4.20 CUMULATIVE IMPACTS

4.20.1 INTRODUCTION

This section summarizes the potential cumulative physical environmental consequences associated with Phase 1.

The California Environmental Quality Act (CEQA) requires an evaluation of a project's contribution to cumulative environmental impacts. According to Section 15355 of the CEQA Guidelines, cumulative impacts are defined as "two or more individual effects which, when taken together, are considerable, or which can compound or increase other environmental impacts." As stated in the CEQA Guidelines, an individual project may not have significant impacts; however, in combination with other related projects, the cumulative effects may be considerable. When evaluating cumulative impacts, CEQA recommends one of the following two methods:

- Projects to consider in the cumulative analysis include any past, present, and likely future projects identified by local and regional planning departments and agencies, including projects outside the control of the lead agency

- The cumulative analysis would consider projections contained in an adopted local, regional, or statewide plan, or would use a prior environmental document which has been adopted or certified for such a plan.

For the majority of this analysis, the first method of evaluation is used. **Subsection 4.20.2** of this SEIR-2 describes the related cumulative projects. For the cumulative discussions of traffic, air quality, and noise, the second method was used. As these areas are greatly influenced by the growth of regional traffic volumes, the cumulative analysis is built on the 2030 Metropolitan Transportation Commission (MTC) regional model, which includes an annual growth factor for regional increases in vehicle traffic and congestion.

For the cumulative discussion of greenhouse gas emissions (which is included below in **subsection 4.20.3.9)** the second method was also used. In particular, the methodology developed by the Bay Area Air Quality Management District (BAAQMD), which considers global climate change and state goals, was used. In certain other sections, other geographic areas were used to consider cumulative impacts, as explained in the relevant sections described below.

4.20.2 RELATED PROJECTS

Due to the length of time since certification of the SEIR-1, the related project list has been completely updated.

The projects discussed in this section are planned or proposed projects located within or near the Phase 1 right-of-way (ROW). **Figure 4.20-1** shows the locations of the related projects. VTA has coordinated and will continue to coordinate its planning and conceptual design for the proposed transit alternatives with the proponents of these related projects. This section includes transit, transportation, water resource, and other development projects for which environmental documentation has been completed or is currently underway.

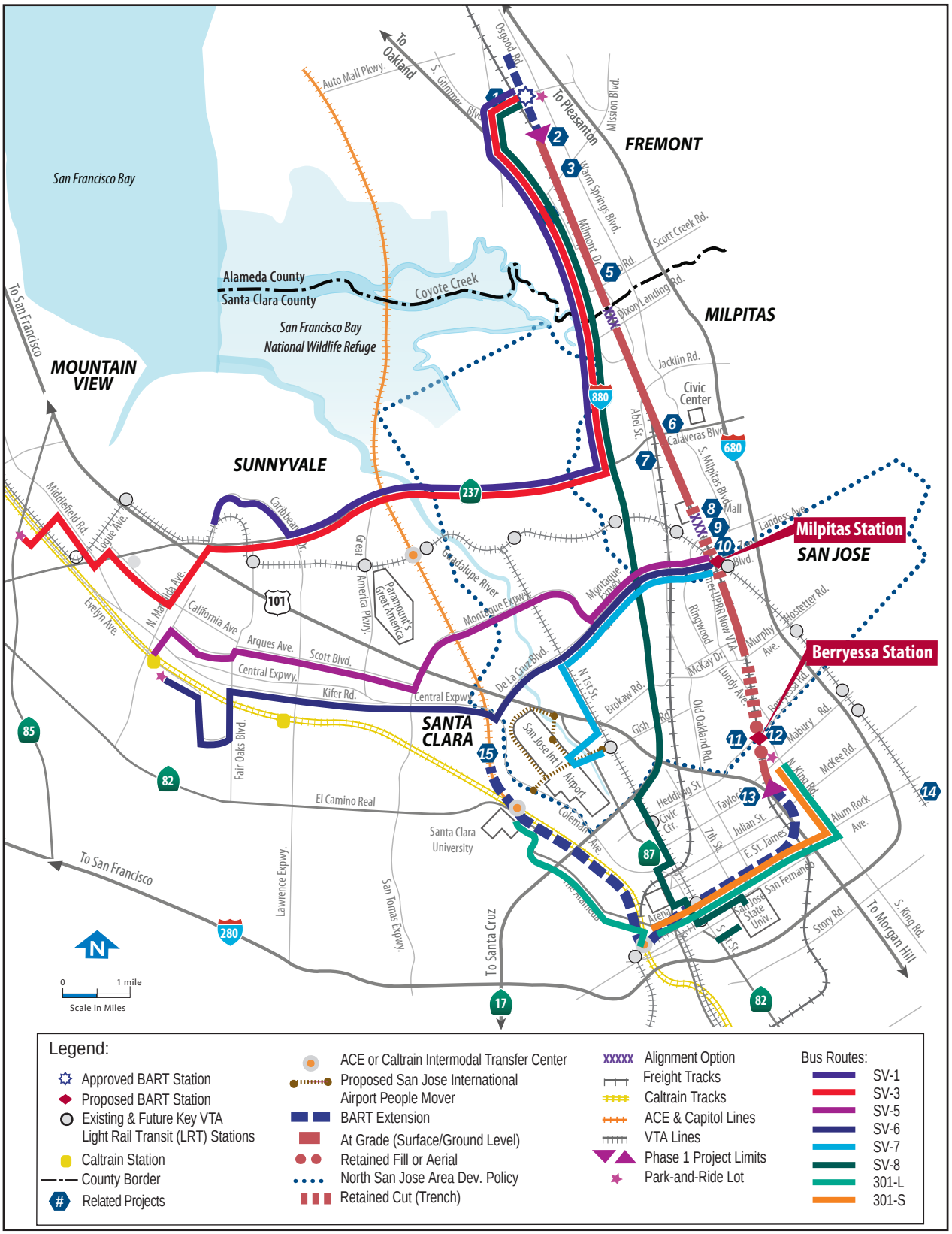
The extension of BART to Warm Springs is a prerequisite for Phase 1 because Phase 1 would connect to the approved BART Warm Springs Station. Additionally, Phase 1 would be a prerequisite for the proposed BART extension to Santa Clara (the remaining 6.2 miles of BART Silicon Valley). However, except as noted below, implementation of Phase 1 is not dependent on any of the other related projects. Each of the related projects has "independent utility" (i.e., could be built with or without implementation of Phase 1), although in several cases, design of the related projects must be coordinated with the design of Phase 1. Such coordination is currently underway between VTA and the various planning and implementing agencies identified below.

