CHAPTER 2 INTRODUCTION

2.1 INTRODUCTION

The Santa Clara Valley Transportation Authority (VTA) has prepared this Second Supplemental Environmental Impact Report (SEIR-2) 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. In accordance with 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."

This SEIR-2 updates information presented in the final environmental impact report (FEIR)[1] and the previous supplemental environmental impact report (SEIR-1).[2] The VTA Board of Directors certified the FEIR in December 2004 and the Final SEIR-1 in June 2007. Analysis of the Bay Area Rapid Transit (BART) extension to Milpitas, San Jose, and Santa Clara presented in the FEIR was based on 10 percent design plans prepared during the conceptual engineering design phase of the project. Following the VTA Board's approval of the BART Extension Project, the preliminary engineering design phase advanced design plans to the 35 percent level, which were considered in the SEIR-1. This SEIR-2 considers design changes at the 65 percent level.

BART Silicon Valley aims to improve transit services and increase intermodal connectivity among transit routes and stations serving origins and destinations in Alameda 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 environmental justice and local land use goals.

2.1.1 OVERVIEW OF THE SVRTC

The SVRTC includes most of Silicon Valley and the urbanized area of northern Santa Clara County and portions of southern Alameda County. It extends from Fremont in southwestern Alameda County through the cities of Milpitas, San Jose, and Santa Clara in Santa Clara County, as shown in **Figure 2-1**. Land uses in this large area are diverse, composed of older industrial and light

[1] Santa Clara Valley Transportation Authority, Silicon Valley Rapid Transit Corridor-BART Extension to Milpitas, San Jose and Santa Clara-Final Environmental Impact Report, November 2004.

[2] Santa Clara Valley Transportation Authority, Final Supplemental Environmental Impact Report, May 2007.

industrial uses, newer high-tech company campuses, traditional smaller-scale and downtown commercial/retail uses, large-scale mall retail uses, and single-family and multifamily residential areas.

Land use densities are low, with low-rise employment centers and predominantly single-family housing characterizing the area, although new residential units in mid-rise complexes are becoming more common. Residential development for new residents entering the expanding job market in the SVRTC has occurred well beyond Santa Clara County, in both surrounding counties and the Central Valley.

The SVRTC is rich in cultural diversity and history and contains two major educational complexes—San Jose State University in downtown San Jose and Santa Clara University in Santa Clara—as well as several community colleges. Stanford University is located immediately north of the SVRTC in northwest Santa Clara County. In 2000, near the peak of the "dot.com" boom, population in the SVRTC was approximately 119,000. There were approximately 1,001,300 jobs, or employed workers, in the SVRTC in that year. Although employment decreased between 2002 and 2005, the number of jobs in the county has steadily increased during the past 3 years and is projected to grow by over 20 percent during the next 25 years. (Detailed information on existing SVRTC land uses is presented in **Sections 4.12, Land Use,** and **4.14, Socioeconomics**.)

