

Chapter 7

Other NEPA and CEQA Considerations

This chapter includes the following discussions required by the National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA).

- Cumulative Impacts under NEPA and CEQA
- Growth-inducing impacts under NEPA and CEQA
- Irreversible and irretrievable commitments of resources under NEPA and CEQA
- Relationship between short-term uses and long-term productivity under NEPA
- Significant and unavoidable impacts under CEQA
- Environmentally superior alternative under CEQA

7.1 Cumulative Impacts under NEPA and CEQA

7.1.1 Regulatory Setting

The Council on Environmental Quality regulations for implementing NEPA define a “cumulative impact” as the “impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or persons undertakes such other actions” (40 Code of Federal Regulations [CFR] 1508.7).

CEQA defines cumulative impacts as “two or more individual effects which, when considered together, are considerable,” and suggests that cumulative impacts may “result from individually minor but collectively significant projects taking place over a period of time” (State CEQA Guidelines Section 15355). CEQA documents are required to include a discussion of potential cumulative effects when those effects would be significant, and the State CEQA Guidelines suggest two possible methods for assessing potential cumulative effects: (1) the “list” approach and (2) the “projection” approach (State CEQA Guidelines Section 15130).

7.1.2 Methodology

This SEIS/SEIR uses a hybrid approach, explained below, to assess cumulative impacts.

- *Projections*: This approach is used to disclose broad regional cumulative impacts related to regional air quality and greenhouse gas emissions, and transportation/traffic (for general growth driving traffic and transit use).

- *List Approach:* Specific projects in the area were examined for the potential to result in cumulatively significant localized impacts. This analysis considered transportation projects and planned land development projects in the area. The list approach was used for analyzing environmental impacts.

This hybrid approach examines whether resources may be cumulatively affected by considering the following factors.

- Whether the resource is especially vulnerable to incremental effects;
- Whether the proposed action is one of several similar actions in the same geographic area;
- Whether other activities in the area have similar effects on the resource;
- Whether these effects have been historically significant for this resource; and
- Whether other analyses in the area have identified a cumulative effects concern.

If the BART Extension Alternative (NEPA and CEQA alternative) or BART Extension with TOJD Alternative (CEQA only alternative) would result in no impact (direct or indirect) on a resource, it would not contribute to a cumulative impact on that resource.

Table 7-1 summarizes the methodology used for each resource issue as well as the geographic area of analysis. The geographic areas considered for cumulative impact analyses vary by individual resource. The alignment is defined as the 6-mile alignment from Alum Rock/28th Street Station to Santa Clara Station. The BART Extension vicinity is defined as a 2-mile buffer around the alignment.

Table 7-1: Summary of Cumulative Impact Methodology

Resource Issue	Cumulative Method	Geographic Area of Impact
Transportation/Traffic	List (Construction Analysis and Transportation Improvements) Projection (Operational Traffic)	Alignment, roadways crossing alignment (traffic level of service, bicycle and pedestrian facilities) San Francisco Peninsula (regional traffic, regional transit systems)
Air Quality	Projection (Criteria Pollutants) List (Toxic Air Contaminants)	Criteria pollutants: San Francisco Bay Area Air Basin Toxic air contaminants: alignment and immediate vicinity
Biological Resources	List	Alignment and vicinity
Community Facilities	List	Alignment and adjacent areas
Cultural Resources	List	Alignment and adjacent areas
EMI-EMF	List	Alignment and adjacent areas
Energy	List	Region
Environmental Justice	List	Alignment and adjacent areas
Geology, Soils, and Seismicity	List	Alignment and adjacent areas
GHG Emissions and Climate Change	Projection (GHG emissions)	The planet (GHG emissions)

Resource Issue	Cumulative Method	Geographic Area of Impact
Hazards and Hazardous Materials	List	Alignment and adjacent areas
Land Use and Planning	List	Alignment and adjacent areas
Noise and Vibration	List	Alignment and adjacent areas
Safety and Security	List	Santa Clara County
Socioeconomics	List	Alignment and adjacent areas
Utilities	List	Alignment and adjacent areas
Visual Quality and Aesthetics	List	Alignment and vicinity
Water Resources, Water Quality, and Floodplains	List	Alignment

7.1.2.1 Projects Considered

Reasonably foreseeable future projects are defined as the projects that have already been adopted or have otherwise demonstrated likelihood to occur based on documentation from project sponsors.

There are three types of cumulative projects considered: planned transportation projects, area plans, and planned land development projects. For land development along the alignment, reasonably foreseeable projects from San Jose and Santa Clara were added. Projects that have the likelihood of being constructed by 2025 Opening Year were also considered.

Table 7-2 and the descriptions in Section 7.1.3 present the related projects that are reasonably foreseeable and are included in this cumulative analysis. The project numbers in Table 7-2 and each heading within Section 7.1.3 correspond to the project numbers in Figure 7-1. Figure 7-1 shows the approximate location of each project with respect to the BART Extension. Project information listed below is based on information available in environmental documents and posted on local agency websites.

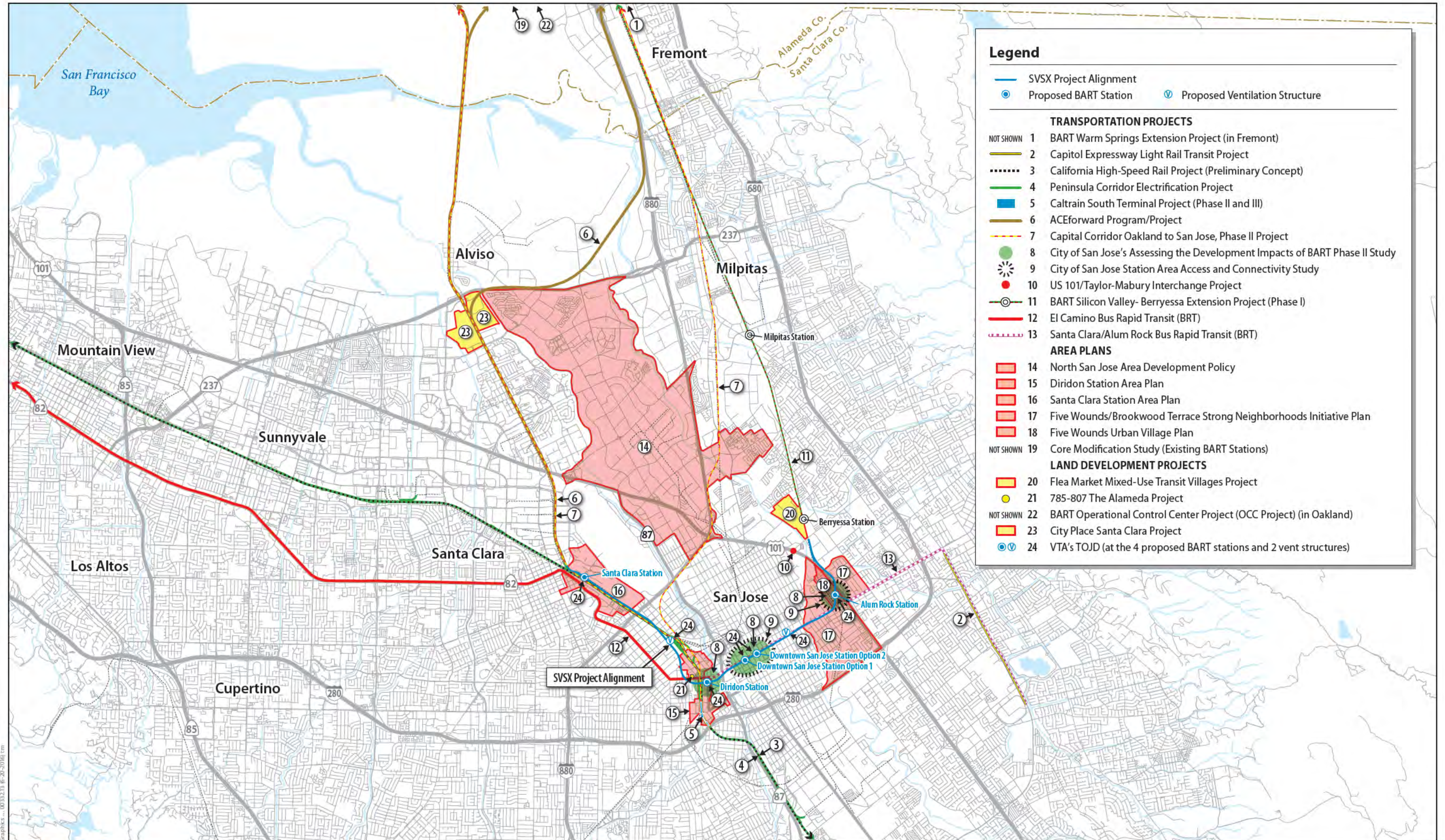
The analysis of cumulative impacts for the BART Extension also includes the reasonably foreseeable development of TOJD components.

7.1.3 Related Projects

Table 7-2 lists the related projects that are reasonably foreseeable and are included in this cumulative analysis. A description of each related project considered is provided below. The number in the project title indicates its location on Figure 7-1.

Table 7-2: List of Related Projects

Map ID Number	Name of Project
<i>Transportation Projects</i>	
1	BART Warm Springs Extension Project
2	Capitol Expressway Light Rail Transit Project
3	California High-Speed Rail Project
4	Peninsula Corridor Electrification Project
5	Caltrain South Terminal Project (Phases II and III)
6	ACEforward Program/Project
7	Capitol Corridor Oakland to San Jose, Phase II Project
8	City of San Jose's Assessing the Development Impacts of BART Phase II Study
9	City of San Jose Station Area Access and Connectivity Study
10	US 101/Taylor-Mabury Interchange Project
11	VTA's BART Silicon Valley Berryessa Extension Project (Phase I)
12	El Camino Real Bus Rapid Transit Project
13	Santa Clara/Alum Rock Bus Rapid Transit Project
<i>Area Plans/Study</i>	
14	City of San Jose, North San Jose Area Development Policy
15	Diridon Station Area Plan
16	Santa Clara Station Area Plan
17	Five Wounds/Brookwood Terrace Strong Neighborhoods Initiative Plan
18	Five Wounds Urban Village Plan
19	Core Modification Study
<i>Land Development Projects</i>	
20	Flea Market Mixed-Use Transit Villages Project
21	785-807 The Alameda Project
22	BART Operational Control Center Project (OCC Project)
23	City Place Santa Clara Project
24 ^a	VTA's TOJD
^a The analysis of cumulative impacts for the BART Extension under NEPA also includes the reasonably foreseeable development of the TOJD components.	



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Figure 7-1
Cumulative Projects
 VTA's BART Silicon Valley-Phase II Extension Project

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7.1.3.1 Transportation Projects

BART Warm Springs Extension Project (#1)

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 EIS for the Warm Springs Extension Project in July 2006, followed by a Record of Decision on October 24, 2006 (BART 2015). The project is currently under construction, and BART expects to begin service to Warm Springs in late 2016.

Capitol Expressway Light Rail Transit Project (#2)

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/28th Street Station to the Eastridge Transit Center in its first phase, and to Nieman Boulevard in a future phase. On August 2, 2007, the VTA Board of Directors certified the Final Supplemental EIR and approved the amended project description. Phase 1A constructed pedestrian improvements and was completed in fall 2012. Phase 1B reconfigured and constructed the Eastridge Transit Center and was completed in spring 2015. Phase 2 will extend light rail from the existing Alum Rock/28th Street Station to the Eastridge Transit Center. However, construction of Phase 2 is contingent upon future funding (Santa Clara Valley Transportation Authority 2015a). This project is a programmed improvement within the *Valley Transportation Plan 2035*.

California High-Speed Rail Project (#3)

The California High-Speed Rail Project, a proposed statewide high-speed train with an approximately 800-mile system, would provide service to northern California's major transit, business, and tourism centers in downtown San Jose and San Francisco. The California High-Speed Rail Authority (CHSRA) completed a program-level EIR/EIS for the Bay Area to Central Valley section of the project in 2008 and a partially revised EIR in 2012 (California High-Speed Rail Authority and Federal Railroad Administration 2008, 2012a). CHSRA certified a Final EIR/EIS for the Merced to Fresno section of the project in 2012 (California High-Speed Rail Authority and Federal Railroad Administration 2012b) and a Final EIR/EIS for the Fresno to Bakersfield section of the project in 2014 (California High-Speed Rail Authority and Federal Railroad Administration 2014). CHSRA requested environmental and engineering services for the San Francisco to San Jose and San Jose to Merced sections in August 2015. For each section, a Draft EIR/EIS is scheduled for circulation in winter 2016 and a record of decision is scheduled for the end of 2017 (California High-Speed Rail Authority 2015). VTA will continue to meet and coordinate with CHSRA regarding future plans. VTA staff currently attends two quarterly technical working group meetings with

Caltrain, CHSRA, and city staff. One working group covers the San Jose to San Francisco region, and the second working group covers the San Jose to Merced region.

Peninsula Corridor Electrification Project (#4)

In 2013, the Peninsula Corridor Joint Powers Board (Caltrain) and CHSRA signed a Memorandum of Understanding to advance a blended system concept whereby both Caltrain and high-speed rail would utilize the existing Caltrain Peninsula Corridor. The Memorandum of Understanding identified corridor electrification as one of the improvements to modernize operation of the Caltrain rail corridor between San Jose and San Francisco and provide for operation of up to six Caltrain trains per peak hour per direction (an increase from five trains per peak hour per direction at present). The project consists of converting Caltrain from diesel-hauled to Electric Multiple Unit trains for service between the 4th and King Street Station in San Francisco and the Tamien Station in San Jose. Caltrain certified the Final EIR on January 8, 2015. Electrification of the rail line is part of the Caltrain Modernization Program, which is scheduled to be operational by 2020 (Caltrain 2015).

