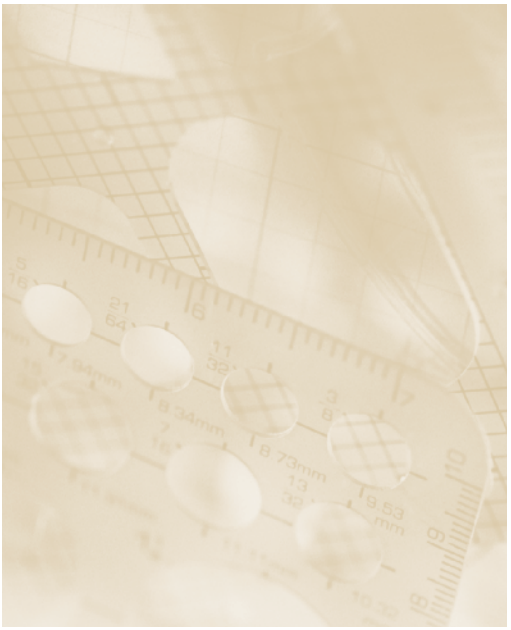
2 Introduction



2.1 INTRODUCTION

The Santa Clara Valley Transportation Authority (VTA) has prepared this Supplemental Environmental Impact Report (SEIR) in accordance with the California Environmental Quality Act (CEQA), Public Resources Code 21000 et seq.; and the CEQA Guidelines, California Administrative Code, 15000 et seq. Per CEQA Guidelines Section 15163(2)(b), a supplement to an EIR "need contain only the information necessary to make the previous EIR adequate for the Project as revised."

The SEIR updates information presented in the *Silicon Valley Rapid Transit Corridor-BART Extension to Milpitas, San Jose and Santa Clara-Final Environmental Impact Report* (November 2004). The VTA Board of Directors certified the Final Environmental Impact Report (FEIR) in December 2004 in accordance with CEQA. Analysis of the Bay Area Rapid Transit Extension to Milpitas, San Jose, and Santa Clara (BART Extension Project) presented in the FEIR was based on 10 percent design plans prepared during the Conceptual Engineering design phase of the Project. Following approval of the BART Extension Project by the VTA Board, the Preliminary Engineering design phase began, taking design plans to the 35 percent level. This SEIR describes the design modifications and evaluates the associated environmental impacts of the Project at the Preliminary Engineering design phase. The SEIR also covers any new information since certification of the FEIR.

CONCEPTUAL ENGINEERING PHASE
Design of proposed project at the 10% level
ANALYSIS INCLUDED IN THE FEIR

↓

PRELIMINARY ENGINEERING PHASE
Design of proposed project at the 35% level
ANALYSIS INCLUDED IN THIS SEIR

↓

65% ENGINEERING PHASE
Design of proposed project at the 65% level

↓

FINAL ENGINEERING PHASE
Design of proposed project at the 100% level

2.2 PURPOSE AND NEED FOR TRANSPORTATION IMPROVEMENTS

The BART Extension Project aims to improve transit services and increase intermodal connectivity among transit routes and stations serving origins and destinations in Alameda County, Contra Costa County, Santa Clara County, and portions of the Central Valley. Meeting this overall Project purpose would address a variety of related needs in the Silicon Valley Rapid Transit Corridor (SVRTC), such as reducing traffic congestion, accommodating future travel demand, conserving energy, improving regional air quality, and meeting local land use goals.

2.2.1 PURPOSE

The purposes of transportation improvements in the SVRTC study area were previously described in Chapter 2 of the FEIR, and included the following key points:

- Improve public transit service in this severely congested corridor by providing increased transit capacity and faster, convenient access throughout the San Francisco Bay Area region, including Alameda County, Contra Costa County, Central Valley, and Silicon Valley.
- Enhance regional connectivity through expanded, interconnected rapid transit services between BART in Fremont and light rail and Caltrain in Silicon Valley.
- Accommodate future travel demand in the corridor by expanding modal options.
- Alleviate severe and ever-increasing traffic congestion on I-880 and I-680 between Alameda County and Silicon Valley.
- Improve regional air quality by reducing auto emissions.
- Improve mobility options to employment, education, medical, and retail centers for corridor residents, in particular low-income, youth, elderly, disabled, and ethnic minority populations.
- Maximize transit usage and ridership.
- Support local economic and land use plans and goals.