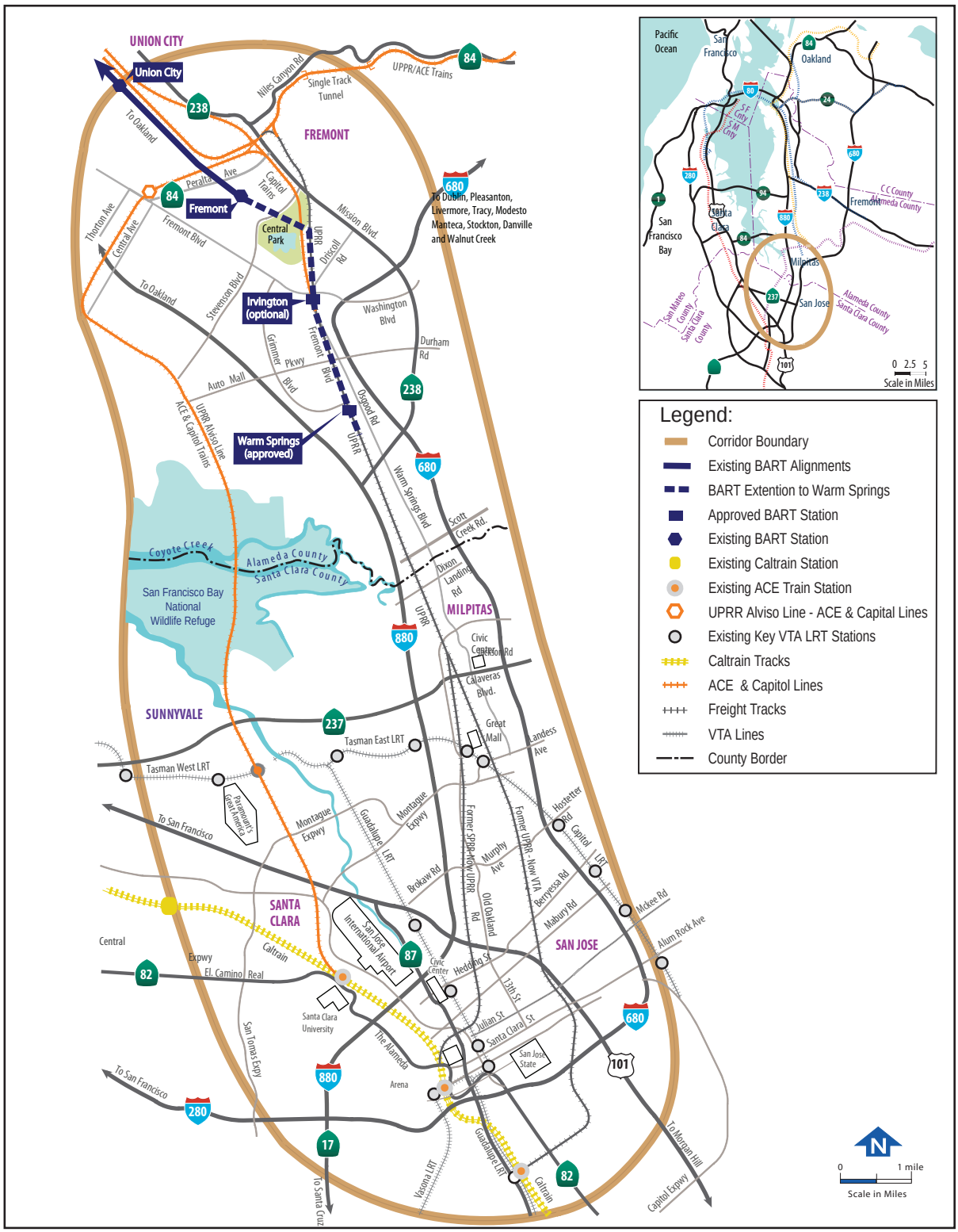
The SVRTC includes a mix of transportation facilities and modes. As shown in **Figure 2-1**, the corridor is traversed by two freight railroad mainlines, three commuter rail lines, three light rail lines, BART line service to Fremont, and a number of interstate and state routes, expressways, and major arterials. VTA is the primary transit operator, but various other rail and bus operators provide transit service to major activity and employment centers throughout the SVRTC and the greater San Francisco Bay Area.

Figure 2-2 identifies the regional transportation network near the SVRTC. This network includes East Bay BART service, San Francisco Peninsula Caltrain commuter rail service, as well as other intermodal connections with VTA light rail transit and major bus service.