Caltrain South Terminal Project (Phases II and III) (#5)

The Caltrain South Terminal Phase II Project would add a fourth main track of approximately 2,000 feet in length from Caltrain's Centralized Equipment Maintenance and Operations Facility to the north end of Diridon Station, just north of Santa Clara Street. The project would modify the existing tracks to accommodate the proposed fourth main track and upgrade associated signal via new overhead signal bridges. The project would require a small expansion of the Caltrain right-of-way to accommodate for the new main track and upgrades, resulting in the acquisition of 84 parking spaces from the SAP Center parking lot. Caltrain proposes to restripe the parking lot to minimize any loss of parking spaces. The South Terminal Phase III project would improve the reliability of the Diridon Station–Tamien Station segment and would allow greater flexibility at Diridon Station by enabling out-and-back movements of empty trains to switch tracks without competing with revenue trains at Control Point Alameda (north of the station) or south of the station (Caltrain 2013).

***ACEforward* Program/Project (#6)**

The *ACEforward* Program/Project is a phased improvement plan to reduce travel time, improve service reliability and passenger facilities along the existing Stockton to San Jose Altamont Corridor Express (ACE) rail corridor, and to extend new ACE rail service to Modesto and Merced. This program/project would provide the foundation for the long-term vision of the San Joaquin Regional Rail Commission intercity passenger rail services. The program/project would improve the existing ACE rail service managed by the San Joaquin Regional Rail Commission by delivering safety and operational improvements that enable the expansion of service to six daily roundtrips between Stockton and San Jose, and by extending ACE rail service to Modesto as early as 2018. Following that, the program/project would extend ACE rail service to Merced from Modesto, and the service frequency from

Stockton to San Jose would increase to as many as 10 or more daily roundtrips, as soon as 2022 (Altamont Corridor Express n.d.).

Capitol Corridor Oakland to San Jose, Phase II Project (#7)

Phase II of the Capitol Corridor Oakland to San Jose service expansion would build incrementally on the first phase, growing from 7 to 11 daily round trips. This expansion will require rail-infrastructure improvements in this section of the corridor, to both preserve existing and enable future growth patterns for both freight and passenger services. The Capitol Corridor Joint Powers Authority will continue to work with the host railroads (UPRR and Caltrain) to implement the particular blend of track infrastructure projects that will provide the appropriate track-capacity enhancements. According to the Capitol Corridor Joint Powers Authority's 2014 Vision Plan Update Final Report, full funding has not been secured (Capitol Corridor JPA 2014). According to the Capitol Corridor Joint Powers Authority's 2014 Vision Plan Update Final Report, the ultimate vision is to grow service to 16 daily round trips along this segment.

City of San Jose's Assessing the Development Impacts of BART Phase II Study (#8)

The City of San Jose in partnership with VTA and SPUR will be leading a study during the BART Extension environmental process to complete an analysis of the potential development opportunities and impacts around the three BART stations in San Jose—Alum Rock/28th Street, Downtown San Jose, and Diridon—with the goal of maximizing community and economic development, connectivity, and placemaking. This additional analysis is intended to help inform future decision-making. This study is anticipated to be completed in 2016 (City of San Jose 2015c).

City of San Jose Station Area Access and Connectivity Study (#9)

In the summer of 2015, the City of San Jose completed a study to evaluate and develop recommendations to maximize access to the future Downtown San Jose and Alum Rock/28th Street BART Stations. The study involved a series of charrettes and walking tours with VTA and other community leaders to develop ideas on how to make great places around these stations and facilitate access from various transportation modes. The study results are intended to help develop recommendations for ways to maximize potential ridership; effectively connect to transit, shuttles, and other feeder services; facilitate active transportation and shared mobility; enhance the quality of street life; and encourage foot traffic and business vitality around the stations. The study will also allow the City of San Jose to develop a list of projects that will be prioritized. Funding will be identified to optimize connections to the stations prior to opening of the BART Extension.

US 101/Taylor-Mabury Interchange Project (#10)

The City of San Jose is working in partnership with the California Department of Transportation to develop the 101 Implementation Plan, a conceptual planning and

engineering study for the segment of U.S. 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. The project is in its early stages of development (City of San Jose 2013).

VTA's BART Silicon Valley Berryessa Extension Project (Phase I) (#11)

VTA's BART Silicon Valley Program is a 16-mile, six-station extension of the San Francisco BART system beginning at the future Warm Springs Station in Fremont and extending south into Santa Clara County, with six stations in Milpitas, San Jose, and Santa Clara. VTA's BART Silicon Valley Berryessa Extension Project is Phase I of the Program. Phase I is defined as the northernmost 10-mile, two-station Berryessa Extension from Fremont, through Milpitas, into the Berryessa district of north San Jose. Phase I of the Program includes two stations beginning from the BART Warm Springs Station in Fremont: Milpitas Station and Berryessa Station. The Milpitas BART Station is between Montague Expressway and Capitol Avenue in the City of Milpitas and the Berryessa BART Station is between Berryessa Road and Mabury Road in the City of San Jose. A joint EIR/EIS was prepared for the Program in 2004, with two supplemental EIRs and five addendums to the supplemental EIRs prepared between 2007 and 2014. The Phase I project is currently under construction and scheduled to be operational in late 2017 (Santa Clara Valley Transportation Authority 2015b).

El Camino Real Bus Rapid Transit Project (#12)

VTA is proposing to provide bus rapid transit (BRT) improvements along 17.4 miles of El Camino Real from San Jose to Palo Alto. BRT is defined as a high-quality, high-speed form of bus transit that provides services and amenities similar to light rail but at a much lower cost. The project would support the development of a balanced multi-modal corridor consistent with local and regional planning. The project would include mixed-flow lanes (lanes for all vehicular travel) and could include BRT-dedicated lanes (lanes for exclusive use of BRT and emergency vehicles). The project would accommodate buses that would allow boarding level with the curb, pedestrian and bicycle enhancements, augmented landscaping, street lighting, and intersection improvements. The project would also enhance the existing traffic signal system, giving buses priority at signals over general vehicular traffic. The comment period for the Draft Environmental Assessment/EIR closed in January 2015 and VTA is working on the Final Environmental Assessment/EIR. Construction is anticipated to begin in 2018 (Santa Clara Valley Transportation Authority 2015c).

Santa Clara/Alum Rock Bus Rapid Transit Project (#13)

The Santa Clara/Alum Rock BRT Project will provide just over 7 miles of limited-stop rapid transit service at 11 new stations from the Eastridge Transit Center to the Arena Station in downtown San Jose using Capitol Expressway, Alum Rock Avenue, and Santa Clara Street. The Santa Clara/Alum Rock BRT Project is the first of three lines, followed by the El Camino Real BRT and Stevens Creek BRT. The Final EIR was approved by VTA on

December 11, 2008 and the project is currently under construction and scheduled for completion in 2017 (Santa Clara Valley Transportation Authority 2015d).

7.1.3.2 Area Plans/Studies

City of San Jose, North San Jose Area Development Policy (#14)

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 balance employment, housing, and roadway/transit systems in the Golden Triangle Area, which includes San Jose, generally north of Interstate (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 June 21, 2005 which included a phased mitigation plan to address significant environmental impacts identified in the policy EIR. The policy was then revised on January 31, 2012 and November 18, 2014. 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 affected area
- A housing strategy to internalize commute trips within the Golden Triangle Area

The full amendment of the policy and the associated EIR are anticipated for Council consideration in 2017 (City of San Jose 2015a).

Diridon Station Area Plan (#15)

In 2008, the City of San Jose was selected by the Metropolitan Transportation Commission (MTC) to develop a Station Area Plan around the Diridon Station transit center. The City and VTA worked together to propose ideas for 30 years into the future for the Diridon Station

area, including the SAP Center. The primary goals of the plan include promoting urban form and structure, establishing connectivity, prioritizing pedestrian circulation and transit, ensuring compatibility with the surrounding neighborhoods, providing a range of land uses, enhancing and expanding recreational opportunities, establishing open space, integrating art, and providing parking for easy walking access (City of San Jose 2014). The City Council approved the plan and certified the EIR in June 2014. The Diridon Station Area Plan included a new BART station at Diridon in its analysis.

Santa Clara Station Area Plan (#16)

The Santa Clara Station Area Plan was adopted in 2010 and includes 432 acres of land surrounding the existing Santa Clara Transit Center and future Santa Clara BART Station. The plan is a result of a partnership between the Cities of San Jose and Santa Clara, and with VTA. The plan outlines an implementation strategy and provides guidance for land use, urban design, open space, streets, and other improvements in the area through 2030 (Santa Clara Valley Transportation Authority 2010). The plan includes a potential new undercrossing linking El Camino Real with Coleman Avenue. VTA plans to construct the undercrossing with an opening in mid-2017.

Five Wounds/Brookwood Terrace Strong Neighborhoods Initiative Plan (#17)

The City of San Jose City Council adopted the Five Wounds/Brookwood Terrace Strong Neighborhoods Initiative Plan in 2002. The plan encourages the revitalization of existing residential and commercial uses with programs to upgrade properties, promote infill development, and make pedestrian-oriented street improvements. The plan also includes the reuse of underutilized land—including the conversion of an abandoned railroad right-of-way into a trail and affordable housing opportunity (City of San Jose 2002). As part of the City's *Envision San Jose 2040* General Plan, the City of San Jose divided the Five Wounds/Brookwood Terrace Strong Neighborhoods Initiative Plan into four separate village plans: Five Wounds, Little Portugal, 24th and William, and Roosevelt Park (City of San Jose 2011). The Alum Rock/28th Street BART Station would be within this plan area and was considered in this plan and the village plan.

Five Wounds Urban Village Plan (#18)

The Five Wounds Urban Village Plan is part of the first group of Urban Village Plans prepared by the City of San Jose and the community to further the Urban Village Strategy of the City's *Envision San Jose 2040* General Plan (City of San Jose 2011). Because this plan was approved by the City Council as a policy document for the future growth of the Five Wounds Urban Village, it establishes a framework for the transition of the Five Wounds Urban Village into a vibrant mixed-use and pedestrian-oriented district. The San Jose City Council approved the plan on November 19, 2013 (City of San Jose 2013). The Alum Rock/28th Street BART Station would be within this plan area and was considered in this plan.

Core Modification Study (#19)

In 2013, VTA and BART completed an update to a previously completed Core Modification Studies (CMS) to assist both organizations in evaluating the impact of the proposed BART Silicon Valley Extension 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 summarize improvements to meet both the additional boarding activity at core stations and the additional line loading throughout the system, which may impact core stations and systems during certain operating conditions.

The CMS looked at conditions on the system as projected in 2030 based on projected BART Silicon Valley ridership. Along with the addition of riders generated by BART Silicon Valley, BART ridership is expected to grow substantially during the same period. Analysis of station impacts differentiated between the need to improve stations to meet a growing BART core system, and the additional impacts of growth generated by BART Silicon Valley Program.

BART's adopted System Expansion Policy, which is used to evaluate transit expansion proposals, also addresses the issue of increased parking in the context of increasing alternatives to driving to stations. While BART may add parking at stations as system improvements are implemented, ongoing station area planning programs undertaken by BART and by local communities are evaluating alternative opportunities for patrons to access BART stations and reduce drive-alone parking. Alternatives may include improvements to station access encouraging carpool, transit, bicycle, and pedestrian access.

BART will develop a capital improvement program of projects related to BART Core improvements. VTA will review BART's capital improvement program of projects and the schedule for the implementation of the improvements. As projects are mutually approved, VTA will provide a fair-share contribution for implementation.

7.1.3.3 Land Development Projects

Flea Market Mixed-Use Transit Villages Project (#20)

In March 2007, the City of San Jose approved a general plan amendment and planned development rezoning for the Flea Market Mixed-Use Transit Villages Project. The 120-acre Flea Market project site consists of eight parcels located on both sides of Berryessa Road. According to the December 2006 Draft EIR for the Flea Market, the project would allow up to 215,622 square feet of industrial and/or commercial building space on the north side of Berryessa Road, up to 152,700 square feet of commercial space on the south side of Berryessa Road, and a total of 2,818 dwelling units. 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. As of October 2015, Phase I of this development, which includes 242 residential units, is under construction, and Phases II and III that include construction of additional residential units were not yet under construction (City of San Jose 2006).

785-807 The Alameda Project (#21)

On August 20, 2013, the City of San Jose adopted an Initial Study/Mitigated Negative Declaration for 785-807 The Alameda, which included two residential development options. Option 1 included a five-story building with between 31 and 98 residential units and a minimum of 7,395 square feet of commercial space. Option 2 included a five-story building with up to 70 residential units and a minimum of 22,651 square feet of commercial space. Option 2 was approved by the City of San Jose upon adoption of the Initial Study/Mitigated Negative Declaration in August 2013. In September 2014, an addendum was approved for a third option, which included 140 attached residential units and a minimum of 22,866 square feet of commercial space. In June 2015, a second addendum for a fourth option was approved that proposed 168 attached residential units and 22,660 square feet of commercial uses. Project construction began in spring 2015 (City of San Jose 2015b).

