

Project No. PS-4010-3041-YY-01-01

# **Appendix B – Baseline Conditions Report – Final**

Prepared for:



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# Subregional Mobility Matrix San Fernando Valley PS-4010-3041-YY-01-01

Prepared for:



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# **Quality Review Tracking**

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# List of Terms and Acronyms

Acronyms	Definitions			
ADT	Average Daily Traffic			
Caltrans	California Department of Transportations			
COG	Council of Governments			
CSTAN	Los Angeles Countywide Strategic Truck Arterial Network			
ITS	Intelligent Transportation Systems			
LOS	Level-of-Service			
LRTP	Long Range Transportation Plan			
Metro	Los Angeles County Metropolitan Transportation Authority			
РСН	Pacific Coast Highway			
PeMS	Caltrans Freeway Performance Monitoring System			
SB	Senate Bill			
SFV	San Fernando Valley			
SFVCOG	San Fernando Valley Council of Governments			
SRTP	Short Range Transportation Plan			
STAA	Surface Transportation Assistance Act			





# **1.0 INTRODUCTION**

## **1.1 Study Background**

The Los Angeles County Metropolitan Transportation Authority (Metro) initiated the development of seven subregional mobility matrices to provide consistent countywide corridor performance criteria to be used to identify and evaluate transportation improvements to address subregional needs. These matrices will provide a performance evaluation methodology to identify short, mid and long term projects through a subregional collaborative process. It is envisioned that these matrices will assist the subregions in identifying projects for future transportation funding as well as future updates to the Metro Long Range Transportation Plan (LRTP).

In February 2014, the Metro Board approved the holistic countywide approach for preparing Mobility Matrices for the San Gabriel Valley Council of Governments (COG), Central Los Angeles, Westside Cities COG, San Fernando Valley COG, Las Virgenes/Malibu COG, North County Transportation Coalition, and South Bay Cities COG. For the purposes of the Mobility Matrix work effort, cities with membership in two COGs were given the opportunity by the Board to select one COG in which to participate. Specifically, the Arroyo Verdugo Cities' local jurisdictions are included in both the SGVCOG and SFVCOG and that subregion decided to have the cities of La Cañada Flintridge, Pasadena and South Pasadena included in the SGVCOG, while Burbank and Glendale are included in the SFVCOG. The City of Santa Clarita opted to be included in the San Fernando Valley COG instead of

North County. The Gateway Cities COG is developing its own Strategic Transportation Plan which will serve as their Mobility Matrix. These subregional boundaries, as defined for the Mobility Matrices, will be used in the analysis of existing conditions. An overview of the subregions being evaluated in the Mobility Matrix Studies is provided in Figure 1-1.

The San Fernando Valley (SFV) Council of Governments (COG) was formed in 2010 with the adoption of a Joint Powers Agreement by the City and County of Los Angeles along with the Cities of Burbank, Glendale, San Fernando and Santa Clarita. The main purpose of the SFVCOG is to develop and implement subregional policies and plans that are unique to the greater San Fernando Valley region, and to voluntarily and cooperatively resolve differences among the COG members. An overview of the SFVCOG borders is shown in Figure 1-2. The long-term goal of the SFVCOG is to build consensus on a vision for a future transportation system that embraces efficiency and innovation for continuous improvement of the quality of life in the subregions. To accomplish this goal, a mobility matrix will be developed for the SFVCOG region as part of this project that identifies and applies screening criteria to corridors in the subregion to develop a framework for potential transportation improvements.

## 1.2 Report Purpose and Structure

This document establishes baseline conditions in the SFVCOG Mobility Matrix Subregion. It includes existing projects and an overview of the study area's demographics, as well as develops a high level inventory of the transportation facilities being evaluated, including



highways, arterials, transit, bike/pedestrian, and goods movement.

Section 2.0 describes the existing projects and plans in the subregions, and their relationship to the Mobility Matrix goals. The demographics of the study area are covered in Section 3.0. Section 4.0 contains an overview of existing travel patterns. Sections 5.0, 6.0, and 7.0 analyze the freeways and arterials, the active transportation facilities, and transit service in the area, respectively. Finally, Section 8.0 provides a summary and conclusions.





Figure 1-1. Mobility Matrix Subregions – Overview

Source: STV, 2015







Source: STV, 2015



# 2.0 EXISTING PROJECTS AND STUDIES

Table 2-1 lists projects within the SFVCOG Mobility Matrix Subregion which have been recently completed or are in progress. The projects were drawn from a variety of sources, including the preliminary project list, the cities' General Plans, Metro's Call for Projects, and other regional planning documents. The status of these projects has been confirmed after meeting with representatives from each of the COG cities.

The projects include those which are local in scope, but help achieve the Mobility Matrix goals, as well as projects with wider subregional and regional impacts.