4.20.2.1 Related Development Projects

Milpitas Transit Area Specific Plan

The Milpitas City Council approved the *Milpitas Transit Area Specific Plan EIR* in June 2008 and amended it in April 2009 to include parking standards (**Figure 4.20-1**, #10). The Milpitas Transit Area is centered on the area surrounding the existing Great Mall and Montague Light Rail stations and the future Milpitas BART station proposed near the intersection of Montague Expressway and Capitol Avenue. The transit area is located at the southern edge of the City of Milpitas, immediately adjacent to San Jose. The project is 437 acres, with 146 acres in the Great Mall Redevelopment Area and 245 acres in other redevelopment areas. Regional access to that project site is provided by Interstate 880 (I-880), I-680, State Route 237 (SR 237), Montague Expressway, and Great Mall Parkway/Tasman Drive/Capitol Avenue. Local access to the site is provided by Main Street, Abel Street, Milpitas Boulevard, McCandless Drive/Trade Zone Boulevard, Centre Point Drive, Oakland Road, and Lundy Street.

The *Transit Area Specific Plan EIR* establishes specific goals, policies, standards, and capital improvement projects that are necessary to achieve the following land use vision:



Source VTA 2010

Figure 4.20-1: Related Projects

- Create attractive high-density urban neighborhoods with a mix of land uses around the light rail stations and future BART station in Milpitas.

- Create pedestrian connections so that residents, visitors, and workers will walk, bike, and take transit.

- Design streets and public spaces to create a lively and attractive street character, and a distinctive identity for each subdistrict.

The maximum amount of development analyzed in this project's EIR includes 7,109 housing units, 993,843 square feet of office space, 287,075 square feet of retail use, and 350 hotel rooms.

The *Transit Area Specific Plan* includes an implementation strategy, as well as a financing strategy prepared as a separate document, to ensure that the plan is fiscally responsible for both the city and property owners. The specific plan is a component of the *Milpitas General Plan* and has binding legal authority to guide land use, circulation, and infrastructure in the planning area. As part of the package for enactment of the *Transit Area Specific Plan*, the following documents have been prepared: General Plan Amendment, Midtown Specific Plan Amendment, Zoning Text Amendments, and Zoning Map Amendments. As of September 2010, the City of Milpitas has reviewed preliminary plans for approximately 2,200 additional residential units and 75,000 square feet of commercial/office space within the planning area.

The City of Milpitas also approved the Citation Homes residential development project in February 2009. Refer to the discussion under the heading "Citation Homes" below.

City of San Jose, North San Jose Area Development Policy

The Golden Triangle Task Force convened in November 1985 to address traffic congestion problems in Santa Clara County. The Cities of Milpitas, Santa Clara, Sunnyvale, Mountain View, Palo Alto, and San Jose were participants, as was Santa Clara County.

The objective of the task force was to better balance employment, housing, and roadway/transit systems in the Golden Triangle Area, which includes San Jose, generally north of I-880 and Berryessa Road, and all lands within the other five cities identified above.

To accomplish its objective, the Golden Triangle Task Force developed policies to: (1) reduce the number of cars on the roadway system during the commute period; (2) increase the capacity of roadway/transit facilities by funding capital improvements; (3) increase housing; and (4) limit development to that supportable by existing or planned transportation infrastructure.

The San Jose City Council adopted the North San Jose Area Development Policy on March 1, 1988, and revised it on August 13, 1998, August 19, 2003, and December 9, 2003. The five essential components of the policy, reflecting critical elements of the Golden Triangle Task Force, are listed below.

- A transportation demand management program to reduce traffic generation and increase the efficiency of the transportation system;
- Capital improvements funded on a cooperative basis, to bring the transportation system capacity into a closer alignment with projected need;
- A level of service policy that allows consideration of an area average instead of focusing on individual intersections;
- A floor area ratio policy that places a cap on the magnitude of employment and encourages housing in the impacted area; and
- A housing strategy to internalize commute trips within the Golden Triangle Area.

Figure 4.20-1 shows the area subject to the North San Jose Area Development Policy within the San Jose city limits.

Citation Homes

A development application for the Citation Homes project was submitted to the City of Milpitas on June 5, 2008. In February 2009, the City of Milpitas approved the Citation Homes project. The 16-acre Citation Homes project site is located within the Piper-Montague sub-district of the Milpitas Transit Area Specific Plan (**Figure 4.20-1**, #9). The project proposes to develop 638 multi-family residential units. These units would be constructed in three buildings, with a parking structure provided in the center of the residential buildings. Refer to the discussion under the heading "Milpitas Transit Area Specific Plan" above.

Piper Towers

Piper Towers is a 480 unit multi-family planned residential project in the City of Milpitas. The development would be constructed in three towers located on a 3-acre project site adjacent to Citation Homes (**Figure 4.20-1**, #9[1]) within the Piper-Montague sub-district of the Milpitas Transit Area Specific Plan. This project has not been approved by the City of Milpitas. Refer to the discussion under the heading "Milpitas Transit Area Specific Plan" above.

[1] #9 represents both the Citation Homes project site and the Piper Towers project site since they are immediately adjacent to each other.

Milpitas Station

Milpitas Station is a 12-acre site envisioned as a brownstone and multi-family development that would house approximately 320 units to the northeast of the planned Milpitas BART Station (**Figure 4.20-1**, #10[2]). This project has not been approved by the City of Milpitas.

Flea Market Mixed-Use Transit Villages

In March 2008, the City of San Jose approved a general plan amendment and planned development rezoning for the Flea Market Mixed-Use Transit Villages site (**Figure 4.20-1**, #11). The 120-acre Flea Market project site consists of eight parcels located on both sides of Berryessa Road. According to the December 2006 Draft Environmental Impact Report (Draft EIR) for the Flea Market,[3] the project would allow up to 215,622 square feet of industrial and/or commercial building space on the north side of Berryessa Road and up to 152,700 square feet of commercial space on the south side of Berryessa Road. A total of 2,818 dwelling units would be provided. South of Berryessa Road, residential uses include townhouses, live/work units, and condominiums. The project site includes a proposed roadway network with two connections from Berryessa Road across Penitencia Creek to the south, including a main street that connects Berryessa Road with Mabury Road.

4.20.2.2 Related Transit Projects

BART Extension to Warm Springs

As stated above, the extension of BART to Warm Springs (**Figure 4.20-1**, #1) is a prerequisite to Phase 1 because Phase 1 would be a continuation of BART facilities and service south from the planned Warm Springs Station. In 1991, BART prepared and approved an EIR for the Warm Springs Extension Project. A Supplemental EIR was prepared to address changes proposed to the project, including the BART Irvington Station. On June 26, 2003, the BART Board of Directors certified the Supplemental EIR and adopted modifications to and updates of the Warm Springs Extension Project. The Federal Transit Administration (FTA), as lead federal agency, and BART released a Final Environmental Impact Statement (EIS) for the Warm Springs Extension Project in July 2006, followed by a Record of Decision on October 24, 2006. The project is currently under construction, and BART expects to begin service to Warm Springs in 2014.