BART Operational Control Center Project (OCC Project) (#22)

BART currently runs an Operational Control Center (OCC) in the City of Oakland to provide real-time supervisory monitoring and control capability of the entire BART system. 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 practical 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. To provide the OCC capacity needed for the planned system expansions, including the BART Extension, it has been concluded that it is in both BART's and VTA's best interests to invest in a new facility for the expansion and modernization of the OCC project. BART is leading the effort for this project and will be preparing environmental clearance documentation. BART has commenced preliminary design of the OCC project. Based on information currently available, BART estimates that it will complete environmental clearance in 2017, construction in 2020, and systems integration and testing in early 2021 (BART and PGH Wong Engineering, Inc. 2013).

City Place Santa Clara Project (#23)

The City Place Santa Clara Project is approximately 240 acres, generally north of Tasman Drive, east of Great America Parkway and San Tomas Aquino Creek, west of the Guadalupe River, and south of Great America Way and State Route (SR) 237. The project is a

multi-phased, mixed-use development that would include 9.16 million gross square feet of office buildings, retail and entertainment facilities, residential units, and hotel rooms, and surface and structured parking facilities. In addition, the project would include large shared open spaces throughout the project site, new pedestrian and vehicular entrances and roadway networks, upgraded and expanded infrastructure, and new utilities with improvements to offsite connections. The project's Draft EIR was circulated in October 2015. Project construction is anticipated to begin in late 2016 (City of Santa Clara 2015).

VTA's Transit-Oriented Joint Development (TOJD) (#24)

As part of a CEQA Build Alternative only, VTA proposes to construct TOJD (office, retail, and residential land uses) at the four BART stations (Alum Rock/28th Street, Downtown San Jose, Diridon, and Santa Clara) to promote transit ridership. VTA is also proposing to construct TOJD at two mid-tunnel ventilation structure locations (the northwest corner of Santa Clara Street and 13th Street and east of Stockton Avenue south of Taylor Street).

In October, 2016, VTA was awarded a \$1.52 million Fiscal Year 2016 Pilot Program for Transit-Oriented Development (TOD) Planning grant for the Phase II Project. The Pilot Program supports comprehensive planning efforts of local communities. Under the Pilot Program requirements, agencies and local communities who receive funds through this planning program must examine ways to improve economic development and ridership, foster multimodal connectivity and accessibility, improve transit access, identify infrastructure needs, and enable mixed-use development near transit stations. The Pilot Program for TOD Planning funds will be used to support a study on concepts and future opportunities for transit-oriented development along the alignment. After the VTA Board of Directors' defines the scope of work and approves the selection of a consultant, the study will take approximately a year to complete.

This related project is taken into consideration in the cumulative analysis for the BART Extension Alternative under NEPA.

7.1.4 Cumulative Environmental Impacts

The following discussion presents the cumulative impacts of the BART Extension Alternative under NEPA and CEQA and the BART Extension with TOJD Alternative under CEQA. Analysis for each topic area is provided in Chapters 4 and 6. For NEPA-only topics (i.e., EMF, Security and System Safety, and Socioeconomics and Environmental Justice), the analysis below is only for the BART Extension Alternative.

The No Build Alternative as described in Chapter 2, Section 2.2.1, would not involve any construction associated with the BART Extension Alternative under NEPA and CEQA and the BART Extension with TOJD Alternative under CEQA. Under the No Build Alternative, it is likely that cumulative projects would result in environmental impacts for various topical areas such as traffic, air quality, and noise. The individual environmental documents that are prepared for each of these cumulative projects would address the cumulative impacts in

compliance with NEPA and CEQA requirements. However, the transit benefit provided by the BART Extension Alternative would not occur under the No Build Alternative.

7.1.4.1 Transportation

BART Extension Alternative

Refer to Section 3.5.2, *BART Extension Alternative*, in Chapter 3, *NEPA and CEQA Transportation Operation Analysis*, for a description of cumulative impacts related to transportation operations under NEPA for this alternative.

Refer to Section 6.2.4.2, *BART Extension Alternative*, in Chapter 6, Section 6.2, *Transportation*, for a description of cumulative impacts related to transportation under CEQA for this alternative.

BART Extension with TOJD Alternative

Refer to Chapter 3, Section 3.5.3, *BART Extension with TOJD Alternative*, and Section 6.2.4.3, *BART Extension with TOJD Alternative*, in Chapter 6, Section 6.2, *Transportation*, for a description of cumulative impacts related to transportation under CEQA for this alternative.

7.1.4.2 Air Quality

The geographic context for the cumulative analysis of air quality impacts is the San Francisco Bay Area Air Basin (SFBAAB), which is within the jurisdiction of the Bay Area Air Quality Management District (BAAQMD). According to the BAAQMD Guidelines, any project that would individually have a significant air quality impact would also have a cumulatively considerable air quality impact.

BART Extension Alternative

Construction

The construction of the BART Extension Alternative would result in air quality impacts from the use of heavy-duty construction equipment and haul trucks as well as vehicle trips generated by construction workers while traveling to and from the various construction sites along the alignment. In addition, nitrogen oxide (NO_x) emissions would result primarily from the use of construction equipment and haul trucks. The TOJD and other related projects include transportation, area, and land use plan projects that could also result in significant air quality impacts during the construction of their project features. The BART Extension Alternative, in combination with other foreseeable projects in the surrounding area, could have an adverse cumulative effect or significant cumulative impact on air quality during the construction period.

Construction of this alternative would be required to incorporate Mitigation Measures AQ-CNST-A through AQ-CNST-H to control fugitive dust and reduce NO_x emissions

during the construction period (see Chapter 5, Section 5.5.3, *Air Quality*). However, even with the incorporation of these measures, air quality impacts (NO_x emissions only) from the construction of this alternative would remain significant and unavoidable. Therefore, during construction, this alternative would result in cumulatively adverse effects on air quality under NEPA and would result in a considerable contribution to a cumulative impact under CEQA.

Operation

As described in Impact BART Extension AQ-2, operation of the BART Extension Alternative would increase ridership, thereby decreasing regional vehicle miles traveled (VMT) through mode shift from private automobiles to transit. Compared to the No Build Alternative, the BART Extension Alternative would result in a small decrease in regional VMT and operational emissions due to changes in VMT and vehicle speeds from the use of public transportation. As shown in Table 4.2-4, the alternative would not exceed the maximum daily operational emissions for any criteria pollutants or ozone precursors, including reactive organic gases (ROGs), NO_x, carbon monoxide (CO), particulate matter 10 microns or less in diameter (PM₁₀), and particulate matter 2.5 microns or less in diameter (PM_{2.5}). Overall, during operation, the BART Extension Alternative would result in a regional air quality benefit due to the net benefit of decreasing regional VMT through mode shift, and the alternative would not result in a cumulatively adverse effect on air quality under NEPA and would not result in a considerable contribution to a cumulative impact under CEQA.

BART Extension with TOJD Alternative

Construction

The construction of the BART Extension with TOJD Alternative would result in air quality impacts from the use of heavy-duty construction equipment and haul trucks as well as vehicle trips generated by construction workers while traveling to and from the various construction sites along the alignment. In addition, NO_x emissions would result primarily from the use of construction equipment and haul trucks, and ROG emissions would result primarily from the use of architectural coatings with a low volatile organic compound content. The other related projects include transportation, area, and land use plan projects that could also result in significant air quality impacts during the construction of their project features. The BART Extension with TOJD Alternative, in combination with other foreseeable projects in the surrounding area, could have an adverse cumulative effect or significant cumulative impact on air quality during the construction period.

Construction of this alternative would be required to incorporate Mitigation Measures AQ-CNST-A through AQ-CNST-I to control fugitive dust, reduce NO_x emissions, and reduce ROG emissions during the construction period. However, even with the incorporation of these measures, air quality impacts (NO_x and ROG emissions only) from the construction of this alternative would remain significant and unavoidable. Therefore, during construction,

this alternative would result in cumulatively adverse effects on air quality under NEPA and would result in a considerable contribution to a cumulative impact under CEQA.

Operation

As described in Impact BART Extension + TOJD AQ-2 in Chapter 6, operation of the BART Extension with TOJD Alternative would decrease regional VMT through mode shift from private automobiles to transit. However, the TOJD component of this alternative—although consistent with regional air quality plans and local (e.g., Santa Clara and San Jose) general plans, which seek to locate infill residential and office development near transit—would exceed the net daily operational emissions for ROG (see Tables 6.3-8 and 6.3-9). When combined with emissions from the new residences within the TOJDs, ROG emissions from the use of consumer products would exceed the BAAQMD significance thresholds. Therefore, during operation, the BART Extension with TOJD Alternative would result in a cumulatively adverse effect on air quality under NEPA and would result in a considerable contribution to a cumulative impact under CEQA.

7.1.4.3 Biological Resources

The geographic context for the cumulative analysis of biological resources impacts includes the areas within the San Francisco Bay.

BART Extension Alternative

Construction

The construction of the BART Extension Alternative would result in biological resources impacts from the use of heavy-duty construction equipment. In particular, construction of the alternative has the potential to affect special-status species (including nesting birds, roosting bats, burrowing owls, and tricolored blackbird) and sensitive natural communities (riparian habitat), and to interfere with wildlife movement through the removal of trees. Other related projects include transportation, area, and land use plan projects that could be located near biological resources and could also result in biological impacts during the construction of their project features. The BART Extension Alternative, in combination with other foreseeable projects in the surrounding area, could have an adverse cumulative effect or significant cumulative impact on biological resources during the construction period.

Construction of this alternative would be required to implement Mitigation Measures BIO-CNST-A through BIO-CNST-H (see Chapter 5, Section 5.5.4, *Biological Resources and Wetlands*) to avoid construction activities during the nesting bird season, conduct preconstruction surveys for special-status species, avoid riparian habitat, and replace trees removed during construction. With the incorporation of these measures, biological resources impacts from this alternative would not be adverse (NEPA) and would be reduced to a less-than-significant level (CEQA). Therefore, during construction, this alternative would not result in cumulatively adverse effects on biological resources under NEPA and would not result in a considerable contribution to a cumulative impact under CEQA.

Operation

As described in Chapter 4, Section 4.3, *Biological Resources and Wetlands*, and Chapter 6, Section 6.4, *Biological Resources and Wetlands*, operation of the BART Extension Alternative is expected to have minimal impacts on special-status species and other biological resources because the majority of the alignment would be in a tunnel or in highly urbanized and disturbed areas. Impacts would be similar to the No Build Alternative. Nesting birds may be temporarily disturbed during maintenance activities; however, because all the facilities would be in highly urbanized areas that lack vegetation suitable for nesting, birds would not likely use these areas for nesting or would have already adapted to the high levels of disturbance characteristic of urbanized areas. Therefore, during operation, this alternative would not result in cumulatively adverse effects on biological resources under NEPA and would not result in a considerable contribution to a cumulative impact under CEQA.

BART Extension with TOJD Alternative

The construction and operational cumulative analysis for the BART Extension with TOJD Alternative is similar to that described above for the BART Extension Alternative. With adherence to project-specific mitigation, this alternative would not result in cumulatively adverse effects on these resources under NEPA and would not result in a considerable contribution to a cumulative impact under CEQA.

7.1.4.4 Community Services and Facilities

Increased Demand for Community Services and Facilities

The geographic context for the cumulative analysis of community services and facilities impacts includes all schools; civic, community, and cultural facilities; and libraries, parks, recreation facilities, and religious facilities in the BART Extension area.

BART Extension Alternative

Construction

During construction of the BART Extension Alternative, it is not expected that construction workers would permanently move to the area. Therefore, during the construction period, the BART Extension Alternative would not result in a substantial demand for community services and facilities or require construction of new facilities. Similarly, construction activity related to TOJD and the other related projects would also not result in substantial long-term demand for community services and facilities or require construction of new facilities. Therefore, the cumulative impact would not be considerable, and the construction of the BART Extension Alternative would not contribute to an adverse or significant cumulative impact under NEPA or CEQA.

Operation

The operation of the BART Extension Alternative is not expected to introduce new permanent populations to the area except for employees at the Newhall Maintenance Facility. Compared to the No Build Alternative, the impacts on community services and facilities would be similar except that the community would not have the added transit benefit of expanded BART service. Therefore, there would not be a substantial increased demand for community services and facilities. The BART Extension Alternative would result in increased pedestrian traffic and activity for many community facilities and public services near the BART stations; however, the BART Extension Alternative would not result in a significant impact on the demand for these services and facilities or require construction of new facilities. The operation of the BART Extension Alternative in combination with TOJD and the related projects could, however, generate an increased demand for these community services. Specifically, the residential development envisioned as part of the City Place Santa Clara Project (1,360 housing units) and Flea Market Mixed-Use Transit Village (2,818 housing units) would introduce new permanent populations to the area, with a resultant increase in demand for community services. These projects will be required to provide mitigation and payment of development fees 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 associated with these projects would be accommodated through measures developed during the review and approval process, the cumulative impact would not be considerable, and the BART Extension Alternative would not contribute to an adverse or significant cumulative impact under NEPA or CEQA.

BART Extension with TOJD Alternative

Construction

During construction, the BART Extension with TOJD Alternative would similarly not introduce a substantial permanent new population to the area, nor would it generate a substantial increased demand for community services and facilities. The construction of the related projects also would not introduce a new permanent population or substantially increase demand for services. Therefore, the construction of the BART Extension with TOJD Alternative would not contribute to an adverse or significant cumulative impact under NEPA or CEQA.