Project Type	City/Corridor	Project	Status
	Burbank	Burbank-Glendale Traffic System Coordination	Funded
		Traveler Information and Wayfinding System	Funded
		Los Angeles River Bridge	In design
		San Fernando Bikeway	In design
		San Fernando Blvd/Burbank Blvd intersection improvements	In design
		Grandview Ave at-grade railroad crossing modifications	Completed
	Glendale	Sonora Ave at-grade railroad crossing modifications	Completed
		Traffic signal and ITS improvements	Completed
	Log Angolog	Colfax Bridge replacement	Completed
Local	Los Angeles	Widen Tujunga Ave Bridge over LA River	Completed
Local		ITMS Phase IV interconnect gap closure and signal synchronization	Funded
	Santa Clarita	Citywide wayfinding program for pedestrians and bicyclists	In design
		Golden Valley Rd and SR-14 roadway capacity and intersection improvements	In design
		McBean Parkway widening/gap closure over Santa Clara River	Completed
		Santa Clarita Citywide public information relay system	Completed
		Golden Valley Rd bridge: connecting Soledad Canyon to Newhall Ranch Rd	Completed
		Newhall Ranch Rd from Golden Valley Rd to Bouquet Canyon Rd	Completed
		ITMS Phase III and signal synchronization gap closure	Completed
		McBean Regional Transit Center park-and-ride	Completed
		Newhall Gateway roundabout	Completed
		I-5/Olive Ave overpass	In design
		I-5/Magnolia Blvd overpass	In design
Dogional	I-5	I-5 Empire Project	In construction
Regional		I-5/SR-170 Interchange	In construction
		I-5/SR-14 interchange and HOV lanes	Completed
	Metro Orange Line	Orange Line extensions from Canoga Station to Chatsworth Metrolink Station	Completed



## 3.0 STUDY AREA DEMOGRAPHICS

The following section describes general demographic characteristics for the SFVCOG study area. Characteristics that are examined include land use patterns, population and employment, and environmental justice communities.

## 3.1 Land Use

About one-third of the area is open and vacant land. Housing covers about 37% of the study area. The City of Los Angeles -SFV and the City of San Fernando have half of their land uses covered by single family housing, while Burbank and Glendale have slightly higher concentrations of multi-family housing. Commercial properties make up 9% of the study area, with major shopping centers in Glendale, Santa Clarita, and near Warner Center. The City of San Fernando has a high percentage of commercial land uses, 17%, due to the City's commercial corridor specific plans. Industrial land uses are concentrated along the Metrolink corridors, and represent 5% of the study area.

The SFVCOG Mobility Matrix Subregion's land uses are shown in Table 3-1 and Figure 3-1, with the data and categories taken from the 2008 SCAG land use database.

	Low Density Residential	Medium/High Density Residential	Commercial	Industrial	Public Facilities/ Institutions	Transportation/ Utilities	Mixed Use	Open Space	Vacant	Other
Burbank	36%	9%	7%	7%	3%	7%	2%	3%	27%	1%
Glendale	30%	7%	9%	4%	3%	3%	0%	3%	39%	2%
San Fernando	51%	3%	17%	14%	3%	3%	0%	2%	1%	6%
Santa Clarita	25%	3%	8%	6%	1%	4%	0%	4%	44%	5%
Los Angeles-SFV	45%	5%	11%	5%	5%	6%	0%	4%	18%	3%
SFVCOG Study Area	35%	4%	9%	5%	3%	4%	0%	3%	33%	3%

Table 3-1. Land Uses in Study Area

Source: STV, 2015; SCAG, 2008





Figure 3-1. 2008 Land Use – SFVCOG Mobility Matrix Subregion

Source: STV, 2015; SCAG, 2008



## **3.2** Population and Employment

#### 3.2.1 2014 Population and Employment

Employment and population density in the SFVCOG Mobility Matrix Subregion varies from city to city. Santa Clarita is the least dense in terms of both employment and population, while the City of San Fernando and the City of Los Angeles-SFV have the highest population densities. Glendale and Burbank are also dense, although their numbers are somewhat skewed by the large amount of open and vacant space in the cities in the Verdugo Hills. Employment is currently highly concentrated around employment centers, such as Warner Center, downtown Burbank, Ventura Boulevard, Media District, and downtown Glendale.

Table 3-2 shows the 2014 population and employment densities for the cities, with data drawn from the Metro 2014 Short Range Transportation Plan (SRTP). Figure 3-2 shows the 2014 population and employment for the study area.

Table 3-2. 2014 Population and	<b>Employment Densities – SFVCOG</b>
Mobility Ma	atrix Subregion

City	Population Density (residents/sq. mile)	Employment Density (jobs/sq. mile)		
Burbank	5,916	4,896		
Glendale	6,441	3,159		
San Fernando	9,916	6,306		
Santa Clarita	3,194	1,442		
Los Angeles-SFV	7,413	3,197		

Source: STV, 2015; Metro 2014 SRTP





Figure 3-2. 2014 Population and Employment – SFVCOG Mobility Matrix Subregion

Source: STV, 2015; Metro 2014 SRTP



#### 3.2.2 Population and Employment Change

The growth rates for jobs and employment are fairly balanced in Glendale, Santa Clarita, and in the San Fernando Valley, as well as for the SFV Mobility Matrix Subregion overall. In Burbank, however, employment growth is twice that of population growth, while San Fernando has the inverse trend. From 2014 to 2024, residential and employment growth will mostly be concentrated in Santa Clarita. Employment growth will mostly concentrate around existing job centers, including Universal City and Warner Center.