[2] #10 represents both the Milpitas Transit Area Specific Plan and the Milpitas Station projects since they are immediately adjacent to each other.

[3] City of San Jose, San Jose Flea Market Draft EIR, 2006.

Proposed BART Extension to Santa Clara

As stated above, Phase 1 is a prerequisite of the BART extension to Santa Clara because construction of the Phase 1 alignment to the Berryessa Station is required to expand BART service to Santa Clara. The BART extension to Santa Clara would include the remaining 6.2-mile alignment of BART Silicon Valley, connecting with the southern terminus of Phase 1 just south of the Berryessa Station (**Figure 4.20-1**, #15). South of Mabury Road, the extension would descend into a 5.1-mile-long subway tunnel, then continue through downtown San Jose, and terminate at grade in the City of Santa Clara near the Caltrain station. Four stations are proposed: Alum Rock, Downtown San Jose, Diridon/Arena, and Santa Clara. The BART extension to Santa Clara would be constructed when funding is available.

The FEIR and SEIR-1 previously evaluated the full extension of the 16.1-mile BART alignment to Santa Clara and both documents were certified by VTA's Board of Directors. The Final EIS evaluated a 10 mile extension from the approved BART Warm Springs Station to Berryessa and a 16.1-mile extension from the approved BART Warm Springs Station to Santa Clara. A Record of Decision approving an extension to Berryessa was signed in 2010.

Capitol Expressway Light Rail Transit Project

The Capitol Expressway Light Rail Project is a 3.1-mile extension of light rail along Capitol Expressway in San Jose, from the existing Alum Rock Station to the Eastridge Transit Center in its first phase, and to Nieman Boulevard in a future phase (**Figure 4.20-1**, #14). On August 2, 2007, the VTA Board of Directors certified the Final Supplemental EIR and approved the amended project description. This project is located approximately 2 miles from the Berryessa Station, and therefore does not directly impact Phase 1. However, it is a related programmed improvement within the *Valley Transportation Plan 2035*.

New BART Operational Control Center

BART currently runs an operation control center (OCC) in the City of Oakland to provide real-time supervisory monitoring and control capability. The facility provides automatic train supervision functions and manages train schedules, dispatches, and tracking. In addition, the facility provides control, indication, and alarm functions to enable OCC operators to manage the traction power and support plant control functions. With the exception of the planned Warm Springs Extension, it is not feasible to support additional extensions using the existing OCC facility. The facility is limited by the available space for controller workstations and by the area of the projection display board. BART is currently evaluating alternatives to support BART expansion plans and Phase 1. BART would prepare the necessary environmental studies prior to approving a project.

California High-Speed Rail Project

The proposed statewide high-speed train, an approximately 800-mile system, would provide direct service to northern California's major hub airport at San Francisco International Airport and major transit, business, and tourism centers in downtown San Francisco. A program-level EIR/EIS was completed in 2008[4]; however, the project-level EIR/EIS is not expected to be available for public review until late 2011. VTA will continue to meet and coordinate with the California High-Speed Rail Authority regarding future plans. VTA staff currently attends two quarterly technical working group meetings with Caltrain, California High-Speed Rail Authority, and city staff. One meeting covers the San Jose to San Francisco region, and the other covers the San Jose to Merced region.

4.20.2.3 Other Related Transportation Projects

Core Modification Study

Beginning in August 2007, VTA and BART initiated an update to a previously completed Core Modification Study (CMS) to assist both organizations in evaluating the impact of the proposed BART Silicon Valley on the core BART system. The extension of BART into Santa Clara County would not only increase mobility in the corridor, but would create new travel opportunities for BART passengers throughout the system. Passengers boarding or alighting along the proposed extension would utilize stations throughout the existing core BART system, and VTA and BART recognize that these changing ridership patterns would impact the existing system. The CMS will provide a planning-level estimate of the costs for improving BART stations and systems to manage both the additional boarding activity at core stations and the additional line loading through the system, which could impact core stations during certain operating conditions.

Freight Railroad Relocation and Lower Berryessa Creek Project

In 2003, VTA acquired the Union Pacific Railroad's (UPRR) Western Pacific Milpitas/Fremont line, from north of Mission Boulevard in Fremont to San Jose, a distance of approximately 10 miles. The line runs parallel to a second UPRR line (acquired by the UPRR from the former Southern Pacific); together, these lines define the alignment for Phase 1. The portion of the former Western Pacific line from approximately Mission Boulevard and the Warm Springs BART Station south is the designated ROW for Phase 1. The portion of the Western Pacific line north of Mission Boulevard was sold to BART in August 2007 to provide the alignment for the programmed Warm Springs Extension Project, which began construction in 2009.

[4] California High-Speed Rail Authority and Federal Railroad Administration, *Bay Area to Central Valley High-Speed Train Program EIR/EIS*, May 2008.

As part of the Western Pacific line acquisition, VTA agreed to allow UPRR to continue freight operations until all freight service could be relocated to the former Southern Pacific line. As part of this relocation and abandonment, the Southern Pacific line will be relocated to facilitate UPRR freight handling services in the corridor. Utilities in the UPRR corridor will also be relocated and minor real estate acquisitions will be made. When completed, the Western Pacific line will be abandoned. Designs for the relocation and abandonment of UPRR freight service are almost completed and will soon proceed independently of Phase 1.

Another element of the relocation project is the abandonment of freight railroad service to existing shippers south of Montague Expressway to make this corridor available for VTA's use. VTA is evaluating the needs of existing shippers, and proposes to assist in converting railroad freight shipping to trucks or in relocating businesses as necessary.

The rail lines to be relocated are partially within the proposed ROW for Phase 1; therefore, the completion of relocation work is a prerequisite to the construction of Phase 1.

Subsection 4.20.2.4 below discusses the Freight Railroad Relocation and Lower Berryessa Creek Project as it relates to drainage improvements.

I-880/Mission Boulevard (Route 262)/Warren Avenue Interchange Reconstruction and I-880 Widening Project

The California Department of Transportation (Caltrans) and the Alameda County Transportation Improvement Agency (ACTIA) have programmed the widening of Mission Boulevard to six lanes, three in each direction (**Figure 4.20-1**, #3). The project includes the installation of retaining and sound walls, street lighting, and raised medians, and the replacement of the UPRR bridge. Utility relocation began in spring 2009. This project will affect the length of the BART bridge structure to be constructed over the widened Mission Boulevard underpass. VTA is coordinating with Caltrans and ACTIA regarding the relocation of freight railroad facilities and other impacts to VTA property at this location. This project is within the Phase 1 alignment.