Operation

The BART Extension with TOJD Alternative would introduce new permanent populations to the Cities of San Jose and Santa Clara, which could generate an increased demand for community services and facilities. In addition, the BART Extension with TOJD Alternative would result in increased pedestrian traffic and activity for many community facilities and

public services near the BART stations. However, the increase in population from the BART Extension with TOJD Alternative is predicted, and consistent with the city general plans. Additionally, the BART Extension with TOJD Alternative would not result in a significant impact on the demand for these services and facilities or require construction of new facilities. Therefore, the operation of the BART Extension with TOJD Alternative would not contribute to an adverse or significant cumulative impact under NEPA or CEQA.

Changes in Police and Fire Service Ratios

The geographic context for the cumulative analysis of police and fire protection service impacts includes any proposed development within the police and fire department service districts that, in combination with the BART Extension, may generate a need for new facilities.

BART Extension Alternative

Construction and Operation

Police and fire departments in San Jose and Santa Clara would provide emergency services to development within their jurisdictions and to the BART Extension Alternative through mutual aid agreements. The projected new development in the area and associated increase in housing units would generate an increased demand for emergency services. The TOJD and related projects would be required to ensure the maintenance of acceptable police and fire service ratios as part of the review and approval process, which could include the payment of impact fees. The adherence to police and fire service ratios would ensure that the BART Extension Alternative's contribution would not be considerable; therefore, this would not be an adverse or significant cumulative impact under NEPA or CEQA.

Operation of the BART Extension Alternative would not place significant additional demands upon existing police services and facilities within the area. BART provides its own police officers to address issues at station platforms and BART facilities. BART would also expand existing mutual aid agreements with the Cities of San Jose and Santa Clara to ensure appropriate coordination and training to address the requirements of the BART Extension Alternative. 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 Police Department substation is under construction at the Berryessa Station as part of Phase I. 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 the BART Extension Alternative. In addition, VTA contracts with the Santa Clara County Sheriff's Department to patrol and respond to issues at VTA facilities including the BART station campuses and parking lots. Because BART and VTA would provide police services for the BART Extension Alternative and expand mutual aid

agreements, and because Phase I includes a BART Police Department substation at the Berryessa Station, the BART Extension Alternative would not contribute to an adverse or significant cumulative impact under NEPA or CEQA.

BART Extension with TOJD Alternative

Construction and Operation

VTA's BART Silicon Valley Program would provide BART, VTA, and Santa Clara County Sheriff Department police services, expand mutual aid agreements, and include a BART Transit Police Station at the Berryessa Station along with additional facilities for Phase II. With these additional services and facilities, the capacity to provide adequate police and fire services would be improved.

The operation of the BART Extension with TOJD Alternative would introduce new permanent populations to the area, which could generate an increased demand for emergency services. However, similar to the other related projects, TOJD would be required to ensure the maintenance of acceptable police and fire service ratios as part of the review and approval process, which could include the payment of impact fees. Therefore, with the payment of impact fees, the BART Extension with TOJD Alternative's contribution to cumulative police and fire services impacts would not contribute to an adverse or significant cumulative impact under NEPA or CEQA.

7.1.4.5 Cultural and Historic Resources

BART Extension Alternative

The geographic context for the cumulative analysis of impacts on cultural resources includes the Areas of Potential Effect identified for historic properties and archaeological resources. As described in Chapter 4, Section 4.5, *Cultural Resources*, and Chapter 6, Section 6.6, *Cultural Resources*, there is one known archaeological resource within the Area of Potential Effect (APE); there are multiple locations within the APE where historic structures once stood that have the potential to be historic archaeological properties. There are also zones within the alignment, especially pre-historic stream channels and drainages, where the potential existence of undiscovered archaeological resources is moderate to high. However, the BART Extension Alternative would result in no adverse effect (NEPA) and less-than-significant impacts (CEQA) on built environment historic properties and no adverse effect (NEPA) and less-than-significant impacts (CEQA) with mitigation (Mitigation Measure CUL-CNST-A) on archaeological resources and human remains with the implementation of the Programmatic Agreement and Archaeological Resources Treatment Plan.

Archaeological and historic properties could be affected by the related approved projects provided in Table 7-2. Implementing the BART Extension Alternative in combination with the related cumulative projects could result in the potential discovery of and cumulative effects on archaeological and historic resources.

These impacts would, however, be offset by compliance with federal and state cultural resource protection requirements and project-specific mitigation. 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 in the event of discovery. All applicable general plans contain policies geared toward the ongoing preservation of these resources. The CEQA and/or NEPA review processes associated with the development projects also provide protections for cultural resources. For the BART Extension Alternative, specific mitigations include implementing the Programmatic Agreement and Archaeological Resources Treatment Plan. With implementation of the Programmatic Agreement and Archaeological Resources Treatment Plan, the alternative would not result in cumulatively adverse effects on these resources under NEPA and would not result in a considerable contribution to a cumulative impact under CEQA.

BART Extension with TOJD Alternative

The cumulative analysis for the BART Extension with TOJD Alternative is similar to that described above for the BART Extension Alternative. With adherence to federal and state cultural resource protection requirements and project-specific mitigation, this alternative would not result in cumulatively adverse effects on these resources under NEPA and would not result in a considerable contribution to a cumulative impact under CEQA.

7.1.4.6 Electromagnetic Fields

The geographic context for the cumulative analysis of electromagnetic field (EMFs) impacts includes the areas adjacent to where identified related projects that would also have EMF impacts are located. Therefore, the geographic context for cumulative EMF impacts includes the alignment and adjacent vicinity, as well as the areas where the following related projects would occur: California High-Speed Rail (HSR) Project, Peninsula Corridor Electrification Project, Capitol Expressway Light Rail Transit Project, Caltrain South Terminal Project, and VTA's BART Silicon Valley Berryessa Extension Project (Phase I).

BART Extension Alternative

Construction

There would be no EMF-related effects associated with the BART Extension Alternative during construction. Construction activities typically would not involve the use of major electrical equipment or systems in the vicinity of EMF- or electromagnetic interference (EMI)-sensitive land uses. Therefore, the construction of the BART Extension Alternative, in combination with related projects, would not contribute to an adverse or significant cumulative impact under NEPA or CEQA.

Operation

EMFs generated by the BART Extension Alternative, considered individually, outside the VTA right-of-way would be minor in comparison with background EMF and threshold

levels. The intensity of these fields would dissipate as a function of distance and would be substantially lower at nearby sensitive receptors where sensitive equipment may be located. There are no medical facilities with magnetic resonance imaging near the BART Extension Alternative.

To assess cumulative impacts of the proposed BART Extension Phase II Project, projects with significant sources of EMF close to the BART Extension were identified and are listed below.

- California HSR Project (alternating current [AC] system)
- Peninsula Corridor Electrification Project (AC system)
- Capitol Expressway Light Rail Transit Project (direct current [DC] system)
- Caltrain South Terminal Project (AC system)
- VTA's BART Silicon Valley Berryessa Extension Project (Phase I) (DC system)

EMFs are either DC or AC EMFs. EMFs from DC and AC system are different in nature, in that AC fields vary with time, and DC fields are static. Projects that use DC systems generate static DC EMFs, and projects that use AC systems generate variable AC EMFs. The BART system uses a DC system, and Caltrain and HSR use AC systems. Because estimation of resultant EMF from overlap and interference of multiple AC and DC EMFs involves complex spatial and temporal vector space calculations, for the sake of simplicity and as a conservative assessment, the cumulative AC and DC fields are calculated separately and compared to AC and DC EMF thresholds, respectively, and compared to appropriate thresholds of significance.

Considering locations of the above-listed projects and the BART Extension alignment, Diridon Station likely would be the location with the greatest potential exposure in terms of proximity to multiple sources of EMF.

At Diridon Station, the Capitol Expressway Light Rail Transit Project (750-volt DC system) is located just west of the Caltrain tracks; consequently, there will be two DC systems (Capitol Expressway Light Rail Transit Project and VTA's BART Silicon Valley Berryessa Extension Project [Phase I]) and two AC systems (Caltrain South Terminal Project and California HSR Project). Compared to the No Build Alternative, impacts of the BART Extension Alternative would be similar.

DC Electromagnetic Fields

The American Conference of Governmental Industrial Hygienists' threshold limit values (2013) for static magnetic fields for whole-body exposure are 20 million milliGauss (mG) for a daily value and 5,000 mG for medical device wearers. The International Commission on Non-Ionizing Radiation Protection suggests that the general public should not be exposed to continuous static magnetic fields stronger than 400,000 mG. Therefore, a significance threshold of 5,000 mG was used to assess cumulative impacts.

The Capitol Expressway Light Rail Transit Project is a 525 to 875 voltage DC system. According to the Santa Clara Alum Rock Transit Improvement Project Final EIR, field measurements of light rail cars during peak commute indicated typical magnetic field levels at about 50 percent of the 5,000 mG DC field exposure threshold, or 2,500 mG. The values outside the cars and in adjacent areas were much lower (estimated maximum of 921 mG near a substation).

Based on the data available for VTA's BART Silicon Valley Berryessa Extension Project (Phase I), magnetic field strength inside the rail vehicle varies from 1,600 mG to 2,000 mG, and exposure along the BART Phase I, below or adjacent to the alignment, can range up to 2,100 mG. Considering these two DC system EMF sources, the combined source strength is estimated to be approximately 4,500 mG. The combined EMF source strengths would not exceed the 5,000 mG DC EMF threshold of significance. Therefore, health impacts of the BART Extension due to exposure of sensitive receptors to DC electromagnetic fields would not contribute to an adverse or significant cumulative impact under NEPA or CEQA.

AC Electromagnetic Fields

As shown in the Peninsula Corridor Electrification Project EIR (page 3.5-16), EMF source strength for Caltrain electrified service could reach a level of approximately 51.3 mG with full re-electrification, and for the California HSR Project, it was estimated that fenceline EMF levels would be 177 mG (CHSRA 2012d). The combined EMF level of approximately 228.3 mG along the fenceline for blended service would be well below the AC EMF threshold of 833 mG.¹ Therefore, health impacts of the BART Extension due to exposure of sensitive receptors to AC EMFs would not contribute to an adverse or significant cumulative impact under NEPA or CEQA.

BART Extension with TOJD Alternative

The cumulative analysis for the BART Extension with TOJD Alternative is similar to that described above for the BART Extension Alternative. This alternative would not contribute to an adverse or significant cumulative impact under NEPA or CEQA for health impacts due to DC and AC electromagnetic fields.

7.1.4.7 Energy

The geographic context for the cumulative analysis of energy impacts is the San Francisco Bay Area region, where the alternatives and related projects are located. Because energy legislation adopted by California and local governments is intended to conserve statewide and regional energy consumption, projects that conflict with applicable plans and policies would contribute to a cumulative energy impact. Accordingly, for the purposes of this analysis, the BART Extension would result in a cumulatively considerable impact if it fails to

¹ The same AC EMF threshold of significance as used in the Peninsula Corridor Electrification Project EIR has been used in this EIR: 833 mG for AC magnetic fields.

implement energy conservation measures or conflicts with applicable state or local energy standards.

BART Extension Alternative

Construction

The construction of the BART Extension Alternative would require the use of gasoline and diesel through the operation of heavy-duty construction equipment and vehicles. As described in Impact BART Extension ENG-1, the construction of the BART Extension Alternative would result in the one-time consumption of up to approximately 765,076 million British thermal units (BTUs) over the 8-year construction period. The TOJD and other related projects include transportation, area, and land use plan projects that would also result in a significant one-time consumption of energy resources. The BART Extension Alternative, in combination with other foreseeable projects in the surrounding area, could have an adverse or significant cumulative impact on energy resources during the construction period.

However, as required by VTA's adopted Sustainability Program, the construction of this alternative would incorporate sustainability and green building principles and practices. These strategies would minimize and reduce waste and inefficient use of energy. Adherence to the program would reduce the impacts on energy resources during the construction period. In addition, this one-time consumption of energy during the construction period would result in operational energy resource savings in the long run. Therefore, the construction of the BART Extension Alternative would not result in cumulatively adverse effects on these resources under NEPA and would not result in a considerable contribution to a cumulative impact under CEQA.

Operation

As described in Chapter 4, Section 4.7, *Energy*, energy requirements for the operation of the BART Extension Alternative were estimated based on an electricity and regional VMT forecast. The analysis conducted in Section 4.7 considered future energy consumption with and without the BART Extension through the 2035 Forecast Year. As shown in Table 4.7-2, No Build Alternative conditions are projected to generate slightly more VMT in 2035 than the BART Extension Alternative. However, the BART Extension Alternative would increase electricity consumption, relative to No Build conditions. While the BART Extension Alternative would increase use of electricity and/or natural gas, the BART Extension Alternative would incorporate VTA's Sustainability Program green strategies, which would help conserve energy. The BART Extension Alternative would also facilitate implementation of MTC's *Plan Bay Area* and long-term sustainable land use strategy by providing an alternative to single-occupancy vehicle trips. These energy conservation measures are consistent with state and local energy policies enacted to reduce energy consumption. Increases in electricity and natural gas demand would also be accommodated by Pacific Gas & Electric Company (PG&E) through biannual California Public Utilities Commission (CPUC) Long-Term Procurement Plan proceedings. Accordingly, the BART Extension

Alternative would not result in a wasteful, inefficient, and unnecessary usage of cumulative energy, and would not contribute to an adverse or significant cumulative impact under NEPA or CEQA.

BART Extension with TOJD Alternative

Construction

The construction of the BART Extension with TOJD Alternative would require the use of gasoline and diesel through the operation of heavy-duty construction equipment and vehicles. As described in Impact BART Extension + TOJD ENG-1, the construction of the BART Extension with TOJD Alternative would result in the one-time consumption of up to approximately 863,113 million BTUs over the 8-year construction period. The other related projects include transportation, area, and land use plan projects that would also result in a significant one-time consumption of energy resources. The BART Extension with TOJD Alternative, in combination with other foreseeable projects in the surrounding area, could have an adverse or significant cumulative impact on energy resources during the construction period.

