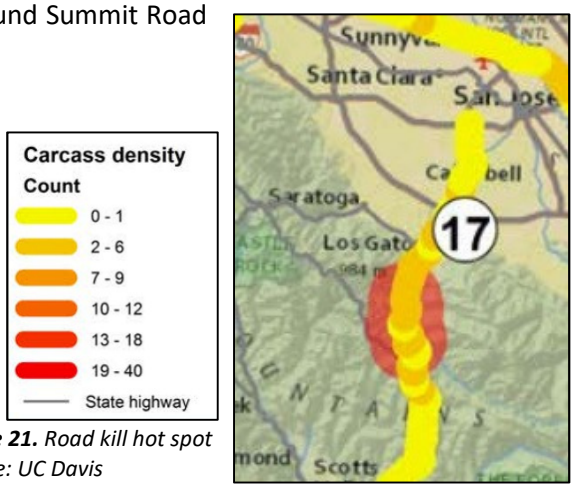


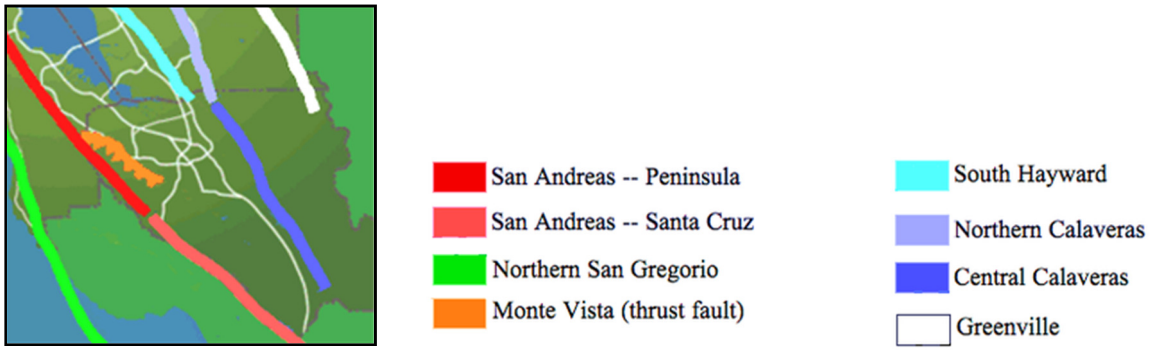
Figure 21. *Road kill hot spot*
Source: UC Davis

[9] Pathways for Wildlife, accessed March 24, 2015

Loma Prieta

On October 17, 1989, the San Andreas Fault erupted near Loma Prieta Peak in the Santa Cruz Mountains. The 6.9 magnitude earthquake caused fatalities and property damage in a large area from Santa Cruz to San Francisco and Oakland. Major repairs were needed to businesses, homes and the transportation infrastructure, including SR 17.

Figure 22. *Fault Lines within the region*



Source: *Wikimedia*

Up until 1988, data for this area of the San Andreas Fault had been lacking with very little seismic activity recorded. The San Andreas Fault runs across SR 17 between the Summit and Lexington Reservoir.

CORRIDOR CONCEPT

Table 15. *Corridor Concept Summary*

Segment	Segment Description	Existing Facility	Ten Year System Operation, Maintenance, and Management Improvements	Ten Year Multimodal Improvements	25-Year Capital Facility Concept
1	PM 0.00 – 7.07 Santa Cruz and Santa Clara County line to SR 9	4C/4F	Traffic Operations System (TOS)	Class I Bikeway Improvements	4C/4F
2	PM 7.07 – 9.35 SR 9 to SR 85	4F	TOS	Bike Park-and-Ride Facility, Class I Bikeway Improvements	4F
3	PM 9.35 – 13.94 SR 85 to I-280/I-880	6F-9F	TOS, Implement Express Lanes	Light-Rail, Class I Bikeway	6F-9F (2EL)

Legend*:*
F = Freeway Lane C = Conventional Lane EL =Express Lane

CONCEPT RATIONALE

Mountainous terrain separates the two neighboring regions of Silicon Valley and Santa Cruz. Direct alternative routes are essentially non-existent. In light of strong population and employment growth forecast for both areas, roadway expansion and upgrade would seem necessary. Yet, upgrading Segments 1 and 2 to a six-lane freeway to accommodate current and future demand is not incorporated into the 25-Year Capital Facility Concept because of the geographical constraints and the fact that it would need support from local agencies and communities. The concept therefore remains unchanged for all segments with the exception of implementing Express Lanes in Segment 3. This would involve a conversion of mixed-flow lanes, rather than lane additions. Proposed implementation is 2028.

In the future, people could choose to travel from Santa Cruz to the proposed Gilroy High Speed Rail station by car or by public transportation as an alternative to SR 17, possibly using SR 1 and SR 152. Such alternative route and mode would be most appealing for those traveling to farther locations, such as San Francisco, the San Francisco International Airport (SFO) and Sacramento, and could help alleviate congestion on SR 17. The implementation of this strategy will require collaboration between Caltrans and regional and local jurisdictions from both Santa Clara and Santa Cruz Counties. This TCR recommends a study to further examine this alternative.

PLANNED, PROGRAMMED AND PROPOSED PROJECTS

Tables 16 and 17 list planned/programmed projects and proposed projects/studies respectively. Figure 23 shows post miles along SR 17.