Warren Avenue/Union Pacific Railroad Grade Separation Project

The City of Fremont has programmed construction of an East Warren Avenue underpass of the UPRR ROW (**Figure 4.20-1**, #4). The grade separation project is included in a statutory exemption (Title 14, Section 15282[h] of the California Code of Regulations and Section 21080.13 of the Public Resources Code) filed in July 2002 by the City of Fremont. The grade separation includes reconfiguring the access road to a truck-rail transfer facility at Warren Avenue. Utility relocation is tentatively scheduled to begin in 2011. Funding and construction of this project will enable the BART alignment to be constructed at grade over the East Warren Avenue underpass for Phase 1. VTA is coordinating with the City of

Fremont regarding the relocation of freight railroad facilities and other impacts to VTA property at this location.

Kato Road Grade Separation

The City of Fremont plans to construct a grade separation at Kato Road between Warm Springs Boulevard and Milmont Drive in the southern portion of the City (**Figure 4.20-1**, #5). The Fremont City Council approved the project on November 18, 2008 and filed a Categorical Exemption under CEQA on November 19, 2008.

US 101/Taylor-Mabury Interchange

VTA and the City of San Jose are working in partnership with Caltrans to develop the 101 Implementation Plan, a conceptual planning and engineering study for the segment of US Highway 101 (US 101) between Taylor-Mabury and SR 87. The plan evaluates a range of projects, including a new interchange at the Taylor-Mabury crossing of US 101 (**Figure 4.20-1**, #13). Once the implementation plan is completed and projects are prioritized, work would begin on a Project Study Report. Implementation of this project would provide improved vehicular access to Berryessa Station.

Calaveras Boulevard Widening Project

VTA is currently evaluating this project as one option in an I-680/I-880 cross-connector study (**Figure 4.20-1**, #6). This project includes widening the bridge at SR 237 over the alignment of Phase 1. Because the widening project would pass over the BART alignment on an aerial structure, there is no direct conflict between the projects, but the design and construction of the widening project would require coordination with Phase 1 to avoid construction impacts and maintain required vertical clearances.

Montague Expressway Widening Project

This proposed project is under construction and consists of widening Montague Expressway from six lanes to eight lanes and Landess Avenue from four lanes to six lanes between I-680 and Park Victoria Drive (**Figure 4.20-1**, #8). Commuter lanes would be continuous between Pecten Court in Milpitas and Mission College Boulevard in Santa Clara.

4.20.2.4 Related Water Resources Projects

Phase 1 would not include construction of all of the drainage improvements required along the railroad corridor to address flooding since several projects by other entities are planned and/or programmed (funded) to address existing design flow and flooding conditions. The objective of these projects is to upgrade the creek channels to increase their capacities. Once completed, these projects will reduce the risk of flooding in the areas of improvements, which include portions of the BART alignment. These projects are described below.

Freight Railroad Relocation and Lower Berryessa Creek Project

This project includes drainage improvements on Toroges Creek, Line B-1, Line B, Scott Creek, Calera Creek, Berryessa Creek, and Wrigley Creek to accommodate anticipated stormwater flows from a 100-year flood event (**Figure 4.20-1**, #2). These improvements are planned and programmed for construction in 2009 and 2010, prior to construction of Phase 1. The improvements are discussed in the *Freight Railroad Relocation and Lower Berryessa Creek Project – Initial Study with Mitigated Negative Declaration* and addendums.

Subsection 4.20.2.3 above discusses the Freight Railroad Relocation and Lower Berryessa Creek Project as it relates to freight service improvements.

Berryessa Creek Flood Protection Project

The Santa Clara Valley Water District (SCVWD) is planning the Berryessa Creek Flood Protection Project within the project area to increase the capacity of the creek to convey the 100-year design flow and to remove areas in Milpitas and San Jose from the 100-year floodplain (**Figure 4.20-1**, #7). The project is divided into the joint SCVWD/United States Army Corps of Engineers (ACOE) Berryessa Creek Project and the Lower Berryessa Creek Project (AKA Berryessa Creek Levees Project). The joint SCVWD/ACOE Berryessa Creek Project begins at Calaveras Boulevard in Milpitas and ends at Old Piedmont Road in San Jose. The Lower Berryessa Creek Project begins at the confluence with Lower Penitencia Creek in Milpitas and ends at Calaveras Boulevard. This project includes improvements on Calera and Tularcitos creeks to prevent flooding upstream of the railroad corridor.

The Berryessa Flood Protection Project would eliminate flooding from overflow of Berryessa Creek within the project area, including along the alignment, at the Milpitas Station area, and around East Penitencia Channel. VTA is coordinating with the Santa Clara Valley Water District regarding the construction of these drainage facilities.

It should be noted that the Freight Railroad Relocation and Lower Berryessa Creek Project discussed above includes construction of a multi-cell box culvert at Berryessa Creek within the UPRR ROW that is part of the larger Lower Berryessa Creek Project. The culvert will ultimately support a segment of the BART alignment for Phase 1. The remainder of the Lower Berryessa Creek Project is currently in the design phase, which is anticipated to be completed in early 2011. Construction is expected to begin in late 2011. Upon completion of these projects, flooding from overflow of Berryessa Creek within the SVRTC would be eliminated, including along the alignment, at the Milpitas Station area, and around East Penitencia Channel.

Upper Penitencia Creek Flood Protection Project

The SCVWD and ACOE are studying various alternatives to reduce the flooding potential along Upper Penitencia Creek from Coyote Creek to Dorel Road in San

Jose (**Figure 4.20-1**, #12). Among the alternatives being studied are widening of the existing channel and construction of an underground bypass channel box structure on Upper Penitencia Creek to convey high creek flows directly to Coyote Creek. With implementation of the project, Upper Penitencia Creek could convey the design flows without overtopping the banks near the Berryessa Station area. The project would also eliminate the floodplains around the railroad corridor.

Mid-Coyote Creek Flood Protection Project

The Mid-Coyote Creek Flood Protection Project is located in the central portion of the Coyote Watershed. Its limits extend approximately 6.1 miles in San Jose between Montague Expressway and I-280. The purpose of this project is to increase the conveyance capacity of Coyote Creek to provide flood protection to homes, schools, businesses, and highways from a 100-year flood event. This project would reduce the likelihood of flooding issues associated with Berryessa Station.

4.20.3 CUMULATIVE ENVIRONMENTAL IMPACTS

This section provides an update to the cumulative impacts discussion in Section 6.3 of the FEIR and as updated in Section 4.19 of the SEIR-1.

4.20.3.1 Transportation

This section updates and completely replaces the cumulative transportation discussion in subsection 6.3.1 of the FEIR.