However, as required by VTA's adopted Sustainability Program, the construction of this alternative would incorporate sustainability and green building principles and practices. These strategies would minimize and reduce waste and inefficient use of energy. Adherence to the program would reduce the impacts on energy resources during the construction period. In addition, this one-time consumption of energy during the construction period would result in operational energy resource savings in the long run. Therefore, the construction of the BART Extension with TOJD Alternative would not result in cumulatively adverse effects on these resources under NEPA and would not result in a considerable contribution to a cumulative impact under CEQA.

Operation

The analysis conducted in Chapter Section 6.7, *Energy*, considered future energy consumption with and without the BART Extension with TOJD Alternative through the 2035 Forecast Year. As shown in Table 6.7-1, the No Build Alternative is projected to generate slightly more VMT in 2035 than the BART Extension with TOJD Alternative. However, the BART Extension with TOJD Alternative would increase electricity and natural gas consumption relative to No Build conditions. While the BART Extension with TOJD Alternative would increase electricity and/or natural gas, this alternative would incorporate VTA's Sustainability Program green strategies, which would help conserve energy. Furthermore, the TOJD would be constructed consistent with the conservation requirements of the CALGreen Code and Title 24 standards. Increases in electricity and natural gas demand would also be accommodated by PG&E through biannual CPUC Long-Term Procurement Plan proceedings. Accordingly, the BART Extension with TOJD Alternative would not result in a wasteful, inefficient, and unnecessary usage of cumulative energy.

Overall, the BART Extension with TOJD Alternative would not contribute to an adverse or significant cumulative impact under NEPA or CEQA.

7.1.4.8 Geology, Soils, and Seismicity

The geographic context for the analysis of impacts resulting from geologic hazards is generally site specific rather than cumulative in nature. Every project has unique geologic considerations that are subject to uniform site development and construction standards. As such, the potential for cumulative impacts to occur is limited. For impacts related to exposure to seismic hazards, the geographic context is the Bay Area because the entire region is seismically active, with people subject to risk of injury and structures subject to damage as a result of seismic ground shaking.

BART Extension Alternative

Construction

Construction of the BART Extension Alternative would result in ground-disturbing activities that could exacerbate erosion conditions by exposing soils. However, adherence to the best management practices stipulated in the Stormwater Pollution Prevention Plan would mitigate the contribution to soil erosion. Therefore, the construction of the BART Extension Alternative would not contribute to an adverse or significant cumulative impact under NEPA or CEQA.

Operation

Cumulative impacts related to geology, soils, and seismicity associated with the BART Extension Alternative in combination with other 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. Compared to the No Build Alternative, the BART Extension Alternative does not create or induce any geologic hazards. However, the BART Extension Alternative does create transit infrastructure that could be affected by geologic or seismic events. Other related projects would introduce new structures and populations to such potential impacts. However, the impacts on 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. Implementation of mitigation measures required for the BART Extension Alternative, as described in Chapter 4, Section 4.8, *Geology, Soils, and Seismicity*, would reduce the potential impacts of the BART Extension Alternative on geology, soils, and seismicity. 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, including the California Building Code guidelines and the BART Facilities Standards. Therefore, this alternative would not contribute to an adverse or significant cumulative impact under NEPA or CEQA.

BART Extension with TOJD Alternative

The cumulative analysis for the BART Extension with TOJD Alternative is similar to that described above under construction and operation for the BART Extension Alternative. With adherence to project-specific mitigation, this alternative would not contribute to an adverse or significant cumulative impact under NEPA or CEQA.

7.1.4.9 Greenhouse Gas Emissions

The geographic context for the cumulative analysis of greenhouse gas (GHG) emissions is the SFBAAB, which is within the jurisdiction of BAAQMD. According to the BAAQMD CEQA Guidelines, any project that would individually have a significant GHG impact would also have a cumulatively considerable GHG impact.

BART Extension Alternative

Construction

The construction of the BART Extension Alternative would result in direct GHG emissions from mobile and stationary construction equipment exhaust as well as employee and haul truck vehicle exhaust. Indirect emissions would be generated from water use for fugitive dust control. It is estimated that the construction of the BART Extension Alternative would generate up to 50,787 metric tons of carbon dioxide equivalent (CO₂e) over the 8-year construction period. Other related projects include transportation, area, and land use plan projects that could also result in significant GHG emissions during the construction of their project features. The BART Extension Alternative, in combination with other foreseeable projects in the surrounding area, could have an adverse cumulative effect or significant cumulative impact from GHG emissions during the construction period.

Construction of this alternative would be required to incorporate Mitigation Measures AQ-CNST-B through AQ-CNST-H (see Chapter 5, Section 5.5.3, *Air Quality*) to limit idling times to 5 minutes or less, limit vehicle speeds to 15 miles per hour (mph) or less, and perform equipment maintenance and tuning in accordance with manufacturer specifications. With the incorporation of these measures, GHG impacts from the construction of this alternative would be less than significant. Therefore, during construction, this alternative would not result in cumulatively adverse effects on GHG emissions under NEPA and would not result in a considerable contribution to a cumulative impact under CEQA.

Operation

As described in Chapter 4, Section 4.9, *Greenhouse Gas Emissions*, the BART Extension Alternative would increase ridership, thereby decreasing regional passenger VMT through mode shift from private automobiles to transit compared to the No Build conditions. Although operation of the alternative would increase electricity-related emissions, these emissions would be offset by benefits associated with vehicle mode shift. Therefore, the operation of the BART Extension Alternative would not contribute to cumulatively adverse

effects under NEPA and would not result in a considerable contribution to a cumulative impact under CEQA.

BART Extension with TOJD Alternative

Construction

The construction of the BART Extension with TOJD Alternative would result in direct GHG emissions from mobile and stationary construction equipment exhaust as well as employee and haul truck vehicle exhaust. Indirect emissions would be generated from water use for fugitive dust control. It is estimated that the construction of the BART Extension with TOJD Alternative would generate up to 57,117 metric tons of CO₂e over the 8-year construction period. The other related projects include transportation, area, and land use plan projects that could also result in significant GHG emissions during the construction of their project features. The BART Extension with TOJD Alternative, in combination with other foreseeable projects in the surrounding area, could have an adverse cumulative effect or significant cumulative impact from GHG emissions during the construction period.

Construction of this alternative would be required to incorporate Mitigation Measures AQ-CNST-B through AQ-CNST-H to limit idling times to 5 minutes or less, limit vehicle speeds to 15 mph or less, and perform equipment maintenance and tuning in accordance with manufacturer specifications. With the incorporation of these measures, GHG impacts from the construction of this alternative would be less than significant. Therefore, during construction, this alternative would not result in cumulatively adverse effects on GHG emissions under NEPA and would not result in a considerable contribution to a cumulative impact under CEQA.

Operation

As described in Chapter 6, Section 6.9, *Greenhouse Gas Emissions*, the BART Extension with TOJD Alternative would increase ridership, thereby decreasing regional passenger VMT through mode shift from private automobiles to transit. However, the mode shift benefit achieved by the BART Extension would not be sufficient to offset GHG emissions from increased BART electricity consumption and the TOJDs in the 2035 Forecast Year. Implementation of Mitigation Measures GHG-A through GHG-D (see Chapter 6, Section 6.9, *Greenhouse Gas Emissions and Climate Change*, and AQ-CNST-1 (Chapter 5, Section 5.5.3, *Air Quality*) require TOJDs to achieve an energy efficiency 15 percent greater than Title 24 requirements, participate in food waste programs, install electrical outlets for landscaping equipment, include parking for electric vehicles, and use architectural coatings with low volatile organic compound content to reduce operational GHG emissions. However, even with implementation of project-specific mitigation measures, a net negative impact cannot be assumed and it is conservatively assumed that the BART Extension with TOJD Alternative's long-term (2035 Forecast Year) emissions would be significant and unavoidable. Per BAAQMD CEQA Guidelines, because this alternative would individually have a significant

GHG impact, it would also result in cumulatively adverse effects on GHG under NEPA and would result in a considerable contribution to a cumulative impact under CEQA.

7.1.4.10 Hazardous Materials

Environmental impacts related to hazardous materials generally occur on a site-specific basis or are linked to a specific hazardous waste site, such as a designated superfund site.

Therefore, the geographic context for the cumulative analysis for hazardous materials is the alignment and adjacent areas.

BART Extension Alternative

Construction

The construction of the BART Extension Alternative would utilize hazardous materials such as motor fuels, oils, solvents, and lubricants. Common construction activities, such as fueling, maintenance, and operation of construction equipment, could result in the exposure of workers, the public, and/or the environment to hazardous materials if the materials are not properly managed. In addition, construction activities for the BART Extension Alternative would include demolition of buildings that may contain hazardous materials, such as asbestos-containing materials and lead-based paint, or may involve ground-disturbing activities in areas where hazardous materials may be present in soil, ballast, and groundwater beneath the alignment. However, compliance with state and local regulations regarding the routine transport, use, or disposal of hazardous materials and project-specific mitigation measures would reduce potential impacts to less-than-significant levels. Although the construction of other related projects also has the potential to disturb contaminated materials and entail the conveyance of hazardous materials, each project would identify project-specific mitigation measures during independent environmental review and would be required to implement these measures. Therefore, the construction of the BART Extension Alternative would not contribute considerably to a cumulative impact related to hazardous materials, and the impact would not be significant under NEPA or CEQA.

Operation

Other related projects are commercial and residential developments or transportation 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. Compared to the No Build Alternative, the impacts would be similar to the BART Extension Alternative and would not introduce new sources of hazardous materials or transport hazardous materials. Hazardous materials are strictly regulated by local, state, and federal laws specifically to ensure that they do not result in a gradual increase of toxins in the environment. In addition, implementation of the mitigation measure required for the BART Extension Alternative, as described in Chapter 4, Section 4.10, *Hazards and Hazardous Materials*, would reduce the potential hazardous material exposure risks of the construction workers and lessen the potential impacts to a less-than-significant level. As a result, the development of the BART

Extension Alternative in combination with other related projects would not result in a cumulatively considerable impact related to hazards or hazardous materials, and the impact would not be significant under NEPA or CEQA.

BART Extension with TOJD Alternative

The cumulative analysis for the BART Extension with TOJD Alternative is similar to that described above under construction and operation for the BART Extension Alternative. With adherence to project-specific mitigation, this alternative would not contribute to an adverse or significant cumulative impact under NEPA or CEQA.

7.1.4.11 Land Use

Because land use policies are regional in scope, the geographic context for the cumulative impacts associated with land use issues is broader than the Cities of San Jose and Santa Clara in which the BART Extension would be located, and includes regional development under the jurisdiction of the Association of Bay Area Governments (ABAG). Therefore, past, present, and future cumulative development within this geographic context assumes full buildout of the general plans in the nine ABAG counties, as well as development envisioned in the land use elements of the San Jose and Santa Clara general plans.

BART Extension Alternative

As discussed in Chapter 4, Section 4.11, *Land Use*, the construction and operation of the BART Extension Alternative would be generally consistent with adjacent land uses and regional and local plans and policies. In addition, each jurisdiction must consider whether the related projects could conflict with any applicable land use plan, policy, or regulation and avoid or mitigate an environmental impact related to inconsistencies. Compared to the No Build Alternative, the land use impacts would be similar except that absence of the BART Extension would be inconsistent with the regional transportation plans.

Therefore, there would be no cumulative impact as a result of cumulative development in the ABAG region. Consequently, the cumulative land use impact would not be considerable and would not be significant under NEPA or CEQA.

BART Extension with TOJD Alternative

As discussed in Chapter 6, Section 6.11, *Land Use*, the BART Extension with TOJD Alternative would have a longer construction period, and construction-period impacts would likely be more severe than those of the BART Extension Alternative. Furthermore, the operation of the BART Extension with TOJD Alternative could result in additional vehicle trips due to implementation of TOJD and thus result in more severe impacts related to conservation plans. However, the BART Extension with TOJD Alternative would be generally consistent with adjacent land uses and regional and local plans and policies. Overall, the BART Extension with TOJD Alternative's contribution to cumulative land use impacts would not be considerable and would not be significant under NEPA or CEQA.

7.1.4.12 Noise and Vibration

The geographic context for the cumulative analysis of noise and vibration impacts includes any planned development that could affect the sensitive receptors (residential development) in the immediate vicinity.

BART Extension Alternative

Construction

The construction of the BART Extension Alternative could result in significant noise and vibration impacts. However, with mitigation, the vibration impacts would be reduced to a less-than-significant level. Even with mitigation, noise impacts would remain significant during construction. Other related projects would be required to mitigate any construction-related noise impacts if feasible. However, it is unlikely that several construction projects would be underway at nearby locations at the same time. Still, the contribution of the BART Extension Alternative to construction-related noise impacts would be cumulatively considerable and would be considered significant under NEPA or CEQA.

Operation

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 the Santa Clara above-ground station, noise from emergency mechanical equipment, and traffic into and out of the parking lots. However, most of these sources are site specific and would not result in a cumulative noise impact. Cumulative traffic noise impacts would not be significant because the parking garage traffic volumes are not substantial, and noise-sensitive land uses are not adjacent to the structures. Therefore, the contribution of the BART Extension Alternative to operation-related noise impacts would not be cumulatively considerable and would not be significant under NEPA or CEQA.