2.2 PURPOSE AND NEED FOR TRANSPORTATION IMPROVEMENTS

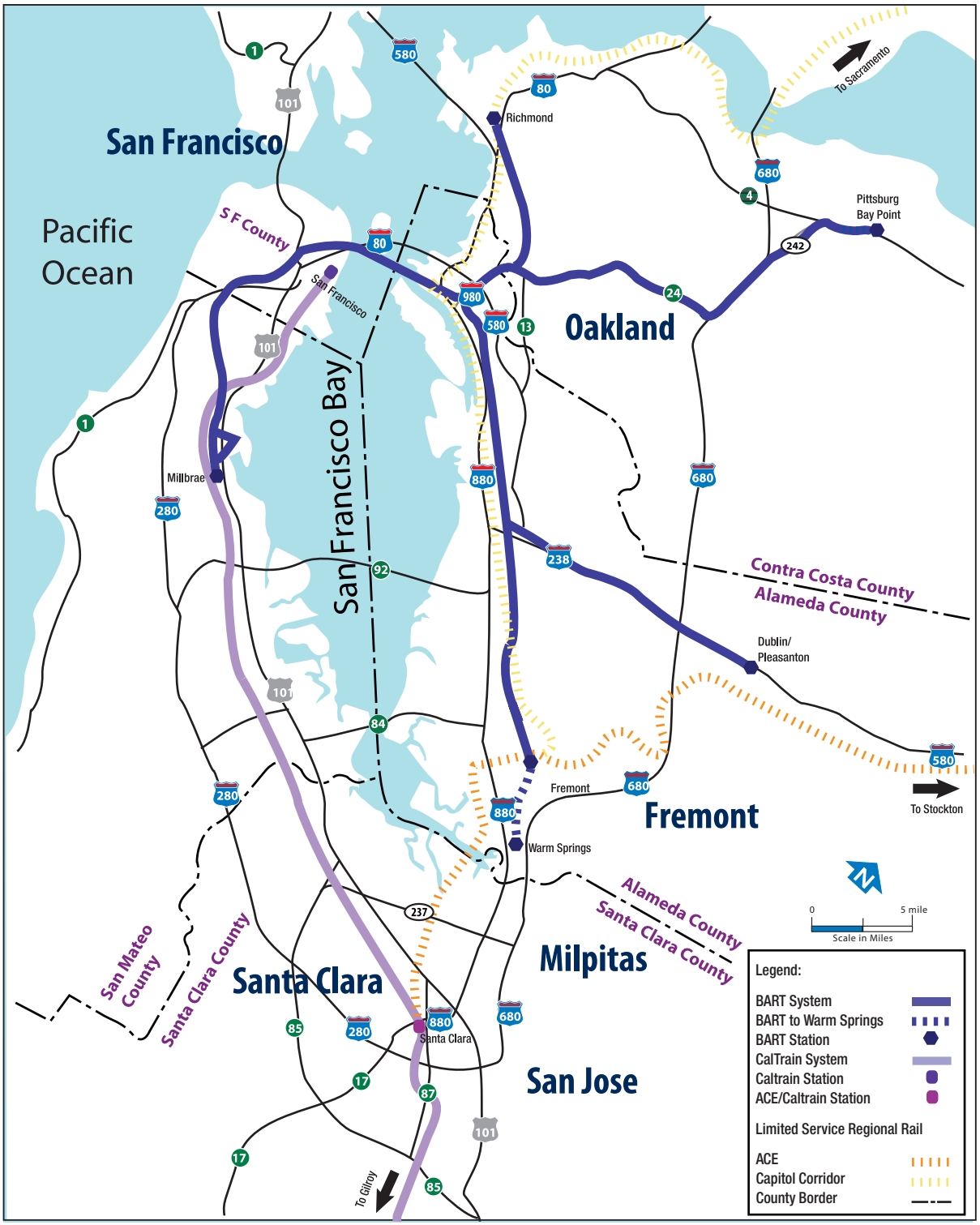
2.2.1 PURPOSE

The project objectives identified in Chapter 2 of SEIR-1 have been updated and expanded as follows:



Source: VTA, 2010.

Figure 2-1: Silicon Valley Rapid Transit Corridor



Source: VTA, 20010.

Figure 2-2: Regional Transportation Network

- Improve public transit service in this severely congested corridor by providing increased transit capacity and faster, convenient access to and from major Santa Clara County employment and activity centers for corridor residents as well as residents from other Bay Area counties and portions of the Central Valley of California.

- Enhance regional connectivity by expanding and interconnecting BART service with VTA light rail, Amtrak, Altamont Commuter Express, Caltrain, and VTA bus service in Santa Clara County; improve intermodal transit hubs where rail, bus, auto, bicycle, and pedestrian links meet.

- Increase transit ridership by expanding modal options in a corridor with ever-increasing travel demand that cannot be accommodated by existing or proposed roadway facilities; in particular, help alleviate severe and worsening congestion on Interstate 880 (I-880) and I-680 between Alameda County and Santa Clara County.