Table 16. *Planned and Programmed Projects*

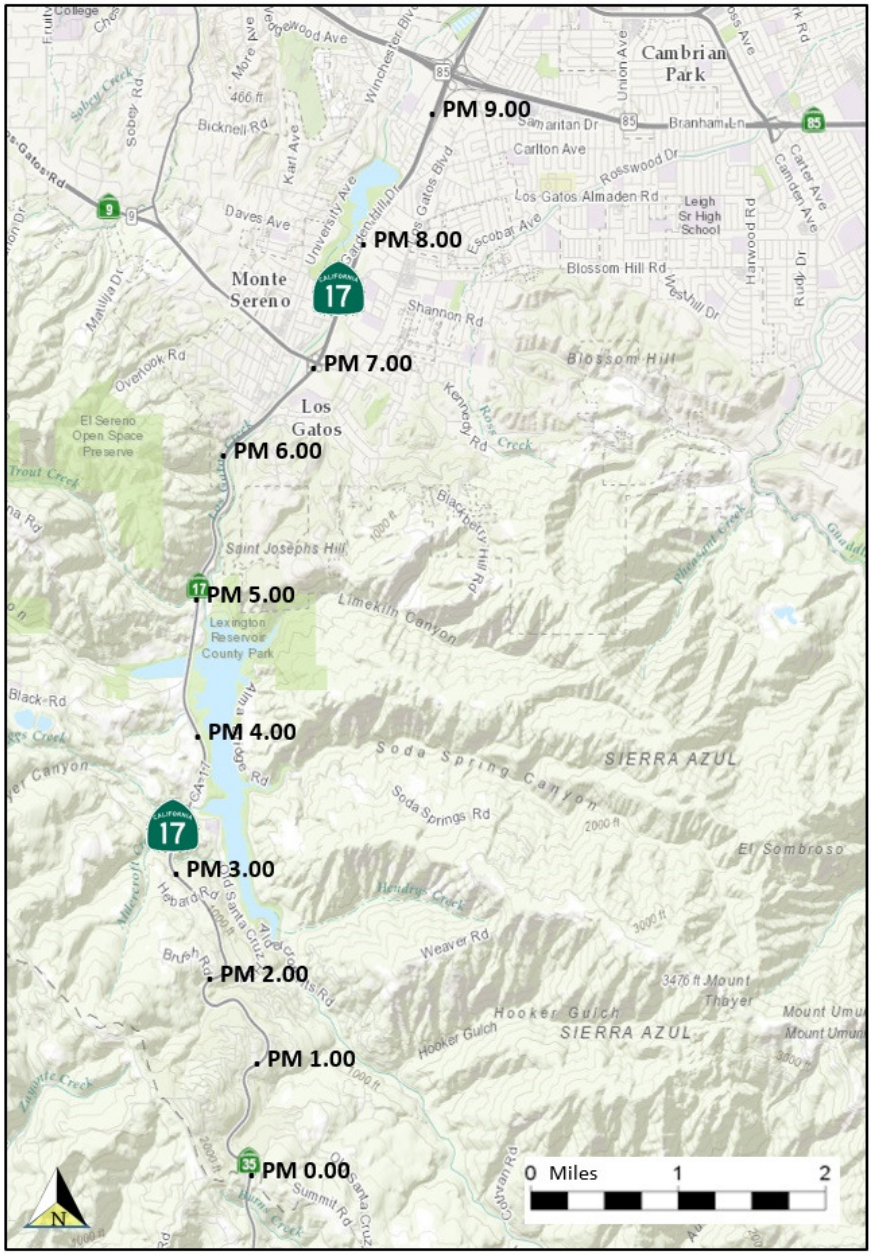
Segment	Description	Planned or Programmed	Location	Source	Implementation Phase
Motorized on Freeway					
1/2/3	Pavement rehabilitation (CAPM)	Programmed	PM 2.8 – 13.94	2018 SHOPP (EA 1J970)	2020
1/2/3	In Santa Clara County, on various routes including SR 17 at various locations, relocate or shield existing electrical controller cabinets and install twenty-eight new Maintenance Vehicle Pullouts (MVPs)	Programmed	Various	2018 SHOPP (EA 2J950)	2022
1/2/3	Remove dead and dying trees on SR 9, SR 17 and I-280	Programmed	Various	2018 SHOPP (EA 0Q890)	2018
1	Install lighting, warning signs, flashing beacons, guardrail, rumble strips, wet-night visibility striping, and channelizers, and apply High Friction Surface Treatment (HFST)	Programmed	PM 0.0 – 3.4	2018 SHOPP (EA 2K140)	2021
1/2	SR 17 Corridor congestion relief in Los Gatos, including upgrading SR 17/SR 9 interchange to improve pedestrian and bicycle safety, mobility, and roadway operations; deploying advanced transportation technology to reduce freeway cut thru traffic in Los Gatos, including traffic signal control system upgrades in Los Gatos, traveler information system, advanced ramp metering systems and multi-modal congestion relief solutions	Planned	Various	Plan Bay Area 2040 (17-07-0067)	2027
3	Santa Clara County Express Lanes SR 85 to I-280 - Environmental and Design	Planned	PM 9.35 – 13.94	Plan Bay Area 2040 (17-07-0085)	TBD
3	Envision Highway Minor Projects, including SR 17/Hamilton Avenue SB off-ramp widening and San Tomas Expressway/SR-17 improvements	Planned	PM 10.50/12.34	Plan Bay Area 2040 (17-07-0079)	2040
Motorized Off Freeway					
1, 2, 3	Los Gatos Boulevard improvements	Planned	Los Gatos Boulevard near Samaritan Drive	VTP 2040 (R8)	2016/2017
TOS / ITS					
1, 2, 3	Ramp metering	Planned	Various on-ramps	2017 Ramp Metering Development Plan	TBD
Transit					
3	Vasona light rail extension	Planned	PM 9.35 – 10.93	Plan Bay Area 2040 (17-07-0062)	2024
Active Transportation					
2, 3	Los Gatos Creek trail improvements	Planned	PM 7.5 – 8.6, PM 11.08 – 11.03, PM 7.07	VTP 2040 (B46, B71, B82)	2016 - 2040