BART Extension with TOJD Alternative

Construction

The construction of the BART Extension with TOJD Alternative could result in significant noise and vibration impacts. However, with mitigation, the vibration impacts would be reduced to a less-than-significant level. Even with mitigation, noise impacts would remain significant during construction. Although other related projects would be required to mitigate any construction-related noise impacts, the contribution of the BART Extension with TOJD Alternative to construction-related noise impacts would be cumulatively considerable and would be considered significant under NEPA and CEQA.

Operation

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. However, most of these sources are site specific and would not result in a cumulative noise impact. Cumulative noise impacts would be related to an increase in traffic noise from cumulative project development.

Table 7-3 shows the projected increase in traffic volumes at intersections that are associated with the BART stations with and without the BART Extension with TOJD Alternative. Also shown are the expected increase in peak hour noise levels due to these traffic increases.

Most of the intersections shown in Table 7-3 are not in residential neighborhoods. The intersection at North 28th Street and Santa Clara Street is in a residential area and is representative of the changes in traffic that could occur along Santa Clara Street.

With the BART Extension with TOJD Alternative, the increase in noise would be 2.4 A-weighted decibels (dBA), which is 1.0 dBA more than the estimated noise increase of the No Build Alternative. The day-night sound level (L_{dn}) along Santa Clara Street would be 69 dBA. An increase in L_{dn} by 1.1 dBA from 69 (i.e., future L_{dn} of 70.1) would result in a Moderate Impact. An increase of 2.9 dBA would result in a Severe Impact. Consequently, a combined increase of 2.4 dBA due to the No Build Alternative plus the BART Extension with TOJD Alternative would result in a Moderate Impact, of which 1.0 dBA was attributable to the BART Extension with TOJD Alternative and 1.4 dBA was due to a natural increase in traffic. The intersection of North 28th Street and Santa Clara Street would experience the greatest increase in noise from the BART Extension with TOJD Alternative compared with the No Build Alternative.

In general, the cumulative noise increase in the 2015 Existing year due to projected traffic increases without the BART Extension with TOJD Alternative ranges from 0.4 to 1.9 dBA. Traffic associated with the BART Extension would increase the noise a minor amount ranging from 0.1 to 1.0 dBA above the level without the BART Extension with TOJD Alternative. Consequently, the operation of the BART Extension with TOJD Alternative would not result in a considerable noise impact due to increases in traffic. As such, there would be no cumulatively considerable significant NEPA or CEQA impact from traffic noise for the BART Extension with TOJD Alternative.

Table 7-3: Traffic Noise Impacts from the BART Extension with TOJD Alternative

Intersection	Station	Peak Hour Traffic Counts			Peak Hour Noise Increase (dBA)	
		2015 Existing Conditions (AM / PM)	2035 Forecast Year No Build (AM / PM)	2035 Forecast Year with BART Extension with TOJD (AM / PM)	2035 Forecast Year - No Build Over 2015 Existing (AM / PM)	2035 Forecast Year – with BART Extension with TOJD Over 2015 Existing (AM / PM)
US 101 and Santa Clara St	Alum Rock/28 th St	2011 / 2722	2475 / 3683	2631 / 3940	0.9 / 1.3	1.2 / 1.6
US 101 SB ramps and E Julian St	Alum Rock/28 th St	2834 / 2982	3519 / 3621	3887 / 3906	0.9 / 0.8	1.4 / 1.2
US 101 NB ramps and McKee Rd	Alum Rock/28 th St	2919 / 3332	3833 / 4219	4004 / 4361	1.2 / 1.0	1.4 / 1.2
N. 28 th St and Santa Clara St	Alum Rock/28 th St	1858 / 1996	2546 / 2357	3205 / 2959	1.4 / 0.7	2.4 / 1.7
24 th St and Santa Clara St	Alum Rock/28 th St	2081 / 2244	3088 / 3043	3360 / 3326	1.7 / 1.3	2.1 / 1.7
N. 28 th St and E. Julian St	Alum Rock/28 th St	2011 / 1949	2401 / 2145	2935 / 2683	0.8 / 0.4	1.6 / 1.4
26 th St. and Santa Clara St	Alum Rock/28 th St	1369 / 1659	1821 / 1928	2113 / 2137	1.2 / 0.7	1.9 / 1.1
Coleman Ave and I-880 SB Ramps	Santa Clara	4837 / 4515	7064 / 6452	7102 / 6529	1.6 / 1.6	1.7 / 1.6
El Camino Real and Benton St	Santa Clara	2024 / 2385	3114 / 3549	3203 / 3654	1.9 / 1.7	2.0 / 1.9
El Camino Real and Railroad Ave	Santa Clara	2109 / 2302	3150 / 3382	3202 / 3514	1.7 / 1.7	1.8 / 1.8
El Camino Real and The Alameda	Santa Clara	2353 / 2978	3075 / 4027	3303 / 4140	1.2 / 1.3	1.5 / 1.4

7.1.4.13 Security and System Safety

The geographic context for the cumulative analysis of security and system safety includes the fire protection, law enforcement, and other emergency response service areas in San Jose and Santa Clara.

BART Extension Alternative

Construction

Cumulative security and system safety impacts from the BART Extension Alternative would be offset by project-specific mitigation. Fencing and lighting of construction zones would be implemented to avoid accidents. Safety plans would be designed to account for worksite traffic control, pedestrian and bicyclist access, and handling of potential hazardous or contaminated materials. Emergency response personnel would also be notified of any transportation network disruptions or temporary detours to ensure that personnel will be available for immediate response. With implementation of these standard safety protocols, construction of the BART Extension Alternative would not result in an adverse effect. Similarly, other related projects would implement safety measures during construction as required by local cities and other governing regulations. Therefore, the cumulative impact would not be considerable, and the construction of the BART Extension Alternative would not contribute to an adverse cumulative impact under NEPA.

Operation

As discussed in Chapter 4, Section 4.13, *Security and System Safety*, and Section 4.4, *Community Facilities and Public Services*, BART Police would provide primary law enforcement within the BART Extension Alternative Operating Corridor, including onboard trains, tunnels, and rights-of-way, and within the station platform areas. Police protection for BART facilities outside of the Operating Corridor would be coordinated by VTA and the Santa Clara County Sheriff's Office (SCCSO). VTA is providing a new BART Police Station at the Berryessa Station, and will provide new facilities for SCCSO by reconfiguring an existing VTA facility. Compared to the No Build conditions, the BART Extension Alternative would have an additional need for safety and security personnel and infrastructure.

A Safety and Security Certification Program has been developed for the BART Extension Alternative to ensure that it is designed in compliance with applicable safety and security design codes discussed in Chapter 4, Section 4.13. This program would be administered by the BART System Safety Department. VTA would certify the safety and security of the BART extension to ensure that the design, construction, and installation of equipment are systematically reviewed for compliance with safety and security requirements. In addition, BART will validate safety operational readiness of the system prior to the commencement of revenue service.

Therefore, the cumulative impact would not be considerable, and the operation of the BART Extension Alternative would not contribute to an adverse cumulative impact under NEPA.

7.1.4.14 Socioeconomics

The geographic context for the cumulative analysis of socioeconomics includes future development within the communities that surround the alignment. As discussed in Chapter Section 4.14, *Socioeconomics*, and 5.5.15, *Socioeconomics*, demographics within 0.5 mile of the alignment are considered in addition to the area within the study limits. Future land use development is anticipated to increase to accommodate anticipated growth in the area. The areas surrounding the alignment are mostly built-out, and the majority of future development generally involves redevelopment of existing areas, infill development, or development of vacant lots.

BART Extension Alternative

Construction

Construction of the BART Extension Alternative would increase traffic, transit, and parking difficulties, which could disrupt access to public facilities, businesses, and residences. Residents, businesses, and visitors along the alignment would also be subject to noise, dust, vibration, and emissions from construction equipment during construction activities. These impacts could discourage or restrict pedestrian activity along the blocks under construction and reduce foot traffic, which could affect local businesses. These effects, in combination with effects from other proposed development projects in the area, would contribute to a cumulative effect. VTA would ensure vehicle, bicycle, and pedestrian traffic would be maintained. Additionally, VTA would work with property and business owners to minimize disruption and maintain access throughout construction. However, residents, businesses, and visitors along the alignment would experience adverse construction-related effects for transportation because such effects would continue to be adverse after mitigation. Therefore, this would also result in cumulatively adverse effects on socioeconomics under NEPA during construction.

Operation

Operation of the BART Extension Alternative would displace industrial and commercial types of businesses. These relocations, in combination with relocations from other proposed development projects in the area, would contribute to a cumulative effect. Compared to the No Build Alternative, the BART Extension Alternative has greater potential to result in displacement and relocation of businesses. Accordingly, VTA would work closely with any displaced businesses, per federal and state relocation laws and policies. All rights and services provided under Public Law 91-646, the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, would be strictly adhered to. With adherence to these policies through the implementation of a Relocation Assistance Program,

the BART Extension Alternative would not result in cumulatively adverse effects on socioeconomics under NEPA during operation.

7.1.4.15 Environmental Justice

The geographic context for the cumulative analysis of environmental justice includes populations that surround the alignment. The areas surrounding the alignment are mostly built-out, and the majority of future development generally involves redevelopment of existing areas, infill development, or development of vacant lots. Future land use development is anticipated to increase to accommodate anticipated growth in the area.

As discussed in Chapter 4, Section 4.18, *Environmental Justice*, and Chapter 5, Section 5.5.19, *Environmental Justice*, the analysis identified environmental justice populations within most of the study area.

BART Extension Alternative

Construction

Construction of the BART Extension Alternative would have construction-period environmental effects related to socioeconomics, hazards and hazardous materials, noise and vibration, water quality, and visual quality. Accordingly, environmental effects would be mitigated, where feasible, ensuring that effects on low-income and minority communities would be reduced. However, environmental justice populations would experience adverse construction-related effects for air quality, noise, and transportation and transit because such effects would continue to be adverse with mitigation. These effects, in combination with effects from other proposed development projects in the area, would contribute to a cumulative effect. Therefore, this would also result in cumulatively adverse effects on environmental justice populations under NEPA during construction.

Operation

Operation of the BART Extension Alternative would not result in long-term adverse effects. Compared to the No Build Alternative, operation of the BART Extension Alternative would increase transit opportunities equally for environmental justice and non-environmental justice populations. In general, environmental justice populations rely more heavily on transit due to low car ownership. Operation of the BART Extension Alternative would provide benefits of an expanded transit service and regional connectedness for environmental justice populations. Additionally, other transit projects planned in the region would similarly benefit these populations.

7.1.4.16 Utilities

The geographic context for the cumulative analysis of utilities is the service area for the Newby Island Landfill (solid waste), Water Pollution Control Plant (wastewater treatment), San Jose Water Company (water supply and conveyance infrastructure), San Jose

Department of Public Works (wastewater conveyance infrastructure and stormwater infrastructure), and City of Santa Clara Water and Sewer Utility (water supply, water conveyance infrastructure, and wastewater conveyance infrastructure).

BART Extension Alternative

Construction

During construction, the BART Extension Alternative would not introduce a permanent new population to the area, nor would it generate an increased demand for utilities in facilities. Compared to the No Build Alternative, the BART Extension Alternative would result in a minor increase in demand for utilities. The construction of the related projects also would not introduce a new permanent population or substantially increase demand for utilities. However, several major utility relocations would be required. Practices would be implemented to avoid or minimize disruptions in service. Other related projects could have similar significant effects related to utilities and would also be required to implement practices to minimize service disruption. Therefore, the construction of the BART Extension Alternative would not contribute to an adverse or significant cumulative impact under NEPA or CEQA.

Operation

Operation of the BART Extension Alternative, in combination with planned and foreseeable development, could permanently increase demand for utility services such that existing utility capacities are exceeded.

According to the *Envision San Jose 2040 General Plan EIR*, solid waste generated by development under the *Envision San Jose 2040 General Plan* would be minimized through implementation of *Envision San Jose 2040 General Plan* policies, existing regulations, and local programs, including the Zero Waste Resolution, which set a city-wide goal of 100 percent waste diversion by 2022. Therefore, planned and future projects in San Jose would not exceed the capacity of existing landfills serving San Jose.

According to the *Santa Clara 2010–2035 General Plan EIR*, there is sufficient capacity in the existing solid waste disposal facilities serving Santa Clara to accommodate waste generated by development under the *Santa Clara 2010–2035 General Plan* through 2024. Therefore, the BART Extension Alternative would not result in cumulatively considerable impacts on solid waste, and impacts would not be significant under NEPA or CEQA.

New development in Santa Clara and San Jose may increase impervious surfaces in some areas, leading to increased runoff volume and peak flows. However, new development in San Jose and Santa Clara must adhere to stormwater requirements in conformance with state regulations, including National Pollutant Discharge Elimination System permits, and local requirements with the aim for no net increase in flows. Therefore, the BART Extension Alternative would not result in cumulatively considerable impacts on stormwater, and impacts would not be significant under NEPA or CEQA.

The San Jose Water Company (SJWC) prepared a Water Supply Assessment (WSA) that analyzed water demand associated with the BART Extension Alternative against projected demand in the SJWC service area. The SJWC WSA determined that the BART Extension's anticipated water demand is within normal growth forecasts for SJWC's system. In addition, water usage for the BART Extension Alternative was included in SJWC's 2010 Urban Water Management Plan (UWMP) demand projection. Therefore, SJWC has sufficient supply to serve the BART Extension Alternative in addition to planned and foreseeable development within the SJWC system.