- Support transportation solutions that will maintain the economic vitality and continuing development of Silicon Valley.

- Improve mobility options to employment, education, medical, and retail centers for corridor residents, in particular low-income, youth, elderly, disabled, and ethnic minority populations;

- Improve regional air quality by reducing auto emissions.

- Support local and regional land use plans and facilitate corridor cities' efforts to direct business and residential investments in transit-oriented development, as more efficient growth and sustainable development patterns are necessary to reduce impacts on the local and global environmental (such as climate change).

Improved transit in the SVRTC is consistent with the goals established in prior studies (see **Section 2.3, Project History**) and responds to the long-range *Valley Transportation Plan 2035* (VTP 2035), adopted by VTA in January 2009.

The primary goal of the long-range plan is to provide transportation facilities and services that support and enhance Santa Clara County's high quality of life and vibrant economy.

Transportation improvements in the SVRTC would address issues identified in the Metropolitan Transportation Commission's Regional Transportation Plans (T-2030 and pending T-35), including the need to improve access and thereby preserve economic vitality as well as the need to link transportation to community development around transit nodes. Improved transit is also consistent with the policy directions of VTA's *Short-Range Transit Plan* and Santa Clara County's

Measure A. That measure, approved in 2000 by 70.6 percent of Santa Clara County voters, provided for a 30-year, ½-cent sales tax increase beginning in 2006 to pay for a set of transit improvements in Santa Clara County.

2.2.2 ASSOCIATED NEEDS

Various deficiencies in the SVRTC transportation network and the growing transportation needs of businesses and residents have prompted VTA to pursue the BART Silicon Valley project. Implementing improvements that meet the updated and expanded project purpose listed above would respond to the transportation needs described in the following subsections.

2.2.2.1 Continuing Rapid Growth in Travel Demand

Travel demand is continuing to grow in an area that is already experiencing major constraints on mobility. Travel is increasing due to both employment growth and population (or household) growth. **Tables 2-1** and **2-2** provide an overview of these trends and show households and jobs, respectively, in 2000 and their projected levels in 2030, first for Santa Clara County and then for the three SVRTC cities of Milpitas, San Jose, and Santa Clara. For a broader context, the tables show the same information for Alameda County and Fremont, the largest city in southern Alameda County.

Households in Santa Clara County are expected to grow by 36 percent over the period. The highest percentage growth will be in Milpitas; the greatest absolute growth will be in San Jose. In terms of employment, Santa Clara County jobs are projected to increase by 22 percent, with San Jose experiencing the largest percentage (37 percent) as well as absolute growth (159,630 new jobs). Aggressive city actions are encouraging this growth to be concentrated in downtown and the North First Street corridor.

Table 2-1: Households, 2000 to 2030 (in Housing Units)

Jurisdiction	2000	2030	Growth	% Change
Santa Clara County	**565,863**	**769,750**	**203,887**	**36**
City of Milpitas	17,167	25,500	8,333	49
City of San Jose	291,370	422,720	131,350	45
City of Santa Clara	**38,526**	**53,810**	**15,284**	**40**
Alameda County	523,366	671,700	148,334	28
City of Fremont	68,237	82,520	14,283	21

Source: Association of Bay Area Governments, 2007.

Table 2-2: Employment Growth, 2000 to 2030 (in Jobs)

Jurisdiction	2000	2030	Growth	% Change
Santa Clara County	**1,044,130**	**1,272,950**	**228,820**	**22**
City of Milpitas	53,980	62,560	8,580	16
City of San Jose	432,480	592,110	159,630	37
City of Santa Clara	131,690	146,000	14,310	11
Alameda County	**750,160**	**1,037,730**	**287,570**	**38**
City of Fremont	104,830	137,240	32,410	31

Source: Association of Bay Area Governments, 2007.

Alameda County household growth is expected to be somewhat lower than that of Santa Clara County, while employment growth will be higher. City of Fremont job growth is expected to exceed household growth, with both occurring in the southern portion of the city where land is still available.