VTP = VTA Valley Transportation Plan, TOS= Traffic Operations System, ITS= Intelligent Transportation Systems
FY = Fiscal Year, PID = Project Initiation Document, VLD = Vehicle Detection Site
Post Mile query: https://postmile.dot.ca.gov/PMQT/PostmileQueryTool.html

Table 17. *Proposed Projects and Studies*

Seg-ment	Description	Project or Study	Cost Estimate	Location	Source
1	Striping solid lines on SR 17 Summit approach to reduce weaving (± 1 mile)	Study	$150,000	PM 0.00 – 1.00	TCR Recommendation
1	Improve bicycle access and safety in mountainous area SR 17 Corridor on local roads	Study	$150,000	PM 0.00 - 6.12	TCR Recommendation
1	Wildlife Crossing and Bay Area Ridge Trail Crossing study SR 17 at Lexington Reservoir	Study	$165,000	PM 5.02 and PM 4.63	Midpeninsula Regional Open Space District
1	Improve transit from Santa Cruz to the future HSR Gilroy Station via Watsonville	Study	$500,000	Santa Cruz to Gilroy	TCR Recommendation
1	Safety project study to close median openings at Hebard Road and Idylwild Road.	Study	$300,000	PM 0.0 – 6.3	TCR Recommendation
1/2	SR 9/SR 17 Interchange improvement	Study	$20M	PM 7.07	SR 9 TCR Recommendation
1/2	Study alternatives for SR 17 congestion and cut-through traffic local roads	Study	$1.5M	PM 6.3 – 8.88	Town of Los Gatos
1, 2, 3	Improve bicycle accommodation at freeway crossings	Project	Var	• Lark Avenue (PM 8.89) • SR 9 (PM 7.07) • Nino Way/Ohlone Court (PM 7.40) • Blossom Hill Rd (PM 7.67) • San Tomas Expwy/Camden Avenue (PM 10.50) • E Hamilton Ave (PM 12.34)	VTA Countywide Bike Plan 2018
1, 2, 3, D5	Rail Corridor Connection Study	Study	$4M	• Santa Cruz to Vasona Light Rail	TCR Recommendation
2,3	New bicycle/pedestrian crossings to address the potential Across Barrier Connections needs	Project	Var	• Lexington Reservoir County Park (PM 4.81) Between: • Bear Creek Rd and E Main Street (PM 4.10 - 6.55) • Blossom Hill Road and Lark Avenue (PM 7.67 - 8.89) • SR 17 Bike/Ped Bridge near E Mozart Ave and County Park (PM 9.60 - 10.50) • S Tomas Expwy/ Camden Avenue and East Campbell Avenue (PM 10.50 - 12.06)	VTA Countywide Bike Plan 2018
2/3	Support implementing bike storage facilities at VTA bus/light rail stations	Project	Var	Winchester, Hacienda and Vasona LRT Stations	TCR Recommendation
3	ADA improvement for bicycle and pedestrian overcrossing	Project	$1M	Westfield Avenue–Downing Avenue (PM 13.11)	City of San Jose/ VTA Countywide Bike Plan 2018

Figure 23. *SR 17 Post Miles*



APPENDICES

APPENDIX A
GLOSSARY OF TERMS AND ACRONYMS

Acronyms

AADT – Annual Average Daily Traffic
AADTT – Annual Average Daily Truck Traffic
AB – Assembly Bill
ABAG – Association of Bay Area Governments
ADA – Americans with Disabilities Act of 1990
ADT – Average Daily Traffic
Alameda CTC – Alameda County Transportation Commission
ATP – Active Transportation Program
BAAQMD – Bay Area Air Quality Management District
BCDC – Bay Conservation and Development Commission
BRT – Bus Rapid Transit
BY – Base Year
Caltrans – California Department of Transportation
CARB – California Air Resources Board
C/CAG – City/County Association of Governments of San Mateo County
CCC – California Conservation Corps
CCTA – Contra Costa Transportation Authority
CDFW – California Department of Fish and Wildlife
CEC – California Energy Commission
CESA – California Endangered Species Act
CFAC – California Freight Advisory Committee
CFMP – California Freight Mobility Plan
CMA – Congestion Management Agencies
CMAQ – Congestion Mitigation and Air Quality
CMP – Congestion Management Plan
CSFAP – California Sustainable Freight Action Plan
CSMP – Corridor System Management Plan
CEQA – California Environmental Quality Act
CSS – Context Sensitive Solutions
CTC – California Transportation Commission
CTP – California Transportation Plan
DD – Deputy Directive
DSMP – District System Management Plan
ECA – Essential Connectivity Areas
FAST Act – Fixing America's Surface Transportation Act
FASTLANE – Fostering Advancements in Shipping and Transportation for the Long-Term Achievement of National Efficiencies grant program
FHWA – Federal Highway Administration
FSR – Feasibility Study Report
FSTIP – Federal Statewide Transportation Improvement Program
FTA – Federal Transit Administration
FTIP – Federal Transportation Improvement Program
GHG – Greenhouse Gas
GIS – Geographic Information System