The Santa Clara Water and Sewer Utility (SCWSU) prepared a WSA that analyzed water demand associated with the BART Extension Alternative against projected demand in the SCWSU service area. The SCWSU WSA determined that the BART Extension Alternative's anticipated water demand is within normal growth forecasts for SCWSU's system. The SCWSU 2010 UWMP did not consider demand associated with the BART Extension Alternative; however, the SCWSU UWMP forecasted increased water demand due to densification and intensification of both residential and non-residential land uses. The projected increase in water demand for the BART Extension Alternative is within the 2010 UWMP growth forecasts. Therefore, SCWSU has sufficient supply to serve the BART Extension Alternative in addition to planned and foreseeable development within the SCWSU system.

City regulations require that projects that contribute to potential cumulative impacts on water and wastewater conveyance infrastructure identify fair-share contributions to capacity-relief improvements. Therefore, the BART Extension Alternative would not result in cumulatively considerable impacts on water supply and/or conveyance, and impacts would not be significant under NEPA or CEQA.

BART Extension with TOJD Alternative

Construction

Construction of the BART Extension with TOJD Alternative would not introduce new residents to the area that would permanently increase demand for utilities. Therefore, construction of the BART Extension with TOJD Alternative would not have a considerable contribution to a cumulative significant impact for utilities under NEPA or CEQA.

Operation

The BART Extension with TOJD Alternative, in combination with other related projects, would introduce new permanent populations to the Cities of San Jose and Santa Clara, which could generate an increased demand for water, wastewater, and solid waste services and require connections to existing utility systems in the area. However, the BART Extension with TOJD Alternative and other related 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, the BART Extension with TOJD Alternative's contribution to cumulative utilities impacts would not be considerable, and impacts would not be significant under NEPA or CEQA.

7.1.4.17 Visual Quality and Aesthetics

The geographic context for the cumulative analysis of visual quality impacts and aesthetics includes past, present, and foreseeable projects within the alignment and vicinity.

BART Extension Alternative

Construction

The construction of the BART Extension in combination with TOJD and other related projects would result in construction-period visual impacts due to the presence of construction equipment, light and glare, and newly disturbed natural land cover. Construction associated with the BART Extension Alternative could occur simultaneously and in the same location as other projects. The majority of the projects included in the cumulative project list are not close to the BART Extension Alternative (refer to Table 7-2). Two projects are located near the Diridon Station: the Caltrain South Terminal Project and the Alameda Project. The Caltrain South Terminal Project would add a fourth main track of approximately 2,000 feet in length from Caltrain's Centralized Equipment Maintenance and Operations Facility to the north end of Diridon Station, just north of Santa Clara Street. Construction of the BART Extension will occur over approximately 24 months beginning in fall 2018. No roadway closures or detours would be required. The majority of the construction work would occur during nights and weekends in order to minimize impacts on rail operations, thereby also reducing visual impacts of active construction. The timing of construction of the Diridon Station could overlap with construction of the Caltrain South Terminal Project. However, construction activities associated with the Caltrain South Terminal Project would be dispersed along the existing Caltrain tracks and across Santa Clara Street from the BART Extension.

The Alameda Project is located on the north side of The Alameda across from Wilson Avenue in San Jose (northwest of the South and North Diridon Station areas). The Alameda Project includes 168 attached residential units and 22,660 square feet of commercial uses. Project construction began in spring 2015 and is estimated to be completed in approximately 26 months (spring 2017). The Alameda Project is not immediately adjacent to the BART Extension Alternative, and construction of the BART Extension Alternative is anticipated to begin in 2018, toward the end of construction of the Alameda Project.

There are also several area plans and studies close to the BART Extension Alternative, such as the City of San Jose's Assessing the Development Impacts of BART Phase II Study, the City of San Jose Station Area Access and Connectivity Study, and the Diridon Station Area Plan. These plans and studies would not have significant visual effects and, therefore, when

considered in combination with the BART Extension Alternative, would not have a cumulative visual impact.

Lastly, projects would likely implement visual screening techniques and proper containment of debris to reduce visual effects during construction. Therefore, the construction of the BART Extension Alternative would not contribute to cumulatively adverse effects under NEPA and would not result in a considerable contribution to a cumulative impact under CEQA.

Operation

Cumulative visual effects from the projects planned within the vicinity of the BART Extension Alternative would increase the scale and mass of the built environment surrounding the above-ground BART Extension Alternative facilities. Compared to the No Build conditions, the visual change would not be substantial. However, as the majority of the alignment and three of the four new stations would be underground, and the fourth (Santa Clara Station) would be in an existing railroad corridor, the visual effects would be minimal. Furthermore, the two parking garages at the Alum Rock/28th Street and Santa Clara Stations would not result in adverse visual impacts, and the above-ground facilities of the BART Extension Alternative would have a minimal impact on the built environment. New aboveground visual elements would occur primarily at new stations. Additional aboveground visual elements include ventilation shafts, other above-ground features, and the maintenance facility.

There are no high-quality scenic views or vistas within the vicinity of the BART Extension Alternative. The BART Extension Alternative, in combination with other related projects in the area and region, would encourage more intense urban development around the station sites, which would cumulatively alter the existing visual environment. However, as discussed above, these changes are consistent with the existing visual character in the area; therefore, the operation of the BART Extension Alternative would not contribute to cumulatively adverse effects under NEPA and would not result in a considerable contribution to a cumulative impact under CEQA.

BART Extension with TOJD Alternative

Construction

The cumulative analysis for the BART Extension with TOJD Alternative during the construction period would be similar to the BART Extension Alternative as described above. The same planned projects would be applicable, including the Caltrain South Terminal Project and the Alameda Project; as described above, these projects in addition to the BART Extension with TOJD Alternative would not result in a significant cumulative impact. Although additional construction would occur under the BART Extension with TOJD Alternative, it would be dispersed along the alignment and would be temporary in nature. Additionally, visual screening techniques would be used to shield viewers from the visual

signs of construction. Therefore, the construction of the BART Extension with TOJD Alternative would not contribute to cumulatively adverse effects under NEPA and would not result in a considerable contribution to a cumulative impact under CEQA.

Operation

The introduction of light and glare by the BART Extension with TOJD Alternative would be substantially greater than under existing conditions. However, these effects would be reduced to less-than-significant levels with mitigation. The BART Extension with TOJD Alternative would also have a less-than-significant impact on visual quality. The BART Extension with TOJD Alternative, 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. However, as previously discussed, these changes would be consistent with the existing visual character in the area and would support jurisdictions' efforts to site in-fill development and higher densities within existing urban and suburban areas. Therefore, the operation of the BART Extension with TOJD Alternative would not contribute to cumulatively adverse effects under NEPA and would not result in a considerable contribution to a cumulative impact under CEQA.

7.1.4.18 Water Resources, Water Quality, and Floodplains

The study area geographic context for the cumulative analysis for of water resources, water quality, and floodplains includes any proposed development and/or cumulative projects within the alignment and vicinity.

BART Extension Alternative

Water Quality

The BART Extension Alternative and other related projects would be subject to the federal, state, and local requirements related to surface water resources. National Pollutant Discharge Elimination System permits issued that authorize construction and/or operations 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 Municipal Separate Storm Sewer System permits and/or general waste discharge requirements.

The Cities of San Jose and Santa Clara, Santa Clara County, and the Santa Clara Valley Water District 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 National Pollutant Discharge Elimination System permits issued to these programs. New and redevelopment projects are subject to requirements to ensure compliance with these permits. Cumulative construction and operation impacts would therefore not be considerable, and the impact would not be significant under NEPA or CEQA.

Floodplains

The BART Extension Alternative and other related projects would be subject to the regulatory requirements and agency criteria from the Federal Emergency Management Agency, Santa Clara Valley Water District, California Department of Transportation, BART, and municipal codes of local cities. Although the BART Extension Alternative area near the Alum Rock/28th Street Station is within a 100-year flood zone, completion of the Lower Silver Creek Flood Protection Project will protect all homes and businesses subject to the 1 percent annual chance flood from Lower Silver Creek. Additionally, to address known design flow constraints and flooding issues, improvement projects are planned and/or programmed (funded) on several creeks within the BART Extension Alternative area, as well as upstream and downstream. Once completed, these projects would eliminate flooding in the areas of improvements. Cumulative operation flooding impacts would therefore not be considerable, and the impact would not be significant under NEPA or CEQA.

Stormwater Runoff

The BART Extension Alternative in combination with other related 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 with the Santa Clara Valley Water District and State Water Resources 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 the BART Extension Alternative in combination with other related projects would not have a cumulatively considerable construction and operation impact on groundwater recharge and stormwater runoff velocity and quantity, and the impact would not be significant under NEPA or CEQA.

BART Extension with TOJD Alternative

The cumulative analysis for the BART Extension with TOJD Alternative is similar to that described above for the BART Extension Alternative. This alternative would not contribute to an adverse or significant cumulative construction or operation impact under NEPA or CEQA for water quality, floodplain, and stormwater runoff.

7.2 Growth-Inducing Impacts under NEPA and CEQA

Section 15126.2(d) of the State CEQA Guidelines requires an EIR to address the growth-inducing effects of a project. A project is considered growth-inducing if it has the potential to directly or indirectly foster economic or population growth or the construction of new housing. Furthermore, NEPA requires projects to examine the indirect consequences or secondary impacts that may occur as a result of a proposed federal activity or action. NEPA guidelines require an evaluation of reasonably anticipated growth against the projections developed by a federally designated metropolitan planning organization.

The BART Extension Alternative could have an effect on growth by providing enhanced transit opportunities, and the BART Extension with TOJD Alternative could have an effect on growth by providing both enhanced transit opportunities and development. The analysis in this section focuses on whether the BART Extension Alternative (NEPA alternative) and BART Extension with TOJD Alternative (CEQA alternative) would directly or indirectly induce economic, population, or housing growth in the area.

7.2.1 Growth Inducement Analysis

Transportation projects have the potential for multiple growth-inducing effects. Improvements in transportation are likely to support growth by reducing travel times and improving accessibility to employment opportunities throughout the region. Social, economic, and technological changes within Santa Clara County and the region influence growth rates and patterns. In addition, city and county governments regulate population growth and economic development through zoning, land use plans, policies, and decisions on specific development proposals.

The BART Extension Alternative is designed to serve the current and planned growth in population, housing, and employment along the alignment and to support the development of a balanced multi-modal corridor consistent with local planning goals. The alignment is a centrally located major transportation corridor that connects with several other regional transit services including VTA light rail, Amtrak, ACE, Caltrain, and VTA bus service in Santa Clara. The current regional transportation plan prepared by MTC and ABAG is *Plan Bay Area*, which identifies long-range transportation planning efforts intertwined with regional housing, jobs, and land use projections for the Bay Area. MTC and ABAG projects that between 2010 and 2040, the nine-county San Francisco Bay Area will add 1.1 million jobs, 2.1 million people, and 660,000 homes, for a total of 4.5 million jobs, 9.3 million people, and 3.4 million homes. The BART Extension Alternative is a transit improvement project aimed at improving transit services and increasing intermodal connectivity. This transportation project would not have significant growth-inducing effects because the current growth in the region has already surpassed the capacity of the existing transportation network. Additionally, future growth into 2040 is largely anticipated in the region. Santa

Clara County is one of the counties accounting for substantial housing and job growth between 2010 and 2040. By extending BART service to Santa Clara and, therefore, enhancing transit service in the Bay Area, the BART Extension Alternative would serve the area's transit needs and accommodate planned future development.

7.2.1.1 Direct Growth Inducement in the Alignment

In accordance with Appendix G of the State CEQA Guidelines, a project would have a significant impact on population and housing if it would (1) Induce substantial population growth in area, either directly or indirectly, and (2) Displace substantial numbers of existing housing and people, necessitating the construction of replacement housing elsewhere.

BART Extension Alternative

The BART Extension Alternative would improve transit accessibility and enhance the potential for development to occur by providing new and improved transportation access. The BART Extension Alternative is intended to meet current and future travel demand. As discussed in Section 6.11, *Land Use*, the BART Extension Alternative would be consistent with the land use and development objectives of San Jose, Santa Clara, and regional and local agencies. The San Jose and Santa Clara general plans include goals and policies that support development that contributes to increased transit ridership, locates employment opportunities near transit, and accommodates or provides direct access to transit. Many of the local plans encourage high-density, mixed-use development near the stations. Additionally, regional plans include policies to encourage densification and concentrated development near transit and to develop housing near jobs and public transportation. Most of the land along the alignment is already developed or consists of approved or planned projects that require compliance with the respective local governments. These projects are undergoing or have undergone consistency analysis with the appropriate local jurisdiction's plans, policies, and strategies. Therefore, the BART Extension Alternative would not directly induce substantial population or housing growth beyond what is currently planned in each City. BART operations would not result in a substantial increase in jobs. Only one housing unit would be displaced. The alignment is already anticipated to receive a substantial increase in population and employment by 2040. Implementation of the BART Extension Alternative would provide mobility options along the alignment and the Bay Area and support development consistent with local plans. No significant impacts on population and housing would occur.

BART Extension with TOJD Alternative

The TOJD element would generate a population near the BART Extension stations. Population growth by the TOJD would be spurred by the TOJD's housing and commercial/retail spaces that directly provide and support employment and population growth. However, VTA's TOJD would be consistent with San Jose's and Santa Clara's planned development for those locations. No significant impacts on population and housing would occur.

7.2.1.2 Indirect Growth Inducement in the Alignment

As discussed above, the BART Extension Alternative and BART Extension with TOJD Alternative would not directly induce significant population, housing, and economic growth. However, by improving transportation along the alignment, thereby relieving traffic congestion and improving access to neighborhoods, civic resources, and employment opportunities, the BART Extension could increase the incentive for development on undeveloped or underutilized lots. The general plans for the Cities along the alignment each designate the types of uses allowable. Development along the alignment would be in accordance with the Cities' approved general plans and zoning codes.