Focusing on the SVRTC, **Tables 2-3** and **2-4** illustrate household and job growth, respectively, between 2000 and 2030 for:

Santa Clara County:

- Milpitas and northeast San Jose (corresponding to District 12 for the purpose of land use projections and associated travel demand)
- Central San Jose, including downtown (District 11)
- Sunnyvale, Santa Clara, and Alviso (District 9)

Alameda County:

- Fremont (District 16)
- Dublin, Livermore, Pleasanton (District 15)

The Association of Bay Area Governments produced the growth forecasts using current land use projections adopted in 2007. The expected increase in households in the SVRTC is dramatic—over 162,000. The projected increase in jobs is somewhat higher—approximately 169,000—and is highest in Fremont/Newark/Union City. The Dublin/Pleasanton/Livermore district lies outside of the SVRTC but is within its commuter shed. On a percentage basis, this district will experience the greatest growth in both households and jobs.

Job growth in the heart of Silicon Valley is on top of a very large job base. Therefore, the percentage growth tends to understate the extent of ongoing development. Over 40,000 new jobs between 2000 and 2030 are projected in the Santa Clara/Sunnyvale/Alviso district alone. Alviso includes the corridor immediately north of central San Jose.

Table 2-3: Households Growth in the SVRTC, 2000 to 2030 (in Housing Units)

SVRTC Travel Zone	County	2000	2030	Growth	Percent Change
Milpitas, Northeast San Jose (District 12)	Santa Clara	99,518	136,748	37,230	37
Central San Jose (District 11)	Santa Clara	92,005	140,851	48,846	53
Sunnyvale, Santa Clara, Alviso (District 9)	Santa Clara	88,742	140,882	52,140	59
Dublin, Pleasanton, Livermore (District 15)[a]	Alameda	60,487	101,149	40,662	67
Fremont, Newark, Union City (District 16)	Alameda	99,510	123,864	24,354	24
Total	**Santa Clara/ Alameda**	**440,262**	**643,494**	**203,232**	**46**

[a] These cities are not within the SVRTC but within the Silicon Valley commuter shed.
Source: Association of Bay Area Governments, 2007.

Table 2-4: Employment Growth in the SVRTC, 2000 to 2030 (in Jobs)

SVRTC Travel Zone	County	2000	2030	Growth	Percent Change
Milpitas, Northeast San Jose (District 12)	Santa Clara	126,292	141,763	15,471	12
Central San Jose (District 11)	Santa Clara	159,593	211,824	52,231	33
Sunnyvale, Santa Clara, Alviso (District 9)	Santa Clara	415,420	457,232	41,812	10
Dublin, Pleasanton, Livermore (District 15)[a]	Alameda	119,075	200,820	81,745	69
Fremont, Newark, Union City (District 16)	Alameda	145,263	204,820	59,557	41
Total	**Santa Clara/ Alameda**	**965,643**	**1,216,459**	**250,816**	**26**

[a] These cities are not within the SVRTC but within the Silicon Valley commuter shed.
Source: Association of Bay Area Governments, 2007.

The SVRTC through Santa Clara County contains a majority of Silicon Valley's current employment—almost 70 percent in 2000. The Sunnyvale/Santa Clara/Alviso district accounted for approximately 40 percent of all Silicon Valley jobs. Office and research/development land uses have continued to expand rapidly in the area over the past few years. Santa Clara County, and especially the Silicon Valley, has historically 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 3.14 and Santa Clara at 3.42 in 2000.[3] Overall, Santa Clara County had 1.85 jobs per household.