I-880/Fremont Blvd Interchange AM Peak Period

TABLE 2.2-1:

Estimated Daily Work Trips, 2000 to 2030

SANTA CLARA COUNTY SUPERDISTRICT	WORK TRIPS FROM/TO ALAMEDA COUNTY						TOTAL WORK TRIPS		
	YEAR 2000		YEAR 2030		% CHANGE		YEAR		% CHANGE
	FROM	TO	FROM	TO	FROM	TO	2000	2030	
9	64,014	8,466	103,498	16,463	61%	94%	72,480	119,961	66%
11	15,160	10,765	28,851	19,035	90%	77%	25,925	47,886	85%
12	23,797	30,804	37,907	44,500	59%	44%	54,601	82,407	51%
TOTAL	102,971	50,035	170,256	79,998	65%	60%	153,006	250,254	64%

Source: Travel Demand Forecasts Report, Hexagon Transportation Consultants, Inc. 2006

2.2.2 ASSOCIATED NEEDS

The SVRTC study area is one of the most congested corridors in Northern California. Over the past several years, it has experienced very high and increasing levels of traffic congestion due to the growth of jobs throughout the Silicon Valley area, including downtown San Jose, and the cities of Fremont, Milpitas, and Santa Clara. Congestion is also spreading from the peak period into the off peak.

To estimate the future growth in demand, forecasts of daily home-based work trips in 2000 and 2030 were developed. Table 2.2-1 and Figures 2.2-1, 2.2-2, 2.2-3, and 2.2-4 provide these results between Alameda County and the following superdistricts in Santa Clara County:

- Superdistrict 9—Sunnyvale, Santa Clara, and Alviso
- Superdistrict 11—Central San Jose, including the downtown
- Superdistrict 12—Milpitas and northeast San Jose

Table 2.2-1 shows an increase of almost 67,300 daily work trips from Alameda County to Silicon Valley, which would result in a 65 percent increase in travel demand between 2000 and 2030. Similarly, travel demand from superdistricts within Santa Clara County to Alameda County would increase by almost 30,000 daily work trips, or 60 percent, during this same time frame. From 2000 to 2030, total work trips within the SVRTC study area are projected to grow by 64 percent. Given the current level of congestion in the corridor, this projected growth emphasizes the need for more transportation capacity in the future.

An analysis of 2000 travel indicates that approximately 103,000 total daily work trips were being made between Alameda County residences and employment opportunities in the three Santa Clara County superdistricts. Approximately 64,000 (62 percent) were destined to Superdistrict 9 (the greater north Santa Clara County area), 23,800 (23 percent) to Superdistrict 12 (Milpitas and northeast San Jose), and the remaining 15,200 (15 percent) to Superdistrict 11 (central San Jose). Figure 2.2-1 provides a schematic diagram of these travel patterns.

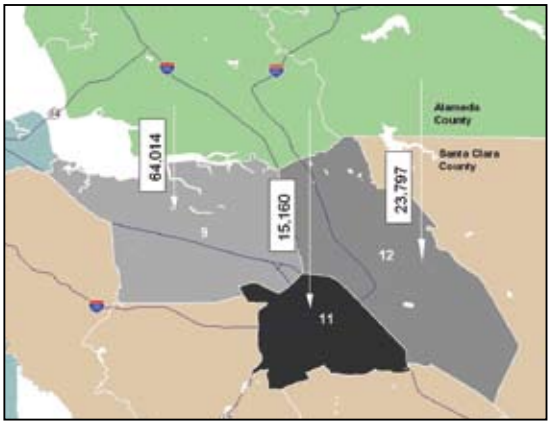


Figure 2.2-1 Year 2000 Work Trips from Alameda County to Superdistricts 9, 11, and 12