HCP – Habitat Conservation Plan
HOT – High Occupancy Toll lane
HOV – High Occupancy Vehicle lane
HY – Horizon Year
ICM – Integrated Corridor Mobility
IGR – Intergovernmental Review
ITIP – Interregional Transportation Improvement Program
ITS – Intelligent Transportation System
ITSP – Interregional Transportation Strategic Plan
KPRA – Kingpin-to-Rear-Axle
LOS – Level of Service
MAP-21 – Moving Ahead for Progress in the 21st Century
MPO – Metropolitan Planning Organizations
MTC – Metropolitan Transportation Commission
NOA – Naturally Occurring Asbestos
NCCP – Natural Community Conservation Plan
NEPA – National Environmental Policy Act
NHS – National Highway System
NHFN – National Highway Freight Network
NMFN – National Multimodal Freight Network
NVTA – Napa Valley Transportation Authority
PAED – Project Approval/Environmental Document
PBA – Plan Bay Area
PCA – Priority Conservation Area
PDA – Priority Development Area
PFN – Primary Freight Network
PID – Project Initiation Document
PIR – Project Initiation Report
PM – Post Mile
PM 2.5 – Particulate Matter 2.5 micrometers or less in diameter
PM 10 – Particulate Matter 10 micrometers or less in diameter
PSR – Project Study Report
PR – Project Review
PTSF – Percent Time Spent Following
RHNA – Regional Housing Needs Allocation
RTP – Regional Transportation Plan
RTIP – Regional Transportation Improvement Program
RTPA – Regional Transportation Planning Agencies
SACOG – Sacramento Area Council of Governments
SAFETEA-LU – Safe, Accountable, Flexible and Efficient Transportation Equity Act, a Legacy for Users
SB – Senate Bill
SCS – Sustainable Community Strategies
SCTA – Sonoma County Transportation Authority
SFCTA – San Francisco County Transportation Authority
SHOPP – State Highway Operation Protection Program
SHS – State Highway System
SJCOG – San Joaquin Council of Governments
SMF – Smart Mobility Framework
SR – State Route
STA – Solano Transportation Authority

STIP – State Transportation Improvement Program
STP – Surface Transportation Program
STRAHNET – Strategic Highway Network
TAM – Transportation Authority of Marin
TCIF – Trade Corridors Improvement Fund
TCRP – Transit Cooperative Research Program
TEA-21 – Transportation Equity Act for the 21st Century
TCR – Transportation Concept Report
TIGER – Transportation Investment Generating Economic Recovery
TDM – Transportation Demand Management
TMP – Transportation Management Plan
TMS – Transportation Management System
TSN – Transportation System Network
VMT – Vehicle Miles Traveled
VTA – Santa Clara Valley Transportation Authority
VPH – Vehicles per Hour

Definitions

AADT – Annual Average Daily Traffic is the total volume for the year divided by 365 days. The traffic count year is from October 1st through September 30th. Traffic counting is generally performed by electronic counting instruments moved from location throughout the state in a program of continuous traffic count sampling. The resulting counts are adjusted to an estimate of annual average daily traffic by compensating for seasonal influence, weekly variation and other variables which may be present. Annual ADT is necessary for presenting a statewide picture of traffic flow, evaluating traffic trends, computing accident rates, planning and designing highways and other purposes.

Base Year – The year that the most current data is available to the Districts.

Bikeway Class I (Bike Path) – Provides a completely separated right of way for the exclusive use of bicycles and pedestrians with cross flow by motorists minimized.

Bikeway Class II (Bike Lane) – Provides a striped lane for one-way bike travel on a street or highway.

Bikeway Class III (Bike Route) – Provides for shared use with pedestrian or motor vehicle traffic.

Bikeway Class IV (Separated Bikeway/Cycle Track) – Provides for exclusive use for bicycles by separating bikeway from motor vehicle traffic.

Bottlenecks – A bottleneck is a location where traffic demand exceeds the effective carrying capacity of the roadway. In most cases, the cause of a bottleneck relates to a sudden reduction in capacity, such as a lane drop, merging and weaving, driver distractions, a surge in demand, or a combination of factors.

Capacity – The maximum sustainable hourly flow rate at which persons or vehicles reasonably can be expected to traverse a point or a uniform section of a lane or roadway during a given time period under prevailing roadway, environmental, traffic, and control conditions.

Capital Facility Concept – The 20-25 year vision of future development on the route to the capital facility. The capital facility can include capacity increasing, State Highway, bicycle facility, pedestrian facility, transit facility (Intercity Passenger Rail, Mass Transit Guideway etc.), grade separation, and new managed lanes.

Conceptual Project – A conceptual improvement or action is a project that is needed to maintain mobility or serve multimodal users, but is not currently included in a fiscally constrained plan and is not currently programmed. It could be included in a General Plan or in the unconstrained section of a long-term plan.

Corridor – A broad geographical band that follows a general directional flow connecting major sources of trips that may contain a number of streets, highways, bicycle, pedestrian, and transit route alignments. Off system facilities are included as informational purposes and not analyzed in the TCR.

Facility Concept – Describe the Facility and strategies that may be needed within 20-25 years. This can include capacity increasing, State Highway, bicycle facility, pedestrian facility, transit facility, Non-capacity increasing operational improvements, new managed lanes, conversion of existing managed lanes to another managed lane type or characteristic, TMS field elements, Transportation Demand Management and Incident Management.

Facility Type – The facility type describes the State Highway facility type. The facility could be freeway, expressway, conventional, or one-way city street.

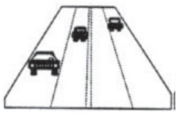
Freight Generator – Any facility, business, manufacturing plant, distribution center, industrial development, or other location (convergence of commodity and transportation system) that produces significant commodity flow, measured in tonnage, weight, carload, or truck volume.

Horizon Year – The year that the future (20-25 years) data is based on.

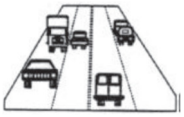
Intermodal Freight Facility – Intermodal transport requires more than one mode of transportation. An intermodal freight facility is a location where different transportation modes and networks connect and freight is transferred (or "transloaded") from one mode, such as rail, to another, such as truck.