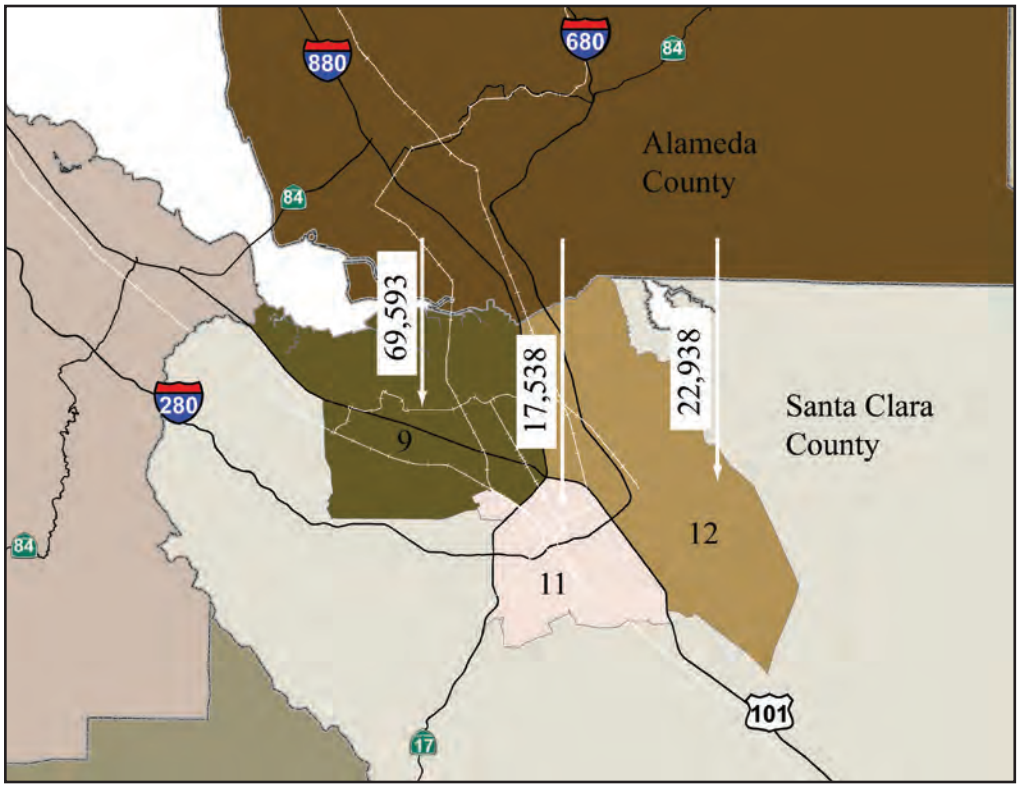
Because households in the Santa Clara County portion of the SVRTC are projected to grow somewhat more than employment, the jobs/housing imbalance will improve, but not sufficiently to reverse the strong in-commuting patterns. In fact, many of the new households in the Santa Clara County portion of the SVRTC will have one or more workers who travel outside of the county for employment opportunities. This statistic explains the regional forecasts that indicate strong commuting from Santa Clara County to Alameda County alongside continued growth in commuting from Alameda County to Santa Clara County.

An analysis of year 2000 and 2030 forecast travel, summarized in **Table 2-5**, indicates that approximately 88,000 total daily work trips were made in 2000 by Alameda County residents to and from employment opportunities in the three Santa Clara County districts that cover the SVRTC. Approximately 57,000 (64 percent) were destined to the Sunnyvale/Santa Clara/Alviso district; 20,000 (23 percent) to Milpitas and northeast San Jose; and the remaining 12,000 (13 percent) to central San Jose. By 2030, the volumes are expected to increase by approximately 22,000, to a total demand of approximately 110,000 trips. **Figure 2-3** provides a schematic diagram of inbound work trips from Alameda County to Santa Clara County in 2030.

The total daily volume of work-related travel in the reverse direction (i.e., from the SVRTC within Santa Clara County to Alameda County) was much smaller in 2000 but will more than double by 2030. **Figure 2-4** is a schematic of outbound work trips in 2030.