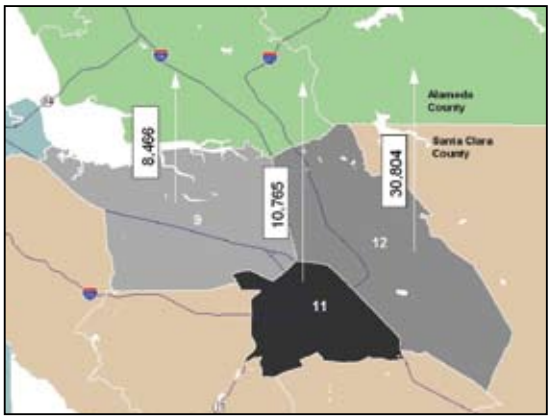


Figure 2.2-2 Year 2000 Work Trips from Superdistricts 9, 11, and 12

The total daily volume of work-related travel in the reverse direction (i.e., from Santa Clara County Superdistricts 9, 11, and 12 to Alameda County) was much smaller. There were about 50,000 total daily work trips from residences within the three selected superdistricts to Alameda County in 2000. More than half of the trips (30,800) came from Superdistrict 12; about 10,800 (22 percent) came from Superdistrict 11. The remaining 8,500 (17 percent) came from Superdistrict 9. These travel patterns are depicted in Figure 2.2-2.

Travel projections indicate that, between 2000 and 2030, total daily work trips from Alameda County residences to the employment opportunities within the three superdistricts in Santa Clara County will increase by over 67,300. This suggests a 2030 demand of about 170,300 work trips from Alameda County to the three superdistricts in Santa Clara County. Approximately 103,500 (61 percent) will be destined to Superdistrict 9 (the greater north Santa Clara County), 38,000 (22 percent) to Superdistrict 12 (Milpitas and northeast San Jose), and the remaining 28,900 (17 percent) to Superdistrict 11 (central San Jose). This distribution is shown in Figure 2.2-3.

For the northbound work trips from Superdistricts 9, 11, and 12 to Alameda County, the travel volume is projected to reach about 80,000. This represents a gain of almost 30,000 trips over the 30-year period. Trips from Superdistrict 12 to Alameda County will reach about 44,500 in 2030. The other two origin-destination pairs will also experience growth in work-related travel. There will be over 19,000 trips from Superdistrict 11 and about 16,500 trips from Superdistrict 9 to Alameda County. This distribution is depicted in Figure 2.2-4.

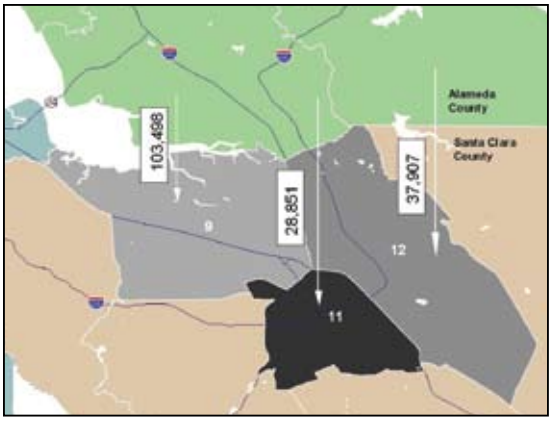


Figure 2.2-3 Year 2030 Projected Work Trips from Alameda County to Superdistricts 9, 11, and 12

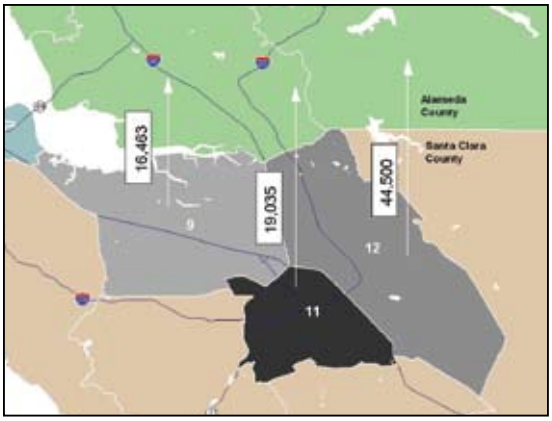


Figure 2.2-4 Year 2030 Projected Work Trips from Superdistricts 9, 11, and 12 to Alameda County

Table 2.2-2 presents the daily non-work trips in 2000 and 2030. Table 2.2-2 shows approximately 34,300 additional non-work trips from Alameda County to Silicon Valley between 2000 and 2030, an increase of 45 percent. Similarly, travel demand from superdistricts within Santa Clara County to Alameda County would increase by almost 15,900, or 36 percent, during the same timeframe. From 2000 to 2030, total non-work trips within the SVRTC study area are projected to grow by 41 percent. This future growth in non-work trips further supports the need for additional transportation capacity in this corridor.