Table 3-3 summarizes the changes in population and employments in the cities and in the SFVCOG Mobility Matrix Subregion, with data drawn from Metro's SRTP model. Figure 3-3shows the projected changes from 2014 to 2024.

City	Туре	2014	2024	% change
Durbonlt	Residents	103,440	109,324	5.5%
DUIDAIIK	Jobs	90,257	101,909	12.9%
Clandala	Residents	190,451	199,168	4.6%
Gleffuale	Jobs	93,416	97,894	4.8%
San	Residents	23,681	24,665	4.2%
Fernando	Jobs	15,060	15,490	2.9%
Santa	Residents	205,443	235,885	14.8%
Clarita	Jobs	92,750	108,829	17.3%
Los	Residents	1,443,760	1,528,631	5.9%
Angeles- SFV	Jobs	610,539	640,199	4.9%
SFVCOG	Residents	1,966,775	2,097,673	6.7%
Study Area	Jobs	902,022	964,321	6.9%
LA	Residents	9,401,206	10,075,913	7.2%
County	Jobs	4,159,639	4,374,145	5.2%

# Table 3-3. Projected Population and Employment Change, 2014-2024 – SFVCOG Mobility Matrix Subregion

Source: STV, 2015; Metro 2014 SRTP





Figure 3-3. Population and Employment Change – 2014-2024 – SFVCOG Mobility Matrix Subregion

Source: STV, 2015; Metro 2014 SRTP



### **3.3** Environmental Justice Communities

#### 3.3.1 Minority and Low-Income Populations

The SFVCOG Mobility Matrix Subregion has several communities which may bear higher environmental burdens, compared to the rest of the county. The Cities of San Fernando and Los Angeles-SFV both have high percentages of minority and low-income populations, compared to the rest of the study area and to Los Angeles County. The City of San Fernando has the largest minority population in the SFVCOG Mobility Matrix Subregion, 93%, as well as the highest low-income population at 19%. In Los Angeles-SFV, 63% of the population is minority and 15.8% are in poverty. Additionally, most of the areas with transit dependent populations are in Los Angeles-SFV.

Table 3-4 provides an overview of some racial and economic characteristics for the cities in the SFVCOG Mobility Matrix Subregion, with data from the 2010 Census. Figure 3-4 shows the median household income in the study area, using data from the 2013 American Community Survey. Additionally, the map uses data from the Metro 2014 SRTP and shows the areas with transit dependent communities.

Community	Percentage Total Minority	Median Household Income <sup>1</sup>	Population Living Below Poverty Level
Burbank	42%	\$67,662	8%
Glendale	37%	\$62,690	13%
San Fernando	93%	\$50,768	19%
Santa Clarita	47%	\$90,883	8%
Los Angeles-SFV	63%	\$63,248	16%
Los Angeles County	72%	\$55,476	16%

Table 3-4. Racial and Economic Characteristics within Study Area

<sup>1</sup> Median income was determined by averaging the median income of Census tracts groups that were within the study area

Source: STV, 2015; Census, 2010





Figure 3-4. Environmental Justice Communities in Study Area

Source: STV, 2015; Metro 2014 SRTP; American Community Survey, 2013



#### 3.3.2 Pollution and Vulnerable Populations

The CalEnviroScreen 2.0 methodology was used to evaluate communities which may be disproportionately burdened by pollution. The CalEnviroScreen scores incorporate a broad range of factors related to pollution and health; they include environmental indicators, such as particulate matter and traffic, and also socioeconomic characteristics, such as elderly populations, poverty levels, and educational attainment. Census tracts with lower scores have a lesser pollution burden, while tracts with higher scores face higher environmental risks and have more sensitive populations.

Santa Clarita has the lowest scores in the SFVCOG Mobility Matrix Subregion, as their pollution burdens are fairly low and there are fewer low-income and minority populations. Burbank and Glendale's scores are mixed, with much higher pollution scores near the freeways, but their population scores overall are average compared to the SFVCOG Mobility Matrix Subregion.

The City of San Fernando and the eastern portion of San Fernando Valley in Los Angeles face the highest risk, on both environmental and socioeconomic counts. The proximity to freeways and socioeconomic characteristics of those communities contribute to a higher pollution burden. Many of these communities in the highest percentiles for pollution risk are also overlap with the ones with transit-dependent populations.

Figure 3-5 illustrates the pollution burdens for the study area, relative to the scores for the entire County. The scores are broken down into percentiles, with green

representing the lowest burden and red representing the highest.