The cumulative setting to transportation includes areas that are greatly affected by the growth of regional traffic volumes. A comprehensive analysis of the impacts of Phase 1 in combination with the related cumulative development and transit projects (including the future extension to Santa Clara) was conducted for the Silicon Valley Rapid Transit Project EIS, completed in 2010. This discussion summarizes the methodology and conclusions of that analysis. The summary of the Phase 1 contribution to the cumulative impact discussion is taken from **Section 4.2 Transportation**, of this SEIR-2.

The potential impacts of implementing Phase 1 in combination with the related cumulative projects were evaluated in accordance with the standards set forth by the cities of Milpitas, San Jose, and Santa Clara, and the Congestion Management Program (CMP) of Santa Clara County. The analysis included evaluation of AM and PM peak hour traffic conditions for a total of 127 signalized intersections and 96 directional freeway segments. Traffic volumes under BART Silicon Valley represented year 2030 No Project conditions traffic volumes with the addition of traffic projected to be generated by the proposed Stations, which include park-and-ride, kiss-and-ride, and bus trips to both stations. The 2030

traffic volumes included traffic associated with future development included in the Association of Bay Area Governments (ABAG) projections and the projected future transportation network.

The impacts of Phase 1 in combination with the related cumulative projects on the roadway network were evaluated and compared to 2030 No Project conditions with Improvements in order to identify impacts on the roadway network (both freeways and intersections) directly associated with Phase 1 and the related cumulative projects. The improvements included the related cumulative transportation improvements identified in **subsection 4.20.2.3** of this SEIR-2. Traffic volumes for the study freeway segments were obtained from the VTA 2030 traffic model.

This analysis found that implementation of Phase 1, in combination with the related cumulative development and transit projects, would have a significant impact to freeways and intersections. The mitigation necessary to reduce significant impacts to the freeways would be the widening of the freeway, which was not considered feasible, resulting in a significant unavoidable impact to freeways. The intersection level of service analysis found that 32 study intersections would be significantly impacted and while mitigation was available at 9 intersections, feasible mitigation was not available at 23 intersections, resulting in significant unavoidable impacts at these intersections. Because implementing Phase 1 in combination with the related cumulative projects would result in significant unavoidable impacts to freeways and intersections, cumulative impacts at the freeways and intersections would be significant.

As described in **Section 4.2, Transportation,** of this SEIR-2, Phase 1 would significantly impact 14 intersections. While impacts would be mitigated to less-than-significant levels at two intersections, mitigation at two other intersections would not improve intersection operations to acceptable levels. Feasible mitigation was not available at 12 intersections, resulting in significant unavoidable impacts at these intersections. Because implementing Phase 1 would result in significant and unavoidable impacts at 12 intersections, the Phase 1 contribution to cumulative impacts would be considerable.

4.20.3.2 Air Quality

This section updates and completely replaces the cumulative air quality discussion in subsection 6.3.2 of the FEIR.

The cumulative setting for air quality includes any proposed development within the jurisdiction of the BAAQMD. According to the BAAQMD Guidelines, any project that would individually have a significant air quality impact would also have a significant cumulative air quality impact.

As described in **Section 4.3, Air Quality**, of this SEIR-2, according to the BAAQMD, Phase 1 would result in an individual and/or cumulative impact if: (1)

the operational and construction significance thresholds presented in **Section 4.3, Air Quality** and **Section 4.19, Construction**, of this SEIR-2 were exceeded; or (2) it were not consistent with BAAQMD air quality plans. As presented in **Table 4.3-4**, Phase 1 would not exceed the BAAQMD operational significance thresholds. Phase 1 would actually reduce regional vehicle miles traveled (VMT) by 0.05 percent from No Project conditions. Additionally, Phase 1 is consistent with the BAAQMD air quality plans. Given this, Phase 1 would not result in a significant cumulative impact associated with operational significance thresholds and conformity with local air quality plan.

Phase 1 would, however, result in a significant and unavoidable impact to air quality during construction. The analysis conducted in **subsection 4.19.4.2** of this SEIR-2, based on the most recent BAAQMD guidance, indicates that regional construction emissions would result in an unavoidable significant air quality impact. Although implementation of Mitigation Measure CNST-AQ-1, listed in **subsection 4.19.4.2** of this SEIR-2 would reduce NO_x, $PM_{2.5}$, and PM_{10} emissions through the incorporation of construction control measures, the NO_x emissions would continue to exceed the BAAQMD threshold for construction emissions. Because implementing Phase 1 would result in a significant and unavoidable impact, the cumulative impact would be significant.

4.20.3.3 Biological Resources

The cumulative impacts related to biological resources and wetlands identified in subsection 6.3.3 of the FEIR and as updated in the SEIR-1 remain applicable to this SEIR-2. The design changes evaluated as part of this SEIR-2 and the updates to the related projects do not result in any new cumulative impacts beyond those identified in the FEIR and SEIR-1. Therefore, Phase 1 would not contribute to a significant cumulative biological impact.

4.20.3.4 Community Services and Facilities

This subsection provides a new evaluation of cumulative impacts on community services since the certification of SEIR-1.

Increased demand for Community Services and Facilities

The cumulative setting for community services and facilities includes the schools, civic, community, and cultural facilities, libraries, parks and recreation facilities and religious facilities within the project area. Phase 1 and the future extension to Santa Clara would not introduce new permanent populations to the area and therefore not generate an increased demand for these services. Phase 1 in combination with the related development and transit projects could, however, generate an increased demand for these community services. Specifically, the residential development envisioned as part of the Milpitas Transit Area Specific Plan (9,300 housing units) and Flea Market Mixed-Use Transit Village (2,818 housing units) would introduce new permanent populations to the project area,

with a resultant increase in demand for community services. These projects will be required to provide mitigation to ensure continued availability of adequate community services and facilities as part of the review and approval process. Residential developments are also required to pay development impact fees to the Unified School District, consistent with the requirements of Senate Bill 50, which CEQA considers full mitigation for school impacts. Because the increased demand for community services and facilities would be accommodated through measures developed during the project review and approval process the cumulative impact would not be significant.

Changes in Police and Fire Service Ratios

The cumulative setting for the police and fire protection services includes any proposed development within the police and fire department service districts that, in combination with Phase 1, may generate a need for new facilities. Police and fire departments in Fremont, Milpitas, San Jose and Santa Clara would provide emergency services to development within their jurisdictions and to Phase 1 through mutual aid agreements. The projected new development in the project area and associated increase in housing units would generate an increased demand for emergency services. All of the related development projects would be required to ensure the maintenance of acceptable police and fire service ratios as part of the project review and approval process, which could include the payment of impact fees. The adherence to police and fire service ratios would reduce the potential cumulative impact to a less-than-significant level.