Table 2.2-3 represents AM and PM peak period data for the increases in both home-based work trips and non-work trips between 2000 and 2030 in the SVRTC study area. In the AM peak period, work trips from Alameda County to Silicon Valley are estimated to increase by approximately 7,000, or 25 percent between 2000 and 2030. AM peak period work trips from superdistricts in Santa Clara County to Alameda County are estimated to increase by 6,200, or 56 percent, in the same timeframe. AM peak period non-work trips from Alameda County to Silicon Valley are estimated to increase by 750 trips, or 18 percent, between 2000 and 2030. AM peak period non-work trips from Santa Clara County to Alameda County are estimated to increase by 1,100, or 31 percent, in the same timeframe.

TABLE 2.2-2:

Estimated Daily Non-Work Trips, 2000 to 2030

SANTA CLARA COUNTY SUPERDISTRICT	WORK TRIPS FROM/TO ALAMEDA COUNTY						TOTAL WORK TRIPS		
	YEAR 2000		YEAR 2030		% CHANGE		YEAR		% CHANGE
	FROM	TO	FROM	TO	FROM	TO	2000	2030	
9	33,403	13,319	52,003	19,586	56%	47%	46,722	71,589	53%
11	14,850	6,747	21,700	10,000	46%	48%	21,597	31,700	47%
12	28,381	24,343	37,196	30,681	31%	26%	52,724	67,877	29%
TOTAL	76,634	44,409	110,899	60,267	45%	36%	121,043	171,166	41%

Source: Santa Clara Valley Transportation Authority 2006

TABLE 2.2-3:

Estimated AM and PM Peak Period Trips

AM PEAK PERIOD TRIPS: HOME-BASED WORK

SANTA CLARA COUNTY SUPERDISTRICT	FROM/TO ALAMEDA COUNTY						TOTAL WORK TRIPS		
	YEAR 2000		YEAR 2030		% CHANGE		YEAR		% CHANGE
	FROM	TO	FROM	TO	FROM	TO	2000	2030	
9	19,160	2,440	23,480	3,960	23%	62%	21,600	27,440	27%
11	4,250	2,690	5,570	4,290	31%	59%	6,940	9,860	42%
12	5,210	5,860	6,650	8,930	28%	52%	11,070	15,580	41%
TOTAL	28,620	10,990	35,700	17,180	25%	56%	39,610	52,880	34%

AM PEAK PERIOD TRIPS: NON-WORK

SANTA CLARA COUNTY SUPERDISTRICT	FROM/TO ALAMEDA COUNTY						TOTAL NON-WORK TRIPS		
	YEAR 2000		YEAR 2030		% CHANGE		YEAR		% CHANGE
	FROM	TO	FROM	TO	FROM	TO	2000	2030	
9	1,750	1,130	1,950	1,420	11%	26%	2,880	3,370	17%
11	750	660	930	880	24%	33%	1,410	1,810	28%
12	1,630	1,780	2,000	2,370	23%	33%	3,410	4,370	28%
TOTAL	4,130	3,570	4,880	4,670	18%	31%	7,700	9,550	24%

Table 2.2-3 cont. >>

PM PEAK PERIOD TRIPS: HOME-BASED WORK

SANTA CLARA COUNTY SUPERDISTRICT	FROM/TO ALAMEDA COUNTY						TOTAL WORK TRIPS		
	YEAR 2000		YEAR 2030		% CHANGE		YEAR		% CHANGE
	FROM	TO	FROM	TO	FROM	TO	2000	2030	
9	2,620	14,850	4,010	18,200	53%	23%	17,470	22,210	27%
11	2,230	3,370	3,540	4,440	59%	32%	5,600	7,980	43%
12	4,710	4,230	7,140	5,460	52%	29%	8,940	12,600	41%
TOTAL	9,560	22,450	14,690	28,100	54%	25%	32,010	42,790	34%