Figure 3-5. Pollution Burdens and Vulnerable Populations, Relative to Los Angeles County

Source: STV, 2015; CalEPA, 2014





## 4.0 TRAVEL MARKETS

To set the stage for examining the existing transportation system in the SFVCOG Mobility Matrix Subregion, this section analyzes the key travel markets of the area. This can be used to determine where commuters are heading to/from, and which movements require the most attention for potential improvement programs and projects.

## 4.1 Definitions

Subregional trip patterns were developed using the Metro model (year 2014). The model data were summarized for two conditions: Total Daily Person Trips, and AM Peak Hour Home Based Work Trips. The model was used to determine the number of trips to and from the SFVCOG Mobility Matrix Subregion to other Southern California destinations, and vice versa. This gives a general understanding of the major travel patterns associated with people who live and work in the SFVCOG Mobility Matrix Subregion.

Some basic definitions that apply to trips as described in this section are as follows:

- **Trip**: One-way journey or movement from a point of origin to a point of destination.
- Home-based trip: When the home of the trip maker is either the origin or destination of the trip.
- Non-home based trip: Neither end of the trip is the home of the trip maker.
- **Trip Production**: Home end (origin or destination) of a home-based trip, or origin of a non-home-based trip.

Trip Attraction: Non-home end (origin or destination) of a home-based trip, or destination of a non-home based trip.

The plots and data provided show daily person trips, which include all trips made for any reason throughout the day, and home based work trips which are trips from home to work and back.



## 4.2 Daily Trip Patterns

The model shows approximately 7 million total daily trips are produced and 7 million attracted each day for the SFV study area. Over three-quarters of those trips stay within the SFVCOG Mobility Matrix Subregion. This indicates a higher job/housing balance in this Mobility Matrix Subregion, as many of the trips each day do not leave the SFV study area.

The highest trip producer and attractor areas are the Central and Westside Mobility Matrix Subregions, with approximately 5% and 4% of daily trips to and from the San Fernando Valley, respectively.

Table 4-1 and Figure 4-1 show the daily trips produced and attracted for the SFVCOG Mobility Matrix Subregion.

Table 4-1.	Daily Trip	Production	ons and .	Attractions	(2014) -	SFVCOG
		Mobility	Matrix S	ubregion		

To/from Subregion	Trips Produced	% of Trips Produced	Trips Attracted	% Trips Attracted
San Fernando Valley	5,423,329	<b>76</b> %	5,423,329	<b>78</b> %
Central Los Angeles	402,330	6%	354,161	5%
San Gabriel Valley	220,114	3%	217,582	3%
Westside	327,866	5%	173,019	2%
Ventura Co	126,223	2%	144,677	2%
Gateway Cities	130,503	2%	123,663	2%
North County	134,642	2%	193,705	3%
Other	325,702	5%	312,461	5%
Total	7,090,709	100%	6,942,597	100%

Source: Iteris, 2014; Metro 2014 SRTP

Note: Trip patterns are based on aggregation of trip table data from the Travel Demand Model utilized for the Metro 2014 SRTP formatted by Los Angeles County subregional boundaries, as depicted in the Mobility Matrix work effort, which do not exactly correspond to the 2009 Metro LRTP subregional boundaries.







Source: STV, 2015; Iteris, 2014; Metro 2014 SRTP. Note: See Page 4-2 regarding subregional boundaries.



### 4.3 AM Peak Hour Trip Patterns

For AM peak hour home-based-work trips, there are about 933,000 AM outbound trips and 914,400 AM inbound. Almost 60% of all the morning commute trips stay within the study area, indicating that a substantial portion of the residents in the SFVCOG Mobility Matrix Subregion live and work in the SFVCOG Mobility Matrix Subregion.

The Central and the Westside Mobility Matrix Subregions are the two biggest producers and attracters of AM trips. Of all the outbound work trips, 12% go to the Westside, and 11% go to the Central area. About 7% of the incoming trips come from the Central area.

The work trip interaction with the remaining Mobility Matrix subregions and the San Fernando Valley is relatively balanced, with most of the other areas each accounting for less than 5% of the trip interactions per Mobility Matrix subregion.

Table 4-2 lists the trips produced and attracted for the study area. Figure 4-2 illustrates the inbound and outbound directions of the trips.

#### Table 4-2. AM Peak Hour Home-Based-Work Trip Productions and Attractions (20140 – SFVCOG Mobility Matrix Subregion

To/from Subregion	Trips Produced	% of Trips Produced	Trips Attracted	% of Trips Attracted
San Fernando Valley	540,788	<b>58</b> %	540,788	<b>59</b> %
Westside	115,708	12%	36,996	4%
Central Los Angeles	101,897	11%	62,945	7%
San Gabriel Valley	45,049	5%	59,486	7%
Gateway Cities	32,628	3%	33,163	4%
Ventura Co	26,924	3%	50,982	6%
South Bay	22,966	2%	28,304	3%
North County	19,475	2%	61,817	7%
Malibu	16,426	2%	13,679	1%
Other	11,149	1%	26,224	3%
Total	933,010	100%	914,384	100%

Source: Iteris, 2014; Metro 2014 SRTP

Note: Trip patterns are based on aggregation of trip table data from the Travel Demand Model utilized for the Metro 2014 SRTP formatted by Los Angeles County subregional boundaries, as depicted in the Mobility Matrix work effort, which do not exactly correspond to the 2009 Metro LRTP subregional boundaries.