Implementing Phase 1 and the future extension to Santa Clara would not place additional demands upon existing police services and facilities within the area. BART provides its own police officers and would also expand existing mutual aid agreements with the cities of Fremont, Milpitas, San Jose, and Santa Clara to ensure appropriate coordination and training to address the requirements of BART Silicon Valley. The mutual aid agreements among local police, fire, and emergency service providers would be expanded to include BART police services, station areas, and facilities. As a result, BART safety officers would assist city emergency service personnel and city emergency service personnel would assist BART when necessary.

Additionally, a BART Transit Police Station will be included at the Berryessa Station. The presence of the police station at the Berryessa Station would provide a visible security presence for passengers and enhance the responses to emergency calls at this and other stations in this alternative. Because BART Silicon Valley would provide police services, expand mutual aid agreements, and include a BART Transit Police Station, the capacity to provide adequate police and fire services would be improved, resulting in a less-than-significant cumulative impact.

4.20.3.5 Cultural and Historic Resources

This section updates and completely replaces the cumulative cultural resources discussion in subsection 6.3.4 of the FEIR.

The cumulative setting for cultural resources includes those planned developments identified in this section that could potentially impact archaeological or historical resources. As described in the FEIR and SEIR-1 there are numerous archaeological resources and historic properties within the project Area of Potential Effect (APE). There are also zones within the corridor, especially historic stream channels and drainages, where the potential existence of undiscovered historic archaeological resources is moderate to high. Archaeological and historic properties could also be affected by the approved development and transit projects. Implementing Phase 1 in combination with the related cumulative projects could impact archaeological and historic resources. These impacts would, however, be offset by project-specific mitigation and compliance with federal and state cultural resource protection requirements.

The trend among the counties and cities, as reflected by goals and policies set forth in their general plans, is an ongoing effort to retain and preserve these resources. All applicable general plans contain policies geared toward the ongoing preservation of these resources. The CEQA and/or National Environmental Policy Act (NEPA) review processes associated with the development projects also provide protections for cultural resources. For BART Silicon Valley, specific mitigations include the development of a Memorandum of Agreement (MOA) and supporting Treatment Plans for significant impacts on archaeological and historic resources. On March 25, 2010, to satisfy this mitigation requirement, a Programmatic Agreement with supporting Treatment Plan was executed by the FTA and the State Historic Preservation Officer (SHPO). The required compliance of projects with federal and state cultural resource protection requirements would reduce cumulative impacts to a less-than-significant level.

4.20.3.6 Electromagnetic Fields

This section provides a new evaluation of cumulative impacts related to electromagnetic fields (EMFs) since the certification of SEIR-1.

The cumulative setting for electromagnetic fields is site specific. For example, commercial/industrial centers using major electrical systems and areas near high voltage lines or other power transmission networks would likely have higher EMF levels than residential and undeveloped areas. Field measurements to establish EMF conditions at specific locations along the Phase 1 corridor, including the future BART corridor to Santa Clara was conducted by Earth Tech in December 2001. Based on that survey, no known sources of high-level radiation or severe EMF risks to the general public were identified. Additionally, as discussed in **Section 4.7, Electromagnetic Fields**, short-term human health effects from

exposure to elevated levels of EMFs—such as central nervous system effects and heating of the body—are well established. Long-term effects from exposure to lower levels of EMFs continue to be studied. Because only short-term EMF levels are considered to have a potential human health effect, EMF impacts are not considered cumulative in nature. Thus, Phase 1, in combination with related projects, would not result in a cumulative impact.

4.20.3.7 Energy

This section provides a new evaluation of the cumulative energy impacts since the certification of SEIR-1.

The cumulative setting for energy is the long-term consumption of energy from future developments within the region. As discussed in **Section 4.8, Energy,** energy requirements for Phase 1 were estimated based on the regional VMT forecast for each major transportation mode in 2030. The analysis conducted in **Section 4.8, Energy**, of this SEIR-2 considered future energy consumption with and without the project through 2030. As shown in **Table 4.8-1** of this SEIR-2, No Project conditions are projected to generate slightly more VMT in 2030 than Phase 1. Although Phase 1 would have a neutral effect on overall energy use, and would reduce VMT slightly and generate a small increase in total electricity demand; information from the California Energy Commission (CEC) suggests that any project that would increase the demand for electricity would have a significant energy impact due to constraints on electricity supply, especially during peak hours. Based on this assumption, the project in conjunction with related projects would result in a significant cumulative impact.

Recognizing the deficiencies in the statewide transmission infrastructure, there is no cost-effective, feasible mitigation for ensuring that the demand for electricity by Phase 1 can be accommodated during peak periods without disruptions and any increase in electrical demand by Phase 1. Thus, Phase 1 is considered to have a considerable contribution to significant cumulative energy impacts.

4.20.3.8 Geology, Soils, and Seismicity

This subsection provides a new evaluation of the cumulative geological impacts since the certification of SEIR-1.

Geological hazards related to future development in the project vicinity are site specific and related to the type of building and building foundation proposed, as well as the soil composition and slope on that site. Cumulative impacts related to geology, soils, and seismicity associated with Phase 1 in combination with the related projects would involve exposure of structures and people to strong seismic ground shaking with the potential for resultant damage or harm and liquefaction hazards and settlement. The related development and transit projects would introduce new structures and populations to such potential impacts. However, the impacts to each project would be specific to that site and

its users and would not be common or contribute to (or shared with, in an additive sense) the impacts on other sites. In addition, development of each project site would be subject to site development and construction standards (in adherence with local, state, and federal requirements) that are designed to protect public safety. Therefore, cumulative geologic impacts associated with Phase 1 in combination with the related projects would be less than significant.

4.20.3.9 Greenhouse Gas Emissions

The cumulative context evaluated for impacts to greenhouse gas (GHG) emissions includes any proposed development within the jurisdiction of the BAAQMD. According to the BAAQMD CEQA Guidelines, any project that would individually have a significant air quality impact would also have a significant cumulative air quality impact.

As discussed in **Section 4.10, Greenhouse Gas Emissions**, Phase 1 would reduce VMT and associated regional GHG emissions. In addition, Phase 1 would be consistent with State and local plans, policies, and regulations to reduce GHG emissions. Therefore, the proposed project would result in a less-than-significant cumulative GHG impact.

4.20.3.10 Hazardous Materials

This subsection provides a new evaluation of the hazardous materials impacts since the certification of SEIR-1.