PM PEAK PERIOD TRIPS: NON-WORK

SANTA CLARA COUNTY SUPERDISTRICT	FROM/TO ALAMEDA COUNTY						TOTAL NON-WORK TRIPS		
	YEAR 2000		YEAR 2030		% CHANGE		YEAR		% CHANGE
	FROM	TO	FROM	TO	FROM	TO	2000	2030	
9	2,670	3,310	3,300	3,350	24%	1%	5,980	6,650	11%
11	1,420	1,510	1,880	1,920	32%	27%	2,930	3,800	30%
12	3,500	3,340	4,400	4,220	26%	26%	6,840	8,620	26%
TOTAL	7,590	8,160	9,580	9,490	26%	16%	15,750	19,070	21%

Source: Santa Clara Valley Transportation Authority 2003

In the PM peak period, work trips from Alameda County to Silicon Valley are estimated to increase by approximately 5,100, or 54 percent, between 2000 and 2030. PM peak period work trips from superdistricts in Santa Clara County to Alameda County are estimated to increase by 5,600, or 25 percent, in the same timeframe. PM peak period non-work trips from Alameda County to Silicon Valley are estimated to increase by 2,000 trips, or 26 percent, between 2000 and 2030. PM peak period non-work trips from Santa Clara County to Alameda County are estimated to increase by 1,300, or 16 percent, in the same timeframe.

In the face of this projected growth in travel demand, preserving access is extremely important, given that Silicon Valley is the economic engine of the Bay Area and beyond. The northeastern part of Santa Clara County contains a majority of Silicon Valley's current employment. Office and research/development land uses have expanded rapidly in this area over the past few years. Travel in this area is expected to grow dramatically as northern San Jose, Santa Clara, and Milpitas continue to develop vacant land and intensify development on currently developed sites.

In addition, Santa Clara County historically has been job-rich and housing-poor, relying on workers who live outside of the county to fill jobs within the county. Milpitas and Santa Clara have two of the highest jobs-housing imbalances in Santa Clara County, with Milpitas at 3.61 and Santa Clara at 3.72[1] in 2000. Overall, Santa Clara County had 1.93 jobs per household. From 2000 to 2030, Milpitas is expected to experience a large growth in both jobs (37 percent) and housing (50 percent), as shown in Table 2.2-4.

Table 2.2-5 illustrates population and employment growth within the entire SVRTC study area from 2000 to 2030, as forecast by the Association of Bay Area Governments (ABAG). The increase is dramatic in the southern part of the corridor; Superdistricts 9, 11, and 12, which make up Sunnyvale-Santa Clara-Alviso; central San Jose; and Milpitas-northeast San Jose. In this area, over 248,700 jobs will be added, while housing will grow by approximately 137,200. Because employment is growing more than housing, these growth rates help explain the projected increase in commuting to jobs in Silicon Valley. Southern and eastern Alameda County (Superdistricts 16 and 15) are are projected to add even more jobs, roughly 175,600 for a 66 percent increase. This supports the growth in Santa Clara County residents traveling to work in Alameda County.

[1] Expressed as the number of jobs in a geographic area divided by number of households in the same area.

TABLE 2.2-4:

Households and Employment Growth, 2000 to 2030

JURISDICTION	HOUSEHOLDS (Housing Units)				EMPLOYMENT (Jobs)			
	2000	2030	GROWTH	%CHANGE	2000	2030	GROWTH	%CHANGE
Alameda County	523,365	675,922	152,557	29%	751,380	1,087,323	335,943	45%
City of Fremont	68,237	76,980	8,743	13%	108,410	146,520	38,110	35%
Santa Clara County	566,445	769,687	203,242	36%	1,091,867	1,483,121	391,254	36%
City of Milpitas	17,221	25,825	8,604	50%	62,236	84,943	22,707	37%
City of San Jose	271,807	389,686	117,879	43%	443,846	645,690	201,844	46%
City of Santa Clara	36,945	50,787	13,842	38%	137,452	172,922	35,470	26%

Source: Association of Bay Area Governments, 2000.