ITS – Intelligent Transportation System improves transportation safety and mobility and enhances productivity through the integration of advanced communications technologies into the transportation infrastructure and in vehicles. Intelligent transportation systems encompass a broad range of wireless and wire line communications-based information and electronics technologies to collect information, process it, and take appropriate actions.

LOS – Level of Service is a qualitative measure describing operational conditions within a traffic stream and their perception by motorists. A LOS definition generally describes these conditions in terms of speed, travel time, freedom to maneuver, traffic interruption, comfort, and convenience. Six levels of LOS can generally be categorized as follows:



At **LOS A**, motorists experience high operating speeds on Class I highways and little difficulty in passing. Platoons of three or more vehicles are rare. On Class II highways, speed would be controlled primarily by roadway conditions. A small amount of platooning would be expected. On Class III highways, drivers should be able to maintain operating speeds close or equal to the free-flow speed (FFS) of the facility.



At **LOS B**, passing demand and passing capacity are balanced. On both Class I and Class II highways, the degree of platooning becomes noticeable. Some speed reductions are present on Class I highways. On

Class III highways, it becomes difficult to maintain FFS operation, but the speed reduction is still relatively small.

At **LOS C**, most vehicles are travelling in platoons. Speeds are noticeably curtailed on all three classes of highway.

At **LOS D**, platooning increases significantly. Passing demand is high on both Class I and II facilities, but passing capacity approaches zero. A high percentage vehicles are now traveling in platoons, and Percent Time Spent Following (PTSF) is quite noticeable. On Class III highways, the fall-off from FFS is now significant.

At **LOS E**, demand is approaching capacity. Passing on Class I and Class II highways is virtually impossible, and PTSF is more than 80%. Speeds are seriously curtailed. On Class III highways, speed is less than two-thirds the FFS. The lower limit of this LOS represents capacity.

At **LOS F**, exists whenever demand flow in one or both directions exceeds the capacity of the segment. Operating conditions are unstable, and heavy congestion exists on all classes of two-lane highway.

Multi-modal – The availability of transportation options using different modes within a system or corridor, such as automobile, subway, bus, rail, or air.

Peak Hour – The hour of the day in which the maximum volume occurs across a point on the highway.

Peak Hour Volume – The hourly volume during the highest hour traffic volume of the day traversing a point on a highway segment. It is generally between 6 percent and 10 percent of the ADT. The lower values are generally found on roadways with low volumes.

Planned Project – A planned improvement or action is a project in a fiscally constrained section of a long-term plan, such as an approved Regional or Metropolitan Transportation Plan (RTP or MTP), Capital Improvement Plan, or measure.

Post Mile – A post mile is an identified point on the State Highway System. The milepost values increase from the beginning of a route within a county to the next county line. The milepost values start over again at each county line. Milepost values usually increase from south to north or west to east depending upon the general direction the route follows within the state. The milepost at a given location will remain the same year after year. When a

section of road is relocated, new milepost (usually noted by an alphabetical prefix such as "R" or "M") are established for it. If relocation results in a change in length, "milepost equations" are introduced at the end of each relocated portion so that mileposts on the reminder of the route within the county will remain unchanged.

Programmed Project – A programmed improvement or action is a project in a near-term programming document identifying funding amounts by year, such as the State Transportation Improvement Program or the State Highway Operations and Protection Program.

Route Designation – A route's designation is adopted through legislation and identifies what system the route is associated with on the State Highway System. A designation denotes what design standards should apply during project development and design. Typical designations include but not limited to National Highway System (NHS), Interregional Route System (IRRS), Scenic Highway System,

Rural – Fewer than 5,000 in population designates a rural area. Limits are based upon population density as determined by the U.S. Census Bureau

Segment – A portion of a facility between two points.

TDM – Transportation Demand Management programs designed to reduce or shift demand for transportation through various means, such as the use of public transportation, carpooling, telework, and alternative work hours. Transportation Demand Management strategies can be used to manage congestion during peak periods and mitigate environmental impacts.

TMS – Transportation Management System is the business processes and associated tools, field elements and communications systems that help maximize the productivity of the transportation system. TMS includes, but is not limited to, advanced operational hardware, software, communications systems and infrastructure, for integrated Advanced Transportation Management Systems and Information Systems, and for Electronic Toll Collection System.

TSMO – Integrated strategies to optimize the performance of existing infrastructure through the implementation of multimodal and intermodal, cross-jurisdictional systems, services, and projects, describing the system operations and management elements that may be needed within 20-25 years. This can include Non-capacity increasing operational improvements (auxiliary lanes, channelization's, turnouts, etc.), conversion of existing managed lanes to another managed lane type or characteristic (e.g. HOV lane to HOT lane), TMS Field Elements, Transportation Demand Management, and Incident Management.

Urban – 5,000 to 49,999 in population designates an urban area. Limits are based upon population density as determined by the U.S. Census Bureau.

Urbanized – Over 50,000 in population designates an urbanized area. Limits are based upon population density as determined by the U.S. Census Bureau.

VMT – Is the total number of miles traveled by motor vehicles on a road or highway segments.

APPENDIX B
FEDERAL, STATE, AND REGIONAL PLANS AND POLICIES

FEDERAL

Fixing America's Surface Transportation Act (FAST Act), December 2015

FAST Act will provide $305 Billion in funding for surface transportation programs and was signed into law in December 2015. The federal spending bill replaces MAP-21, Moving Ahead for Progress in the 21st Century signed into law in 2012. FAST Act provides funding for highway, transit, and railroad networks, most of which will be distributed to state departments of transportation and local transit agencies.