Figure 4-2. AM Peak Hour Home-Based-Work Trip Productions and Attractions (2014) – SFVCOG Mobility Matrix Subregion

Source: STV, 2015; Iteris, 2014; Metro 2014 SRTP. Note: See Page 4-4 regarding subregional boundaries.



### 4.4 Travel Within Study Area

The SFVCOG Mobility Matrix Subregion includes not only the SFV subregion, but also Santa Clarita from the North County subregion.

The Santa Clarita Valley has about the same trip interaction with both the San Fernando Valley and the North County subregions. About 12% of trips are to and from North County, and 12% are to and from the San Fernando Valley.

Nearly two-thirds of daily trips stay within the Santa Clarita area, and about 40% of home based work trips stay within the SFVCOG Mobility Matrix Subregion. This is likely due to the relatively longer distance to other areas, thus creating more internal trips to satisfy shopping, school, and other trip purposes.

Figure 4-3 show the trip volumes to and from Santa Clarita from the surrounding Mobility Matrix subregions.







Source: STV, 2015; Iteris, 2014; Metro 2014 SRTP. Note: See Page 4-4 regarding subregional boundaries.



## 5.0 FREEWAYS AND ARTERIALS

Travel demand modeling analysis, as well as review of speeds and slow spots, was used to determine existing baseline conditions and future conditions on the freeways and key arterial roadways.

#### 5.1 Freeway Volumes

The Caltrans Freeway Performance Monitoring System (PeMS) was used to assess freeway volumes and speeds. PeMS is used by Caltrans for performance analysis, including monitoring of traffic flow, congestion monitoring and estimating travel time reliability. Within the study area, Caltrans PeMS monitoring locations were available through the freeway system at various locations.

The highest freeway volumes in the San Fernando Valley area occur on US-101 east of I-405, where the daily traffic flow is just over 350,000 vehicles. Other freeway segments that carry over 300,000 vehicles per day include I-405 between SR-118 and US-101: US-101 west of I-405; and I-5 just south of SR-118.

Most of the remaining freeway segments experience a daily flow of less than 200,000 vehicles per day. The SR-210 and routes in the Santa Clarita Valley carry fewer daily travelers, compared to the rest of the study area.

Figure 5-1 illustrates the average daily traffic (ADT) volumes in the SFVCOG Mobility Matrix Subregion.







Source: STV, 2015; Iteris, 2014; Caltrans, 2014



## 5.2 Freeway Speeds

Using the PeMS database, average speeds were extracted for freeways in the study area. October 2013 speed data were reviewed to understand typical peak hour operating speeds on the freeway system in the SFVCOG Mobility Matrix Subregion. Only typical weekdays (non-holiday Tuesdays, Wednesdays and Thursdays) were used as a basis for the average speed data extraction. Speeds were extracted over the 24 hours of every weekday, with the peak hours chosen based on the slowest observed speeds during the peak commute period.

During the AM peak hour, speeds under 30 mph are experienced along I-405 southbound, SR-101 in both directions throughout much of the study area, on I-5 southbound, along SR-14 southbound, and along a portion of SR-210 southbound just north of SR-2. These slow patterns reflect inbound work commute trips from the SFVCOG Mobility Matrix Subregion to employment opportunities to the south.

During the PM peak hour, the opposite patterns are seen, with significant slowing along I-405 northbound, SR-14 northbound, and I-210 northbound. Much of US-101 is congested during the evening, in addition to portions of SR-118 eastbound and I-5 southbound.

Figure 5-2 illustrates the AM peak hour freeway speeds in the SFVCOG Mobility Matrix Subregion.







Source: STV, 2015; Iteris, 2014; Caltrans, 2014



## 5.3 Arterial Volume and Speed

Unlike the freeway PeMS system, there is no single comprehensive source of daily traffic flow information on arterial roadways. Many cities do not regularly collect traffic counts or only do so for special studies or as needed in selected locations. Due to the lack of available countbased arterial volume data, the Metro 2014 travel model was used to identify daily volumes on selected key arterial corridors. The model is a good tool to assess the overall magnitude of arterial traffic flow and to understand which roadways and segments carry the highest amount of traffic in the SFVCOG Mobility Matrix Subregion.

Peak hour traffic speeds on the arterial roadways were also analyzed through the use of iPeMS system. The iPeMS gathers vehicle probe data along arterials and then delivers real-time and predictive traffic analytics. For this analysis, vehicle probe data were assessed for the months of January through April 2013, and for the hours of 7:30-8:30 AM and 4:30 to 5:30 PM. Similar to freeway PeMS, the data can be used to assess points of slowing on the arterial system.