Environmental impacts related to hazardous materials generally occur on a site specific basis, or else are linked to a specific hazardous waste site, such as a designated superfund site. The related projects are commercial and residential developments, transportation projects, or water resources projects, and it is not anticipated that they would use quantities of hazardous materials that would combine in such a way to endanger human or environmental health. Hazardous materials are strictly regulated by local, state, and federal laws specifically to ensure that they do not result in a gradual increase to toxins in the environment. In addition, implementation of the mitigation measures required for Phase 1, as described in **subsection 4.19.4.9** of this SEIR-2, will reduce the potential hazardous material exposure risks of the construction works and lessen the potential impacts to a less-than-significant level. As a result, the development of Phase 1 in combination with the other related projects would not result in a significant cumulative impact from hazards or hazardous materials.

4.20.3.11 Land Use

The cumulative impacts related to land use identified in subsection 6.3.7 of the FEIR and as updated in the SEIR-1 remain applicable to this SEIR-2. No significant cumulative impacts are anticipated.

After certification of the SEIR-1 in 2007, the City of Milpitas approved the Citation Homes residential development project on the same site as the approved relocated Milpitas Wye in the SEIR-1. This same relocated Milpitas Wye site is being considered for Phase 1 as part of this SEIR-2 under both the Wye with Spur Connection Option and Wye and Industrial Lead Option. The approved project as part of the SEIR-1 was approved in 2007 prior to the City of Milpitas' receipt of a development application for the Citation Homes project site in 2008 and approval of the project in February 2009. The development application for the Citation Homes project also notes that VTA is considering the use of the project site for the Milpitas Wye relocation, but states that no offers to purchase the site from SCS Development had occurred at that time.

Implementation of the Citation Homes project would not be consistent with VTA options considered for the site as part of Phase 1, while implementing the VTA options would not be consistent with the City of Milpitas approved project. Since the ultimate use of this site has not yet been determined, the Citation Home project is included as a cumulative project and its associated environmental impacts are considered in this section. VTA will continue to coordinate with the City of Milpitas regarding the future use of the property as the relocated Milpitas Wye site. The ultimate future use of this site would not change the conclusions of the cumulative discussions in the FEIR and SEIR-1.

4.20.3.12 Noise and Vibration

This subsection provides a new evaluation of the cumulative noise and vibration impacts since certification of SEIR-1.

The cumulative context evaluated for impacts related to noise and vibration includes any proposed development that could affect the sensitive receptors (residential development) in the immediate vicinity of the project area, which includes the development projects listed in **subsection 4.20.2.1** and the residential development that would be accommodated in the Milpitas Transit Area Specific Plan. Cumulative noise impacts would be related to an increase in traffic noise from cumulative project development, from construction noise occurring concurrently on multiple sites, or from noise generated by BART operations. There are several noise sources associated with typical BART stations that have the potential to be intrusive to the adjacent communities. These sources include the public address system for at grade and above ground stations, noise from emergency mechanical equipment, and traffic into and out of the parking lots.

Based on the results of the traffic modeling, no significant traffic noise impacts are projected at any residential, institutional, or commercial receptors. A cumulative noise level approaching 67 dBA or a change of 12 dB are the thresholds set by Caltrans for substantial adverse effect (Traffic Noise Analysis Protocol, Caltrans, October 1998). The future increase in traffic is not substantial

enough to exceed 66 dBA or cause a 12 dB increase in noise levels at sensitive receptors throughout the alignment area. Therefore, projected 2030 traffic noise would not represent a significant cumulative impact.

Implementing Phase 1 and the future extension to Santa Clara would generate ground-borne noise and vibration and would contribute to an increase in noise levels at station areas and along the alignment; however, mitigation measures were identified that reduced significant impacts to achieve FTA noise criteria. Because the impact can be mitigated to achieve the FTA noise criteria, cumulative vibration impacts would not be significant.

Implementing Phase 1and the future extension to Santa Clara would also contribute to an increase in overall noise levels in the immediate project alignment and station areas that would affect existing and proposed sensitive receptors. Significant noise impacts would primarily occur at the above ground alignment, at stations, and at the maintenance facility. While these noise increases would contribute to cumulative increases in noise levels, the mitigation measures identified for Phase 1 in **Section 4.13, Noise and Vibration**, of this SEIR-2 and for the future extension to Santa Clara[5] would reduce impacts to a less than significant level. Therefore, the increased noise levels associated with implementing Phase 1 and the future extension to Santa Clara would not result in a significant cumulative impact.

Cumulative development project construction activities that would affect nearby residential uses will be required to comply with construction measures that reduce noise impacts to surrounding sensitive receptors. Many cities have established exterior noise level guidelines and other measures including implementation of strategic site and building design, specialized building construction methods, and noise attenuation techniques to maintain acceptable noise levels. Any EIRs prepared as part of the project review and approval process would also provide noise mitigation measures to ensure that construction noise remains with acceptable levels. Cumulative increases in noise levels are also anticipated and planned for in the General Plans of the local jurisdictions and counties. The cumulative increases in noise levels are a byproduct of planned development and growth and each city has developed policies and strategies for addressing these anticipated increases in noise levels primarily through land use and zoning regulations and development standards. Therefore, temporary construction noise would not represent a significant cumulative impact.

4.20.3.13 Security and System Safety

The cumulative setting for security and system safety includes the public, employees, or others present at BART facilities, which include aerial structures,

[5] Section 5.1 of the Final EIS provides a detailed list of noise mitigations for BART Silicon Valley. .

stations, tracks, pedestrian walkways, parking lots, parking structures, the bus transfer center, trains, and the trackway. Cumulative security and system safety impacts from Phase 1, in combination with the BART extension to Warm Springs, would be offset by project-specific mitigation and compliance with local police and fire department requirements. Furthermore, BART provides its own System Safety Department and Police Department. Therefore, cumulative impacts associated with Phase 1, in conjunction with the BART extension to Warm Springs would be less than significant.

4.20.3.14 Socioeconomics

This subsection provides a new evaluation of the cumulative socioeconomic impacts since certification of SEIR-1. The cumulative setting for socioeconomics includes the projects listed in **subsections 4.20.2.1** and **4.20.2.2** that could affect the projected population and housing needs within the project area or result in displacement of residences or businesses.

Population

Implementing Phase 1 and the future extension to Santa Clara, along with the related cumulative non-development projects would not directly generate new population growth. Anticipated residential development would, however, introduce new permanent populations to the project area. Development allowed by the Milpitas Transit Area Plan would include approximately 10,000 new residential units. The specific plan is a component of the *Milpitas General Plan* and has binding legal authority to guide land use, circulation, and infrastructure in the planning area. The population growth allowed by the Specific Plan would be consistent with the General Plan and not exceed ABAG growth projections, which are based on the General Plan. In March 2008, the City of San Jose approved a general plan amendment and planned development rezoning for the Flea Market Mixed-Use Transit Villages site, which would also allow new residential development. As a component of the General Plan, the population growth allowed by the project would not exceed ABAG growth projections for San Jose. The greatest population growth is projected by ABAG to take place in Milpitas and San Jose. Cumulative population impacts from anticipated development would therefore not be significant.