Federal Transportation Improvement Program (FTIP)

All federally funded projects, and regionally significant projects (regardless of funding), must be listed in the FTIP per federal law. A project is not eligible to be programmed in the FTIP until it is programmed in the *State Transportation Improvement Program* (STIP) or in the *State Highway Operations and Protection Program* (SHOPP). Other types of funding (Federal Demonstration, Congestion Mitigation and Air Quality (CMAQ), Transportation Enhancement Activities (TEA), and Surface Transportation Program (STP) must be officially approved before the projects can be included in the FTIP.

STATE

California Transportation Plan (CTP) 2040

The CTP is a long-range policy framework to meet California's future multi-modal mobility needs and reduce greenhouse gas and particulate matter (PM) emissions. The CTP defines goals, performance-based policies, and strategies to achieve a collective vision for California's future Statewide, integrated, multimodal transportation system. A new updated plan was recently finalized in June 2016. It focuses on meeting new trends and challenges, such as economic and job growth, climate change, freight movement, and public health. In addition, performance measures and targets were developed to assess performance of the transportation system to meet the requirements of MAP-21. Caltrans has initiated CTP 2050, a strategic update to CTP 2040.

California Interregional Blueprint (CIB)

Responding to Senate Bill 391 of 2009, CIB informs and enhances the State's transportation planning process. Similar to requirements for regional transportation plans under Senate Bill 375, SB 391 requires the State's long-range transportation plan to meet California's climate change goals under Assembly Bill 32. In response to these statutes, Caltrans is preparing a state-level transportation blueprint to inform CTP 2040 and articulate the State's vision for an integrated, multi-modal interregional transportation system that integrates the Regional Blueprint Program (see the Regional appendix section) and complements regional transportation plans. The CIB will integrate the State's long-range multi-modal plans and Caltrans-sponsored programs with the latest technology and tools to enhance our ability to plan for and manage a transportation system that will expand mode choices and meet future increases in transportation needs and still meet the GHG-reduction targets or SB 375.

State Transportation Improvement Program (STIP)

The STIP is a multi-year capital improvement program of transportation projects on and off the State Highway System, funded with revenues from the Transportation Investment Fund and other funding sources. Caltrans and the regional planning agencies prepare transportation improvement plans for submittal. Local agencies work through their Regional Transportation Planning Agency (RTPA), County Transportation Commission, or Metropolitan Planning Organization (MPO), as appropriate, to nominate projects for inclusion in the STIP.

Interregional Transportation Improvement Program (ITIP)

The Interregional Transportation Improvement Program (ITIP) is a state-funding program for the Interregional Improvement Program (IIP) and is a sub-element of the State Transportation Improvement Program. The IIP is a state funding category created in SB 45 for intercity rail, interregional road or rail expansion projects outside urban areas, or projects of statewide significance, which include projects to improve State highways, the intercity passenger rail system, and the interregional movement of people, vehicles, and goods. Caltrans nominates and the California Transportation Commission approves a listing of interregional highway and rail projects for 25% of the funds to be programmed in the STIP (the other 75% are Regional Improvement Program funds). Only projects planned on State highways are to be included in this program.

Interregional Transportation Strategic Plan (ITSP) 2015

The ITSP is a California Department of Transportation (Caltrans) document that provides guidance for the identification and prioritization of interregional State highway projects. The ITSP promotes the State of California's role of improving mobility while providing opportunity for efficient goods movement. It also provides summary information regarding other interregional transportation modes—in particular, intercity passenger rail. The ITSP highlights critical planning considerations such as system planning, complete streets, and climate change.

District System Management Plan (DSMP)

The DSMP provides a vehicle for the development of multi-modal and multi-jurisdictional transportation strategies. These strategies must be based on an analysis that is developed in partnership with regional and local agencies. The DSMP is the State's counterpart to the Regional Transportation Plan (RTP) for the region. The former Transportation System Development Program (TSDP) is now incorporated within this management plan as a Project List.

State Highway Operation and Protection Program (SHOPP)

Caltrans prepares the SHOPP for the expenditure of transportation funds for major capital improvements necessary to preserve and protect the State Highway System. The SHOPP is a four-year funding program updated every two years, focusing available resources on the most critical categories of projects: safety mandates, bridge, and pavement preservation. The *Ten-Year SHOPP* anticipates long-term projected expansion and maintenance needs.

Ten-Year SHOPP

The Ten-Year SHOPP is a State plan for the rehabilitation and reconstruction of State highways and bridges. The purpose of the plan is to identify needs for the upcoming ten years. The plan is updated every two years. It includes specific milestones, quantifiable accomplishments and strategies to control cost and improve the efficiency of the program. The Ten-Year SHOPP differs from programmed two-year SHOPP, as it has no funding constraints assigned, just Program targets.

California Strategic Growth Plan

The Governor and Legislature have initiated the first phase of a comprehensive Strategic Growth Plan to address California's critical infrastructure needs over the next twenty years. California faces over $500 billion in infrastructure needs to meet the demands of a population expected to increase by 23 percent over the next two decades. In November 2006, the voters approved the first installment of that twenty-year vision to rebuild California by authorizing a series of General Obligation bonds totaling $42.7 billion.

Smart Mobility Framework

Caltrans released *Smart Mobility 2010: A Call to Action for the New Decade* in February 2010. SMF was prepared in partnership with US Environmental Protection Agency, the Governor's Office of Planning and Research, and the California Department of Housing and Community Development to address both long-range challenges and short-term pragmatic actions to implement multi-modal and sustainable transportation strategies in California.

Smart Mobility 2010 provides new tools and techniques to improve planning. It links land use "place types," considers growth scenarios and how growth will best gain the benefits of smart mobility. The SMF emphasizes travel choices, healthy, livable communities, reliable travel times for people and freight, and safety for all users. This vision supports the goals of social equity, climate change intervention, and energy security as well as a robust and sustainable economy.