The corridors which were analyzed include arterial roadways that are a part of the 2010 Los Angeles County Congestion Management Program (CMP), along with other key regionally significant corridors that were selected for the study. Some of the highest arterial volumes (over 40,000 ADT) are seen on east/west oriented routes in the SFV area, including Nordhoff Street, Roscoe Boulevard, Sherman Way, Victory Boulevard, and portions of Ventura Boulevard. North/south streets carrying high volumes include Canoga Avenue, De Soto Avenue, Winnetka Avenue, and Tampa Avenue. In the Santa Clarita Valley, higher volumes are seen on portions of Sierra Highway, Soledad Canyon Road, Bouquet Canyon Road, and McBean Parkway.

Peak hour slowing occurs on many of the major arterial roadways during one or both peak hours, and especially at intersections with other major arterials. The roadways with the largest segments with slow speeds include Ventura Boulevard, Van Nuys Boulevard, Lankershim Boulevard, Hollywood Way, Glenoaks Boulevard, Beverly Glen Boulevard, and Reseda Boulevard. While these roadways experience significant slowing in many areas with the SFVCOG Mobility Matrix Subregion, other arterials also experience slowing in more isolated segments.

Figure 5-3 illustrates the average speeds for the AM peak period.







Source: STV, 2015, Iteris, 2014



## 5.4 Goods Movement

The study area contains several routes which have been designated for use by trucks, including non-local "through" trucks which do not have a local destination. Other trucks making local deliveries can legally use the entire arterial system, unless specifically prohibited by ordinance. Non-local through trucks must use the designated truck route system, as shown.

Traffic crash data for the three year period of 2008 to 2011 were reviewed to determine where crashes have occurred which involve a truck. The crash locations are spread out over the SFVCOG Mobility Matrix Subregion on several of the major arterials that also serve as designated truck routes, and even a few that are not truck routes, indicating those are likely local delivery truck routes.

Figure 5-4 shows the truck routes in the SFVCOG Mobility Matrix Subregion, including municipal routes, routes designated by the Surface Transportation Assistance Act (STAA), and the DRAFT Los Angeles Countywide Strategic Truck Arterial Network (CSTAN). This is a strategic goods movement arterial plan network of facilities designated by Metro. Figure 5-5 shows the relative density of truck-involved crashes in the SFVCOG Mobility Matrix Subregion.





Figure 5-4. Designated Truck Routes – SFVCOG Mobility Matrix Subregion

Source: STV, 2015; Iteris, 2014





Figure 5-5. Truck-Related Collisions – SFVCOG Mobility Matrix Subregion

Source: STV, 2015; Iteris, 2014



# 6.0 ACTIVE TRANSPORTATION

The majority of the SFVCOG study area has been built with a suburban form that lends itself to bicycling or walking. With the exception of the fringes of the SFVCOG Mobility Matrix Subregion, most of the streets are laid out on a grid that provides a moderate to high level of connectivity. Arterial streets are generally spaced at onehalf mile apart with collector and local streets forming a finer network. The fine grid is more complete in the eastern parts of the study area than in the western portions.

In the fringe areas, such as Santa Clarita, Granada Hills, Porter Ranch, and West Hills, the street network consists of primarily disconnected streets. Arterial streets lead to residential culs-de-sac with no grids and relatively few options for people to walk or bicycle from one street to the other without going along a circuitous route. This pattern makes schools, parks, stores, and other destinations inconvenient to reach by walking or bicycling.

Land use in the SFVCOG Mobility Matrix Subregion reflects the street networks. In the communities with more complete street grids, land uses are mixed enough to bring many destinations close enough to walk to, and more within bicycling distance. These areas generally fall somewhere in between dense urban development and sparse suburban development, which reflects the time period in which much of the area was built out. The fringe areas built in the 1980s and 1990s typically have disconnected street networks with separated land uses. While some parts of the study area are fairly walkable and bikeable, Table 6-1 shows that bicycling and walking represent a very small percentage of commute modes in the SFVCOG Mobility Matrix Subregion, at less than 3% combined. About three quarters of commuters drive alone to work.

#### Table 6-1. Bicycling and Walking Commute Mode Share

Mode	Mode Share
Bicycling	0.7%
Walking	2.2%
Drive Alone	73.5%

Source: Census, 2010





## 6.1 Existing Facilities

Some communities within the SFVCOG Mobility Matrix Subregion have installed bikeways in limited locations. The following bikeway definitions are used.