TABLE 2.2-5:

Households and Employment Growth by Superdistrict, 2000 to 2030

SUPERDISTRICT	HOUSEHOLDS (Housing Units)				EMPLOYMENT (Jobs)			
	2000	2030	GROWTH	%CHANGE	2000	2030	GROWTH	%CHANGE
9	88,743	137,481	48,739	55%	415,420	540,060	124,640	30%
11	92,005	145,729	53,724	58%	159,593	244,365	84,772	53%
12	99,518	134,253	34,735	35%	126,292	165,580	39,288	31%
15	60,487	101,460	40,973	68%	119,075	211,513	92,438	78%
16	99,510	126,244	26,734	27%	145,263	228,377	83,114	57%
TOTAL	440,262	645,167	204,905	47%	965,643	1,389,895	424,252	44%

Source: Association of Bay Area Governments 2003 projections

San Jose International Airport (SJIA), a major regional trip generator in the study area, is expected to increase its number of daily flights by 22 percent between the present and 2010. The annual volume of passengers is projected to grow from 12 million to 17.6 million in 2010, reaching 25 million in 2030.

2.2.2.1 Current and Future Corridor Travel Demand

Traffic increases on the major freeways in the corridor, I-680 and I-880, reflect the increases in person trips between superdistricts discussed previously. In 2000, morning peak-hour traffic at the Alameda-Santa Clara County screenline (trips crossing county line) was over 15,000 vehicles per hour (vph) in the southbound direction and about 11,000 vph in the northbound direction. By 2030, these morning peak-hour volumes are expected to increase by 28 percent to about 19,500 vph in the southbound direction and by 45 percent to almost 15,900 vph in the northbound direction.

South of I-880/Dixon Landing Road Interchange PM Peak Period

2.2.2.2 Existing and Anticipated Transportation System Deficiencies and Congestion

In spite of the planned construction of high occupancy vehicle (HOV) lanes on both I-680 and I-880, projections indicate that traffic congestion in the already very congested corridor will worsen because of growth discussed previously. Current levels of service are "F" (LOS F) in the peak hour, with future level of service anticipated to continue to be LOS F. LOS F describes failure conditions, with unacceptable delays to most vehicles, long queues, and stop-and-go flow.

A variety of improvements to transit service in the study area is expected by 2030, including a BART Extension to Warm Springs, an increase in the number of ACE trains from 3 to 8 each way, increased express transit service, and an increase to 11 Capitol train round trips per day from the current 5 round trips. These improvements are not expected to keep up with the demand for quality transit service, given the increased highway congestion expected.

2.2.2.3 Air Quality Considerations

Increasing congestion and slowing travel times for both auto and transit will potentially lead to worsening air quality in the region because there is a direct relationship between vehicle miles traveled (VMT), travel speed, and air pollution. Mobile emissions are the primary source of air pollution in the SVRTC study area. A major increase in transit service to attract new riders is needed to decrease regional VMT and improve air quality within the transportation corridor. Detailed information on air quality considerations is presented in this document in Section 4.3, *Air Quality*.

2.2.2.4 Other Needs

Other needs include:

- **Intermodal Connectivity.** With the BART extension into Santa Clara County, numerous opportunities would be available for transfers to destinations throughout the San Francisco Bay Area region and beyond. Intermodal connections would be available to existing and future services, such as VTA's light rail and buses throughout Santa Clara County, Caltrain to San Francisco, ACE to Central Valley, Capitols to Sacramento, Amtrak to San Diego and Seattle, Washington, and a planned Automated People Mover (APM) to SJIA.

- **Mobility Needs of Special User Groups/Environmental Justice.** Based on 2000 Census data, 11 percent of the households in the SVRTC study area do not have private transport, compared with 6 percent for Santa Clara County, 11 percent for Alameda County, and 6 percent for the City of Fremont. Likewise, the study area has 10 percent of its households below the poverty level, compared with 6 percent for Santa Clara County, 10 percent for Alameda County, and 4 percent for Fremont. The study area is only 28 percent Caucasian compared with 44 percent for Santa Clara County and 41 percent for both Alameda County and Fremont, indicating high percentages of minority groups within the study area. Improved transit in the SVRTC study area would increase availability and enhance service for these study area populations.

- **Support for Corridor Land Use Planning and Economic Development.** The cities of Milpitas, San Jose, and Santa Clara have established plans and policies that support transit-oriented development in the SVRTC study area, particularly around transit stations. Improved transit in the corridor would be consistent with these plans and policies.