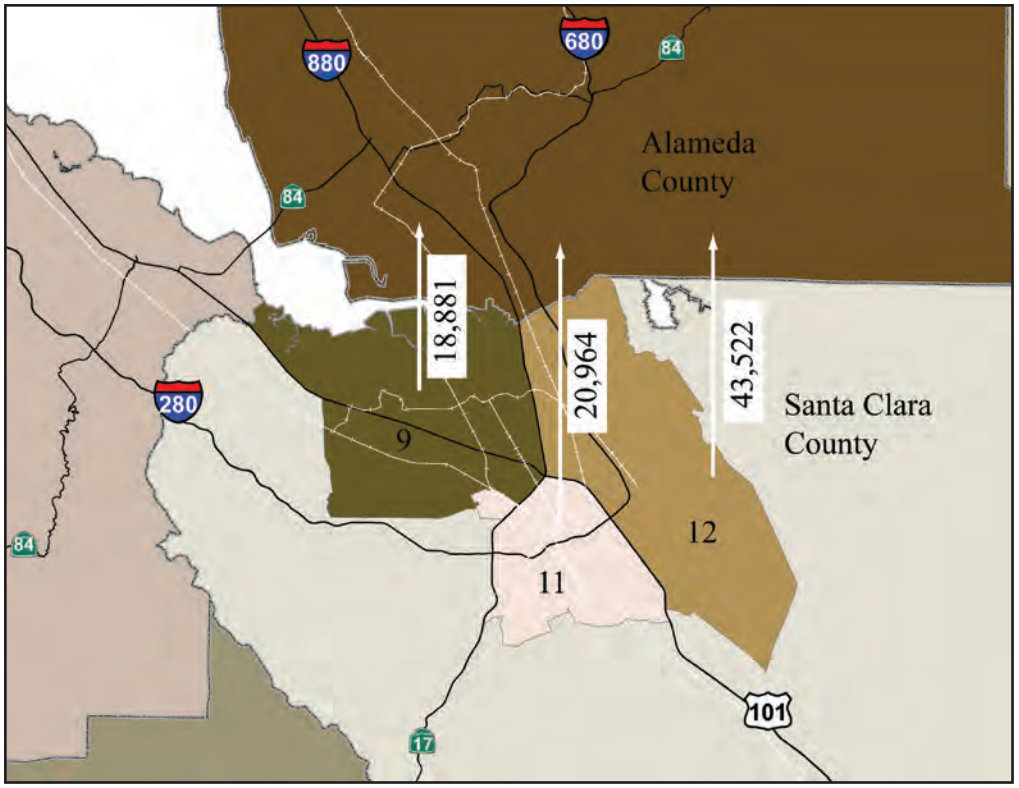
Daily non-work trips between 2000 and 2030 will also increase substantially. Approximately 8,000 additional non-work trips from Alameda County to Silicon Valley are forecast, an increase of 9 percent. Non-work trips in the opposite direction would increase by almost 15,000, or 38 percent, during the same timeframe. From 2000 to 2030, total non-work trips to, from, and within the SVRTC are projected to grow by 18 percent.

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



Source: VTA, 2010.

Figure 2-3: Year 2030 Work Trips from Alameda County to Superdistricts 9, 11, and 12



Source: VTA, 2010.

Figure 2-4: Year 2030 Work Trips from Superdistricts 9, 11, and 12 to Alameda County

Table 2-5: Estimated Weekday (Home Based) Work Trips, 2000 to 2030 (From/To Alameda County)

SVRTC Travel Zone	Year 2000 From	Year 2000 To	Year 2030 From	Year 2030 To	% Change From	% Change To	Year 2000 Total	Year 2030 Total	% Change Total
Milpitas, Northeast San Jose (District 12)	19,817	24,175	22,938	43,522	16	80	43,992	66,460	51
Central San Jose (District 11)	11,562	8,068	17,538	20,964	52	160	19,630	38,502	96
Sunnyvale, Santa Clara, Alviso (District 9)	56,632	6,505	69,593	18,881	23	190	63,137	88,474	40
Total	**88,011**	**38,748**	**110,069**	**83,367**	**25**	**115**	**126,759**	**193,436**	**53**

Source: Hexagon Transportation Consultants, Inc., Travel Demand Forecasts, February 2008.

Increased travel demand will place additional burdens on the transportation network. Travel into and out of the SVRTC and travel internal to the SVRTC will largely occur on existing freeways, expressways, major arterials, and, to a lesser extent, on existing and planned transit facilities. The roadway network in particular is not adequate and does not have the capacity, even with planned improvements, to accommodate growth in longer distance travel.

Improved transit service (rail and bus) in the SVRTC would provide needed additional capacity to address the anticipated 53 percent growth in work travel and 18 percent growth in non-work travel between 2000 and 2030.

2.3 PROJECT HISTORY

BART Silicon Valley is the outcome of various prior studies that evaluated transportation needs in the SVRTC and advanced a set of major capital improvements intended to expand transit service.