Caltrans Deputy Directive DD-64-R2 *Complete Streets - Integrating the Transportation System, 2008 & 2014*
DD-64-R2 expresses Caltrans commitment to providing for the needs of all travelers including motorists, pedestrians, bicyclists and persons with disabilities in all programming, planning, maintenance, construction, operations, and project development activities and products.

State Assembly Bill 32 (AB 32) *Global Warming Solutions Act, September 2006*
This bill requires the State's greenhouse gas emissions to be reduced to 1990 levels by the Year 2020. Caltrans strategy to reduce global warming emissions has two elements. The first is to make transportation systems more efficient through operational improvements. The second is to integrate emission reduction measures into the planning, development, operations and maintenance of transportation elements.

Senate Bill 1 (SB 1) *Road and Repair Accountability Act, 2017*
SB 1 provides the first significant, stable, and on-going increase in State-directed transportation funding in more than two decades. This legislative package invests $54 billion over the next decade to fix roads, freeways and bridges in communities across California and puts more dollars toward transit and safety. These funds will be split equally between state and local investments. SB 1 presents a balance of new resources and reasonable reforms to ensure efficiency, accountability, and performance from each dollar invested to improve California's transportation system.

Senate Bill 45 (SB 45), 1997
SB 45 establishes guidelines for the California Transportation Commission to administer the allocation of funds appropriated from the Public Transportation Account for capital transportation projects designed to improve transportation facilities.

Senate Bill 375 (SB 375) *Addressing Greenhouse Gas Emissions from the Transportation Sector, 2008*
SB 375 provides a means for achieving AB 32 goals from cars and light trucks. The transportation sector contributes over forty percent of the GHGs throughout the State. Automobiles and light trucks alone contribute almost thirty percent. SB-375requires the California Air Resources Board (ARB) to develop regional greenhouse gas (GHG) emission reduction targets for cars and light trucks for each of the 18 Metropolitan Planning Organizations (MPOs). Through their planning processes, each of the MPOs is required to develop plans to meet their regional GHG reduction target. This would be accomplished through either the financially constrained "sustainable communities strategy" as part of their regional transportation plan (RTP) or an unconstrained alternative planning strategy. SB-375 also provides streamlining of California Environmental Quality Act (CEQA) requirements for specific residential and mixed-use developments.

Senate Bill 391 (SB 391) *California Transportation Plan updates, 2009*
This bill requires the department to update the California Transportation Plan by December 31, 2015, and every 5 years thereafter. The bill requires the plan to address how the state will achieve maximum feasible emissions reductions in order to attain a statewide reduction of greenhouse gas emissions to 1990 levels by 2020 and 80% below 1990 levels by 2050. The bill requires the plan to identify the statewide integrated multimodal transportation system needed to achieve these results.

Senate Bill 743 (SB 743) *California Environmental Quality Act (CEQA) updates, 2013*

This bill requires the Office of Planning and Research to update guidelines for analyzing transportation project impacts as they relate to CEQA legislation. Currently, guidelines are considered interim as the SB 743 court ruling is not final as of May 2018. Vehicle Miles Traveled (VMT) now provides an alternative to LOS for evaluating transportation impacts. Particularly within areas served by transit, those alternative criteria must "promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses."

Caltrans - Climate Action Plan

Greenhouse gas (GHG) emissions and the related subject of global climate change are emerging as critical issues for the transportation community. Caltrans recognizes the significance of cleaner, more energy efficient transportation. On June 1, 2005 the State established climate change emissions reduction targets for California that lead to development of the Climate Action Program. This program highlights reducing congestion and improving efficiency of transportation systems through smart land use, operational improvements, and Intelligent Transportation Systems (objectives of the State's Strategic Growth Plan). The Climate Action Plan approach also includes institutionalizing energy efficiency and GHG emission reduction measures and technology into planning, project development, operations, and maintenance of transportation facilities, fleets, buildings, and equipment. The Draft report is expected by the end of June 2018.

Comprehensive Corridor Plans (CCP)

SB 1 established multiple funding programs, including the Solutions for Congested Corridors Program (SCCP). This program provides $250 million annually on a competitive basis to Caltrans and regional agencies for projects designed to achieve a balanced set of transportation, environmental, and community access improvements within highly-congested travel corridors throughout the State. The legislation stipulates projects eligible for SCCP funding must be included in a Comprehensive Corridor Plan designed to reduce congestion in highly-traveled corridors by providing more transportation choices for residents, commuters and visitors to the area while preserving the character of the local community and creating opportunities for neighborhood enhancements. CTC is developing CCP guidelines to be adopted in late 2018.

Corridor System Management Plans (CSMP)

In 2007, the California Transportation Commission adopted a resolution stating "…the Commission expects Caltrans and regional agencies to preserve the mobility gains of urban corridor capacity improvements over time that will be described in Corridor System Management Plans (CSMPs)." A CSMP is a transportation planning document that will study the facility based on comprehensive performance assessments and evaluations. The strategies are phased, and include both operational and more traditional long-range capital expansion strategies. They take into account transit usage, projections, and interactions with arterial network, and connection to State Highways. Each CSMP presents an analysis of existing and future traffic conditions and proposes traffic management strategies and capital improvements to maintain and enhance mobility within each corridor.