Employment

Construction of Phase 1 and the future extension to Santa Clara, along with the development projects would provide additional jobs in the region, which would be a beneficial cumulative impact. Implementing Phase 1 in combination with the future extension to Santa Clara would generate approximately 750 jobs for operation and maintenance. Implementing Phase 1 and the future extension to Santa Clara would also provide improved transportation service to people living and working in the cities of Fremont, Milpitas, San Jose, and Santa Clara. The new rail connections would facilitate residential and employment growth planned

for the study area, particularly around station areas, consistent with local jurisdiction general plans. Phase 1 in combination with the future extension to Santa Clara would improve transit reliability and services throughout the corridor and provide new stations in downtown San Jose, thereby improving regional access to downtown employment opportunities. The creation of jobs and increased access to jobs would be a beneficial cumulative impact.

Displacement of Existing Businesses or Housing

Implementing Phase 1 and the future extension to Santa Clara would require property acquisitions and resultant displacements affecting residential and non-residential properties. The estimate of displacements is based on property utilization in fall of 2007. The cumulative impact of implementing Phase 1 and the future extension to Santa Clara would be the displacement of approximately 76 to 103 businesses and 2 to 22 residential units.

Federal and state laws require consistent and fair treatment of owners of property to be acquired, including just compensation for their property. These laws also require uniform and equitable treatment of displaced persons or businesses. When acquisition occurs, properties would be appraised at fair market value and offers would be based on the approved appraised values. For relocation, the availability of alternate sites would vary; however, the vacancy rate in the project area could accommodate the need for relocated businesses. The housing stock of over 1.5 million units in Santa Clara County could accommodate relocations associated with the residential displacements.

All displacement and relocation activities would be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Act of 1970 (Uniform Act). The provisions of VTA's Relocation Program would minimize any adverse effects of the business and residential displacements associated with Phase 1 and the future extension to Santa Clara; therefore the cumulative impacts would not be significant.

4.20.3.15 Utilities

The cumulative setting for utilities includes any proposed development that would be served by the Newby Island (solid waste), the Alameda County Water District (ACWD) service area (water supply) and Union Sanitary District (USD).

Future cumulative projects planned in the Phase 1 area would require connection to existing utility systems. Cumulative development in combination with Phase 1 could result in a significant cumulative impact relative to utilities associated with the potential increase in demand for water, wastewater, and solid waste services. However, projects would be required to consult with utility service providers to determine whether there is sufficient capacity to accommodate a specific project and identify mitigation fees and appropriate

measures to reduce any impacts. Therefore, Phase 1 in conjunction with the development of related projects would not result in significant cumulative impacts to utilities.

4.20.3.16 Visual Quality and Aesthetics

The cumulative setting for visual quality and aesthetics includes any proposed development and/or cumulative projects within the same viewshed as the project area.

Over the last 30-40 years, the project area has become increasingly urbanized. During this period, the built environment has increased significantly with the commensurate reduction in undeveloped properties. The corridor is bordered primarily by a built landscape including industrial, commercial, and residential structures.

The extent of influence that transportation projects have had on visual changes in the corridor has typically been focused on station areas, where an increased number of buildings have been introduced to house mixed-use development. This development is consistent with the ongoing trend of urbanization in the Bay Area and would support jurisdictions' efforts to site in-fill development and higher densities within existing urban and suburban areas.

Cumulative visual effects from the development of the projects planned within the project area would increase the scale and mass of the built environment surrounding the proposed above ground station sites. Cumulative visual effects from development of projects planned within Milpitas and San Jose would not substantially alter an already highly developed visual environment. BART Silicon Valley, in combination with other projects in the area and region, would encourage more intense urban development around the station sites, which would cumulatively alter the existing visual environment. But, as documented previously in this section, these changes are consistent with the existing visual character and therefore not cumulatively significant.

4.20.3.17 Water Resources, Water Quality, and Floodplains

This section updates and completely replaces the cumulative water resources, water quality, and floodplain discussion in subsection 6.3.9 of the FEIR.

Water Quality

The related projects in the Phase 1 area would be subject to the federal, State, and local requirements related to surface water resources. National Pollutant Discharge Elimination System (NPDES) permits issued that authorize construction and/or operations will require implementation of short- and long-term best management practices to avoid or minimize any adverse effects on water quality due to stormwater runoff. Many projects would also be subject to MS4 permits and/or general waste discharge requirements.

The City of Fremont, County of Alameda, and Alameda County Flood Control and Water Conservation District participate in the Alameda Countywide Clean Water Program. This program includes a joint stormwater quality management plan as well as individual plans by participating jurisdictions to reduce stormwater pollution. Similarly, the Cities of Milpitas, San Jose, and Santa Clara; the County of Santa Clara; and the SCVWD participate in the Santa Clara Valley Urban Runoff Pollution Prevention Program. This program includes an urban runoff management plan to reduce stormwater pollution. Both the stormwater quality management plan and the urban runoff management plan serve as the basis of the NPDES permits issued to these programs. New and redevelopment projects are subject to requirements to ensure compliance with these permits. Cumulative impacts would therefore not be significant.

Floodplains

The related projects in the Phase 1 area would be subject to the regulatory requirements and agency criteria from the Federal Emergency Management Agency, Alameda County Flood Control and Water Conservation District, SCVWD, and municipal codes of local cities. To address known design flow constraints and flooding issues, projects are planned and/or programmed (funded) on several creeks within the Phase 1 areas, as well as upstream and downstream. Once completed, these projects would eliminate flooding in the areas of improvements. Cumulative flooding impacts would therefore not be significant.

Stormwater Runoff

Phase 1, the future extension to Santa Clara, and the related development projects would contribute to an increase in impervious surface that could increase the quantity and velocity of stormwater runoff and reduce groundwater recharge. However, all future and planned projects would be required to comply tieh the applicable county Flood Control District and State Water Resource Control Board C3 regulations. These regulations require the incorporation of post-construction stormwater controls that promote groundwater recharge and minimize the change in rate and flow of stormwater runoff. Each project would convey its stormwater runoff via different drainage systems, which would be required to have adequate capacity for any increased runoff. BART design criteria require that drainage systems that collect runoff be designed to convey the surface flow generated by a 10-year storm event or to the minimum requirements of the cities, whichever is greater. Therefore, implementation of Phase 1, the future extension to Santa Clara, and the related development projects would have a less-than-significant cumulative impact to groundwater recharge and stormwater runoff velocity and quantity.