Prior studies of note include:

- *Fremont-South Bay Corridor Final Report*, 1994
- *Commuter Rail Study, Fremont-South Bay Corridor, Final Report*, 1999
- *Major Investment Study/Alternatives Analysis (MIS/AA)*, 2001

These studies constitute a comprehensive, systematic study of transportation conditions in the SVRTC, including existing and future needs. They also established transportation goals and objectives to guide the development of transportation solutions that address identified needs.

The studies satisfied federal requirements for both system- and corridor-level transportation assessments. The MIS/AA served as a federal alternatives analysis of the various transportation investment options for the SVRTC. The MIS/AA focused on transit options that were consistent with the following goals:

- **Goal 1: Congestion Relief.** To reduce the level and extent of travel delay within the corridor and regional highway system.

- **Goal 2: Mobility Improvements and Regional Connectivity.** To improve transit service to, from, and within the corridor by enhancing service quality (comfort, safety, and reliability) and quantity (improved service frequencies, travel times, operating speeds, and capacity); to improve regional connections that ease transferring between systems by developing multi-modal centers and by using multiple-agency tickets and fares.

- **Goal 3: Environmental Benefits.** To provide transit improvements that enhance and preserve the social and physical environment and minimize potential negative impacts resulting from implementation of the transit alternatives.

- **Goal 4: Transit Supportive Land Use.** To ensure the compatibility of transportation improvements with local jurisdiction land use plans and policies so that transit ridership can be maximized and the number of auto trips reduced.

- **Goal 5: Operating Efficiencies.** To produce future resource savings for VTA relative to existing and planned transit service improvements.

- **Goal 6: Cost Effectiveness.** To provide benefits from transportation improvements in relation to the costs.

- **Goal 7: Local Financial Commitment.** To maintain VTA's contribution to the cost of constructing, operating, and maintaining the Preferred Investment Strategy/Locally Preferred Alternative and the stability and reliability of its capital and operating funding sources for implementing the strategy.

- **Goal 8: Community and Stakeholder Acceptance.** To provide a transportation system that reflects the needs and desires of the residents and businesses in the corridor, is compatible with local planning initiatives, and generates widespread political support.

- **Goal 9: Environmental Justice.** To provide an equitable amount of transit service and mobility benefits to transit-dependent residents, who are generally from low-income or minority communities or households not having access to a private automobile.

- **Goal 10: Safety and Security.** To implement transit improvements without creating undue safety and security risks that cannot be mitigated.

- **Goal 11: Construction Impacts.** To minimize the extent and the duration of construction impacts on the surrounding community resulting from implementing transportation improvements.

Eleven alternatives were identified that potentially addressed these goals and corridor needs. These alternatives were analyzed for consistency in meeting goals and needs, capital and operating costs, possible environmental effects (scan-level detail), and eight performance measures. The VTA Board of Directors reviewed the results of the MIS/AA, and, on November 9, 2001, approved a locally preferred alternative that would extend BART service through Milpitas and San Jose and into Santa Clara.

A combined Draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR) and Draft 4(f) Evaluation was prepared for the entire BART Silicon Valley alignment, which includes Phase 1, in accordance with the requirements of the National Environmental Policy Act (NEPA) and CEQA and released for public review and comment in March 2004. Subsequent to the public review period for the Draft EIS/EIR, BART began NEPA clearance of the BART Warm Springs Extension, a 5.4-mile project extending south from the Fremont BART station. The Federal Transit Administration had concerns about environmental clearance actions on the BART Silicon Valley when the Warm Springs Extension project, a vital connection to the BART Silicon Valley, was simultaneously under federal environmental review. As a result, VTA chose to pursue federal and state environmental clearance of the project on independent paths and suspended the NEPA EIS process until the BART Warm Springs Extension project's federal environmental clearance was completed.

VTA continued the project environmental review process under CEQA. The VTA Board prepared and certified the FEIR in December 2004 and the SEIR-1 (updating the FEIR to address project design refinements) in June 2007. Subsequent to approval of the project evaluated in the SEIR-1, VTA completed an EIS that introduced further design changes as part of the 65 percent engineering process. These design changes are identified and evaluated in this SEIR-2.

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