- Bike paths (Class I): Exclusive paved paths separated from the roadway for bicyclists and other nonmotorized users
- **Bike lanes (Class II):** Striped, stenciled and signed lanes in the street dedicated for bicycles
- **Bike routes (Class III):** Signed bicycle routes in lanes that are shared with other traffic
- Bike boulevards: Bicycle routes that are enhanced with traffic calming measures such as, but not limited to, traffic circles in lieu of stop controls, roundabouts, diverters or bicycle-only traffic signals
- Protected bike lanes: Bike lanes that are in the street and are physically separated from the other travel lanes by parked cars, a painted area, planters or other barriers.
- **Bicycle-friendly street**: A type of Class III route that introduces street-calming engineering treatments on local and collector streets

Figure 6-1shows the existing and proposed bikeways and multi-purpose trails for the study area, which were collected from city bicycle plans and the County's Bicycle Master Plan. Several communities in the region also have horse trails and other facilities, which are depicted on the map.

## 6.2 **Proposed Facilities**

Table 6-2 shows that Santa Clarita has a significant network of bike paths, and that the network of bike lanes and bike routes throughout the study area is growing. The network is far from complete, but it has grown to a point where many origins and destinations are within a mile or so from some type of bikeway. While some streets in the study areas have existing bikeways, conditions are still not ideal even on those streets.

Table 6-3 shows currently planned facilities in the SFVCOG Mobility Matrix Subregion. Overall, total mileage of bikeways will approximately double. A large percentage of the new bikeways are attributable to Los Angeles' bicycle-friendly streets, although half of the planned routes are lanes or paths. Eventually, the planned routes will create a robust bikeway network accessible from throughout the study area. Depending on the quality of the bike lanes, (regular, colored, buffered, or protected) the completed network could offer high-quality bicycling that has potential to attract many people to ride.









Source: STV, 2015; RSA, 2014



	Burbank	Glendale	Los Angeles	San Fernando	Santa Clarita	Total
Туре	Length (mi.)	Length (mi.)				
Bike path	2.9	0.0	56.1	1.3	36.4	96.7
Bike lane	7.5	12.6	352.1	0.0	24.4	379.7
Bike route	11.9	20.8	125.9	0.0	5.4	164
Total	22.3	33.4	534.1	1.3	66.2	640.3

#### Table 6-2. Existing Bikeways in Study Area

Source: RSA, 2014

	Burbank	Glendale	Los Angeles	San Fernando	Santa Clarita	Total
Туре	Length (mi.)	Length (mi.)				
Bridge	0.4	0.0	0.0	0.0	0.0	0.4
Bike boulevard	16.8	0.0	0.0	0.0	0.0	16.8
Bike path	5.3	13.7	52.3	3.0	17.3	100.8
Bike lane	20.6	18.2	203.7	2.7	6.7	260.1
Bike route	17.8	56.0	19.9	15.1	15.7	124.5
Bicycle- friendly street	0.0	0.0	253.8	0.0	0.0	253.8
Total	60.9	87.9	529.7	20.8	57.1	756.4

#### Table 6-3. Proposed Bikeways in Study Area

Source: RSA, 2014



## 6.3 Safety

From 2008 to 2012, there has been an average of about 1,450 bicycle or pedestrian collisions per year, with a slight upward trend across the five years. Pedestrian collisions outnumber bicyclist collisions, although the latter rate has been increasing steadily each year. Most collisions result in moderate or minor injuries, while 2% of collisions are fatal.

Figure 6-2 shows the general trend of collisions across the five years, and Figure 6-3 summarizes the severity of all the collisions. Figure 6-4 depicts the relative density of the incidents, showing several hot spots at major intersections as well as some high-incident corridors.





Source: SWITRS, 2008-2012









Figure 6-4. Bicycle and Pedestrian Collisions 2008-2012 – SFVCOG Mobility Matrix Subregion

Source: STV, 2015; SWITRS, 2008-2012





# 7.0 TRANSIT

### 7.1 Bus Service

Metro operates a grid of local and rapid buses, which carry between 1,000 and 15,000 passengers per day. The Metro Orange Line runs from San Fernando Valley to the Red Line, connecting to Downtown Los Angeles, and it serves over 26,000 passengers per day.

There are many express and commuter buses operating throughout the SFVCOG Mobility Matrix Subregion. Santa Clarita Transit operates several commuter bus lines, from the Santa Clarita Valley to major employment destinations such as Warner Center, and North Hollywood. Ridership ranges from about 300 to 700 daily passengers. LADOT also has several commuter lines through the SFVCOG Mobility Matrix Subregion, with destinations including Downtown Los Angeles, Thousand Oaks, Warner Center, Simi Valley, and Pasadena; daily ridership ranges from 350 to 1,000 passengers.

As for local bus service, Glendale, Burbank, and Santa Clarita each run their own municipal transit services, with most lines carrying fewer than 1,000 passengers per day. Three LADOT DASH shuttles circulate around Northridge, Panorama City, and Studio City, with fairly high ridership. The city of San Fernando operates a trolley service. Additionally, Santa Clarita, Glendale, and Los Angeles offer dial-a-ride services.