California Freight Mobility Plan, 2014

The California State Transportation Agency (CalSTA) and Caltrans developed a state freight plan, titled the California Freight Mobility Plan (CFMP). Per Assembly Bill 14 (Lowenthal, 2013) the CFMP is a comprehensive plan that governs the immediate and long-range planning activities and capital investments of the state with respect to the movement of freight. The CFMP will also comply with the relevant provisions of the federal Moving Ahead for Progress in the 21st Century Act (MAP-21) which encourages each state to develop a freight plan. The *CFMP* is a modal plan contributing to the Department's ongoing *California Interregional Blueprint (CIB)* initiative. It will use recent freight industry information developed by seaports, railroads, airports, and others, as well as benefit from important regional freight mobility planning programs by partner agencies.

California State Rail Plan (CSRP), 2018

The Rail Plan establishes a long-term vision for prioritizing state investment in an efficient, effective passenger and freight rail system, which supports the goals and policies of the California Transportation Plan 2040. The Rail Plan identifies service goals, capital costs, and a phased strategy for achieving the Vision. This ambitious plan identifies a coordinated, statewide passenger rail network that will get Californians where they want to go, when they want to go, and enhance the movement of goods by rail to support California's industries and the economy. As of May 2018, the CSRP is released in Draft form. Final release date has not been determined.

REGIONAL

Regional Transportation Plan (RTP) and Plan Bay Area

The Metropolitan Transportation Commission (MTC) functions as both the State-designated Regional Transportation Planning Agency (RTPA) and federally-designated Metropolitan Planning Organization (MPO). MTC is responsible for the development and update of the RTP, a financially constrained long range transportation plan for the region. Pursuant to SB 375, along with an updated RTP, each region in California must develop a Sustainable Communities Strategy (SCS) that promotes walk and bike-friendly mixed-use commercial and residential development close to mass transit, jobs, schools, shopping, parks, recreation, and other amenities. MTC's Plan Bay Area (PBA), first adopted in July 2013 and then updated in July 2017 as *PBA 2040*, serves as the San Francisco Bay Area's RTP and SCS. Plan Bay Area discusses how the Bay Area will grow over the next two decades and identifies transportation and land use strategies to enable a more sustainable, equitable and economically vibrant future. MTC is currently working on an update to PBA 2040, to be adopted in 2021.

Regional Transportation Improvement Program (RTIP)

The Regional Transportation Improvement Program is a sub-element of the State Transportation Improvement Program (STIP). The Metropolitan Transportation Commission is responsible for developing regional project priorities for the RTIP for the nine counties of the Bay Area. The biennial RTIP is then submitted to the California Transportation Commission for inclusion in the STIP.

Regional Blueprint Planning Program

The Regional Blueprint Planning Program supports the smart growth element of the Strategic Growth Plan by promoting smart land use choices at the regional and local levels. The Regional Blueprint Planning Program was a grant program that supported Metropolitan Planning Organizations (MPOs) and Regional Transportation Planning Agencies (RTPAs) to conduct comprehensive scenario planning. Using consensus-building and a broad-based visioning approach it's goal was to envision future land use patterns and their potential impacts on a region's transportation system, housing supply, jobs/housing balance, resource management and other protections. The Blueprint planning effort in the San Francisco Bay Area is the Focus our Vision (FOCUS) program, which is led by the Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC) with support from the Bay Area Air Quality Management District (BAAQMD) the Bay Conservation and Development Commission (BCDC), and Caltrans. These agencies and local governments participated in the Regional Blueprint Planning Program since the program's inception in 2005, receiving grants for all four years, and now carry on regional blueprint goals through *the FOCUS program.*

Freeway Performance Initiative (FPI)

This is the Metropolitan Transportation Commission's ongoing effort to improve the operations, safety, and management of the Bay Area's freeway network by deploying system management strategies, completing the HOV lane system, addressing regional freight issues, and closing key freeway infrastructure gaps.

APPENDIX C
ADDITIONAL SOURCES AND INFORMATION

D5 Access Management Plan
http://www.ca-hwy17amp.org/

Los Gatos Housing Element General Plan
http://ca-losgatos2.civicplus.com/DocumentCenter/View/14782
Envision San Jose
https://www.sanjoseca.gov/DocumentCenter/View/47785
Statewide Transit Strategic Plan
http://www.dot.ca.gov/hq/MassTrans/statewide-transit.html
2016 UC Davis Road Ecology Center
https://roadecology.ucdavis.edu/files/content/projects/CROS_Hotspots_2016.pdf

Wildlife Crossings:
Mercury News
http://www.mercurynews.com/2016/10/15/new-tunnels-in-santa-cruz-mountains-will-provide-cougars-safe-passage/
East Bay Times
http://www.eastbaytimes.com/2016/10/20/caltrans-commits-3-1-million-to-build-wildlife-tunnel-under-highway-17/
UC Davis
https://roadecology.ucdavis.edu/files/content/projects/CROS_Hotspots_2016.pdf

Rail:
Friends of the Rail & Trail – Santa Cruz
http://santacruztrail.org/railtrail/
Rail Study 2014 Santa Cruz Watsonville
http://sccrtc.org/wp-content/uploads/2016/02/RailStudyExecutiveSummary.pdf

Safe on 17
https://sccrtc.org/meetings/tos-safe-on-17/

Bay Area Air Quality Management District
http://www.baaqmd.gov/research-and-data/air-quality-standards-and-attainment-status

Apple and Google Shuttles
http://www.macrumors.com/2014/03/31/apple-expanding-employee-transportation-program/
http://www.sfgate.com/news/article/For-Google-shuttle-drivers-it-s-a-grueling-ride-5785556.php

Employment Development Department commuting between counties
https://www.labormarketinfo.edd.ca.gov/file/commute-maps/santaclara2010.pdf

Santa Cruz-Los Gatos Rail Corridor Study (1994)
http://www.bayrailalliance.org/files/library/Santa_Cruz-Los_Gatos_Rail_Corridor_study.pdf