While there are many transit options in the Subregion, several areas have infrequent service and coverage. The

SFVCOG Mobility Matrix Subregion's transit lines and ridership numbers are shown in Table 7-1 and Figure 7-1.



Operator	Service Type	I ransit Lines and Aver	age Dally Ridership
		734: 3,497	761: 11,989
	Rapid	741: 2,941	780: 10,656
		750: 5,040	794: 5,401
		150: 11,755	183: 2,673
		152: 14,426	201: 976
		154: 1,263	218: 1,299
		155: 1,872	222: 1,267
		156: 1,829	224: 9,768
	Local	158: 2,655	230: 5,301
		161: 1,481	233: 15,593
Metro		163: 10,234	234: 6,978
		164: 8,072	236: 2,785
		165: 9,785	239: 1,063
		166: 7,059	243: 2,224
		167: 2,564	245: 4,315
		169: 2,740	292: 2,636
		180: 12,314	
		28: 8,236	94: 6,882
	Local CBD	90: 6,921	96: 1,732
		92: 5,884	
	BRT	Orange Line: 26,671	

Operator	Service Type	Transit Lines and Average Daily Ridership			
		409: 495			
		419: 491			
LADOT	Express	42	2: 957		
LADOI		42	3: 537		
	DACII	Van Nuys/Studio City: 1,199			
	DASH	Panorama City: 4,995			
	<b>T</b>	796/791: 296	799/794: 746		
	Express	797/792: 468			
		1: 899	7: 310		
Santa Clarita		2: 480	12: 2,684		
	Local	3: 240	14: 795		
		4: 822	501: 38		
		5: 1662	502: 86		
		6: 2587	757: 876		
		1: 558	5: 784		
~1 1 1	T 1	2: 608	6: 599		
Glendale	Local	3: 2,122	7: 1,066		
Deenne		4: 1,376			
	Express	11E: 214	12E: 341		
		Empire/	Noho/		
Burbank Bus	Local	Downtown: 131	Media District: 250		
		Noho/Empire: 232	Media District: 381		
San Fernando	Local	Trolley: N/A			

Source: STV, 2015; Municipal agencies, 2014; Metro, 2012







Source: STV, 2015



## 7.2 Fixed Guideway

Two Metrolink lines run through the SFVCOG Mobility Matrix Subregion. The Antelope Valley Line carries about 5,800 passengers a day on weekdays, and the Ventura County Line carries about 3,835 passengers.

The Metro Red line extends into the study area, connecting with the Orange Line at the North Hollywood station. The Purple Line runs along part of the Red Line route, and average weekday boardings for the two lines combined are over 150,000. However, ridership numbers for the Red Line-only segment are also very high, at over 71,000 passengers.

Table 7-2 shows the fixed guideway ridership. Figure 7-2 illustrates the fixed guideway lines in the SFVCOG Mobility Matrix Subregion.

#### Table 7-2. Fixed Guideway Lines and Ridership in SFVCOG Mobility Matrix Subregion

Operator	Rail Lines and Daily Ridership				
Motrolink	Antelope Valley Line: 5,854*				
Metrollink	Ventura County Line: 3,825*				
	Red/Purple Line: 151,727				
Metro	Red Line (from Wilshire/Vermont): 71,792				
	Orange Line: 26,671				

Source: Metrolink, 2014; Metro, 2012







Source: STV, 2015



# 8.0 CONCLUSIONS AND NEXT STEPS

Recently completed and funded projects in the SFVCOG Mobility Matrix Subregion focus on a wide range of modes, including bicycle/pedestrian infrastructure, grade crossing modifications, and ITS improvements. Santa Clarita is unique in that it has a greater focus on expanding or building new facilities, but overall, the cities in the study area are mainly interested in pursuing a multimodal transportation system.

A large percentage of morning work trips do not leave the study area, suggesting that many people both live and work in the SFV area. However, many people commute to and from the Westside and Central Mobility Matrix Subregions, which can be seen when looking at traffic speeds on both freeways and arterials connecting the SFV to the south.

Expanding active transportation mode share can help decrease the number of vehicles on the road, but existing facilities are sparse throughout most of the SFVCOG Mobility Matrix Subregion. However, all the cities have extensive bicycle master plans, and the planned bikeways will create a comprehensive network and close interjurisdictional gaps. The new bikeways may help to decrease bicyclist and pedestrian-related collisions, especially in areas with high volumes of activity but few facilities.

The study area is well-served by transit, with a grid of local and rapid buses, several commuter lines, and municipal transit services in Glendale, Burbank, and San Fernando. Metrolink and the Metro Red and Orange Lines also operate in the area. While transit service is fairly robust, better first/last-mile connections could further strengthen the public transportation system and encourage mode shift. In turn, this could address potential environmental justice concerns; there are many communities which are surrounded by freeways, but yet are dependent upon public transit. Improvements to active transportation and transit may help decrease congestion, which would lessen the pollution burdens on these sensitive communities.

The baseline data described in this report will be used in the evaluation of the preliminary project list, which is the next step in this study.