Any potential future growth that could result from implementation of the BART Extension Alternative and BART Extension with TOJD Alternative would be under the Cities' jurisdictions. New transit-oriented development projects would be subject to environmental and development review and approval by each appropriate jurisdiction.

7.3 Irreversible and Irrecoverable Commitments of Resources under NEPA and CEQA

CEQ NEPA Regulations (40 CFR 1502.16) and State CEQA Guidelines Section 15126.2(c) require analysis of significant irreversible and irretrievable effects. NEPA requires an explanation of which environmental impacts are irreversible or would result in an irretrievable commitment of resources. CEQA requires evaluation of irretrievable resources to ensure that their use is justified.

A commitment of a resource is considered irreversible when its use limits the future options for its use. An irretrievable commitment refers to the use or consumption of a resource that is neither renewable nor recoverable for use by future generations. Irreversible changes may include current or future uses of non-renewable resources, and secondary or growth-inducing impacts that commit future generations to similar uses. The State CEQA Guidelines describe three distinct categories of significant irreversible changes: changes in land use that would commit future generations to specific uses, consumption of nonrenewable resources, and irreversible changes from environmental actions.

7.3.1 Changes in Land Use that Would Commit Future Generations

The alignment is within Santa Clara County from the Berryessa Station in San Jose to the Santa Clara Caltrain Station in Santa Clara. The BART Extension Alternative would commit land for construction easements, stations, portal sites, maintenance facilities, and other above-ground facilities. However, the alignment is an existing thoroughfare with existing transit services and connections, and many of the above-ground elements would not require

a substantial land commitment. Construction easements would not be a long-term commitment of land.

The BART Extension with TOJD Alternative would commit more land resources due to the development of parcels near the transit stations. The commitment of long-term land resources for transit infrastructure and transit-oriented development is consistent with the policies of the cities that promote transit uses. Neither the BART Extension Alternative nor the BART Extension with TOJD Alternative would commit future generations to or introduce changes in land use that would vary from the existing conditions or planned development by the cities.

7.3.2 Consumption of Nonrenewable Resources

Under the No Build Alternative, transit services in the alignment would only have minor improvements compared with the existing condition. The No Build Alternative would not provide any new BART stations within the alignment. The No Build Alternative would require additional energy use, and would impose an additional demand on the regional energy supply.

Construction of both the BART Extension Alternative and the BART Extension with TOJD Alternative would entail the one-time, irreversible, and irretrievable commitment of nonrenewable resources, such as labor required for planning, design, construction, and operations; energy (fossil fuels used for construction equipment and transportation of workers and materials); and construction materials (such as lumber, sand, gravel, metals, and water). Although these expenditures would be irrecoverable, they are not in short supply and the amount and rate of short-term consumption of these resources would not result in a significant environmental impact on the continued availability or supply of these resources or the unnecessary, inefficient, or wasteful use of such resources.

Additionally, the implementation of public transit improvement projects, including the BART Extension Alternative, would help to remove vehicles from roadways and freeways, reducing VMT and the consumption of fuels. Because of this reduction in fossil fuel consumption, the BART Extension Alternative and BART Extension with TOJD Alternative would result in an overall, long-term reduction in energy consumption compared to future No Build conditions and, consequently, would result in a beneficial energy impact.

7.3.3 Irreversible Changes from Environmental Actions

Under the No Build Alternative, transit services in the alignment would only have minor improvements compared with the existing condition. The No Build Alternative would not provide any new BART stations within the alignment, would require additional energy use, and would impose an additional demand on the regional energy supply. Without the BART Extension, there could be a slight increase in VMT.

The construction and implementation of the BART Extension Alternative would entail the irreversible and irretrievable commitment of energy and human resources, including labor required for planning, design, construction, and operations. These expenditures would be irrecoverable; however, they are not in short supply, and their use would not affect the continued availability and supply of these resources.

Analysis of the BART Extension with TOJD Alternative would not be substantially different from that of the BART Extension Alternative, as described above.

7.4 Relationship between Short-Term Uses and Long-Term Productivity under NEPA

NEPA (42 United States Code § 4321 et seq.) requires that a discussion of environmental consequences address the short-term uses of environmental resources compared with the long-term productivity of the environment.

The BART Extension Alternative is consistent with *Plan Bay Area*, which outlines the ultimate transportation plan for the region including local transit, road, and highway improvements. *Plan Bay Area* includes goals to improve access and thereby preserve economic vitality by concentrating future development around transit nodes and along transit corridors. Several areas along the alignment are designated priority development areas in *Plan Bay Area* and are targeted for higher-density development in corridor Cities' general plans. Depending on the selected alternative, the following long-term environmental impacts could occur.

- Violation of an air quality standard or contribute to an air quality violation and cause a cumulatively considerable net increase in a criteria pollutant during construction
- Generation of GHG emissions, either directly or indirectly, and conflict with a plan, policy, or regulation intended to reduce GHG emissions (BART Extension with TOJD Alternative)
- Potential loss of archaeological resource sites, if encountered during construction
- Use of non-renewable resources such as construction materials and energy
- Loss of plant resources caused by tree and landscaping removal in construction areas
- Economic losses experienced by displaced businesses and residences

Depending on the alternative selected, the following short-term environmental impacts could occur.

- Temporary construction-related air pollutant emissions, noise impacts, and visual quality impacts
- Temporary construction street and lane closures and detours impacting traffic, transit, pedestrians, and bicyclists

Conversely, the BART Extension Alternative would result in improved public transit, enhanced regional connectivity and increased transit ridership, greater mobility, and reduced air pollutant emissions compared to the No Build Alternative in the future. In addition, the BART Extension Alternative would support transportation solutions, local and regional land use plans, efficient growth, and sustainable development. The short-term and long-term productivity of the selected alternative would include the following.

- Increased jobs and revenue generated during construction and operations due to expanded transit services
- Decreased local street and highway congestion and improved travel times
- Alternative public transit travel options for businesses and local residents
- Improved access to local activity centers

The short-term and long-term productivity of the selected alternative would include the following.

- Regional air quality benefits by encouraging a modal shift from single-occupancy vehicles toward transit
- Improve regional connectivity and encourage a modal shift from single-occupancy vehicles to transit ridership

Therefore, the short-term impacts and uses of resources would enable significant maintenance and enhancement of regional and local short-term and long-term productivity. The benefits of the enhanced productivity from the BART Extension Alternative would outweigh the necessary short-term uses of environmental resources. Similarly, the BART Extension with TOJD Alternative would encourage transit ridership and, therefore, the benefits would outweigh the necessary short-term uses of environmental resources.

7.5 Significant Unavoidable Impacts under CEQA

Section 21067 of CEQA and Sections 15126(b) and 15126.2(b) of the State CEQA Guidelines require that an EIR describe any significant impacts, including those that can be mitigated but not reduced to a less-than-significant level. Furthermore, where there are impacts that cannot be alleviated without imposing an alternative design, their implications and the reasons why the project is being proposed, notwithstanding their effect, should also be described.

7.5.1 BART Extension Alternative

7.5.1.1 Construction

- Transportation: Disruption to vehicular traffic, bicyclists, and pedestrians during construction near Alum Rock/28th Street Station, Downtown San Jose Station (East and West Options), Diridon Station (South and North Options), and Newhall Maintenance Facility, West Portal, and Santa Clara Station for both Twin-Bore and Single-Bore Options (*Also cumulatively significant impact*).
- Transit – Bus: Construction of Downtown San Jose Station (East and West Options) and Diridon Station (South and North Options) would temporarily affect local bus service for both the Twin-Bore and Single-Bore Options (*Also cumulatively significant impact*).
- Transit – Light Rail: Construction of Downtown San Jose Station (West Option Only) would temporarily affect VTA’s light rail service through downtown San Jose for the Twin-Bore Option Only (*Also cumulatively significant impact*).
- Transit – Heavy Rail: Construction of the Diridon Station (North Option) would temporarily affect the existing easternmost track of Caltrain operations for the Twin-Bore Option Only (*Also cumulatively significant impact*).
- Air Quality: Exceed the NO_x emissions threshold during construction for both Twin-Bore and Single-Bore Options (*Also cumulatively significant impact*).
- Noise: Exceed noise thresholds near Downtown San Jose Station (East and West Options) and Diridon Station (South and North Options) during construction for both Twin-Bore and Single-Bore Options (*Also cumulatively significant impact*).

7.5.1.2 Operation

No significant unavoidable impacts would occur for the operational phase under the BART Extension Alternative.

7.5.2 BART Extension with TOJD Alternative

7.5.2.1 Construction

- Transit – Bus: Construction of Downtown San Jose Station (East and West Options) and Diridon Station (South and North Options) would temporarily affect local bus service for both the Twin-Bore and Single-Bore Options (*Also cumulatively significant impact*).
- Transit – Light Rail: Construction of Downtown San Jose Station (West Option Only) would temporarily affect VTA’s light rail service through downtown San Jose for the Twin-Bore Option Only (*Also cumulatively significant impact*).
- Transit- Heavy Rail: Construction of the Diridon Station (North Option) would temporarily affect existing easternmost track of Caltrain operations for the Twin-Bore Option Only (*Also cumulatively significant impact*).

- Air Quality: Exceed the ROG and NO_x emissions thresholds during construction for both the Twin-Bore and Single-Bore Options (*Also cumulatively significant impact*).
- Noise: Exceed noise thresholds during construction near Downtown San Jose (East and West Options) and Diridon Stations (South and North Options) for both the Twin-Bore and Single-Bore Options (*Also cumulatively significant impact*).
- Transportation: Disruption to vehicular traffic, bicyclists, and pedestrians during construction near Alum Rock/28th Street Station, Downtown San Jose Station (East and West Options), Diridon Station (South and North Options), and Newhall Maintenance Facility, West Portal, and Santa Clara Station for both the Twin-Bore and Single-Bore Options (*Also cumulatively significant impact*).

7.5.2.2 Operation

- Transportation: Intersection of De La Cruz Boulevard and Central Expressway—under 2035 Forecast Year Plus BART Extension with TOJD Conditions for both the Twin-Bore and Single-Bore Options (*Also cumulatively significant impact*).
- Air Quality: Exceed the ROG emissions threshold during operation for both the Twin-Bore and Single-Bore Options (*Also cumulatively significant impact*).
- Greenhouse Gas Emissions: Generate GHG emissions, either directly or indirectly; conflict with a plan, policy, or regulation intended to reduce GHG emissions in 2035 for both the Twin-Bore and Single-Bore Options (*Also cumulatively significant impact*).

7.6 Environmentally Superior Alternative under CEQA

Section 15126.6 of the State CEQA Guidelines requires that a lead agency identify an environmentally superior alternative among the alternatives to a project. The environmentally superior alternative is the alternative that would avoid or substantially lessen, to the greatest extent, the environmental impacts associated with a project while feasibly obtaining most of the major project objectives. Table 7-4 compares the impacts of the BART Extension with TOJD Alternative to those of the BART Extension Alternative and the No Build Alternative.

The BART Extension Alternative would involve VTA proceeding with construction and operation of the BART Extension to Santa Clara, but VTA would not proceed with TOJD on the identified sites. However, some form of TOJD would happen as adopted in the general plans for the Cities of San Jose and Santa Clara; therefore, under the BART Extension Alternative, impacts associated with the TOJD would occur in addition to those from building and operating the BART Extension.

In contrast, the No Build Alternative would avoid the impacts associated with construction and operation of the BART Extension, even though it would still involve the local

jurisdictions proceeding with planned development consistent with their adopted plans. Therefore, the No Build Alternative would be the environmentally superior alternative.

The State CEQA Guidelines require that, if the No Build Alternative is identified as environmentally superior, the EIR must identify an environmentally superior alternative among the other alternatives (Section 15126.6(e)(2)). Table 7-4 shows that, while the BART Extension Alternative would result in construction and operational impacts, its impacts would be less than those occurring under the BART Extension with TOJD Alternative (e.g., it would have less-than-significant operational transportation, air quality, and GHG impacts, and would be consistent with local plans, policies, and regulations intended to reduce GHG emissions). In contrast, the BART Extension with TOJD Alternative would have significant and unavoidable traffic impacts at the De La Cruz Boulevard and Central Expressway intersection under 2035 Forecast Year plus the BART Extension with TOJD Alternative, exceed air quality pollutant emissions during operations, generate indirect and direct emissions during operations, and, out of an abundance of caution, is conservatively assumed to have emissions that would be inconsistent with the goals in Executive Orders S-3-05 and B-30-15, creating significant and unavoidable impacts. Therefore, of the build alternatives, the BART Extension Alternative is the environmentally superior alternative because it would have fewer significant unavoidable environmental impacts than would result with implementation of the BART Extension with TOJD Alternative.

Table 7-4: Comparison of Environmental Impacts of the Alternatives

Topic Areas	BART Extension Alternative	BART Extension with TOJD Alternative	No Build Alternative Compared to BART Extension Alternative	No Build Alternative Compared to BART Extension with TOJD Alternative
Transportation	Construction: <i>SU</i>	Construction: <i>SU</i>	<	<
	Operation: <i>LTS</i>	Operation: <i>SU</i>	<	<
Air Quality	Construction: <i>SU</i>	Construction: <i>SU</i>	<	<
	Operation: <i>LTS</i>	Operation: <i>SU</i>	<	<
Biological Resources and Wetlands	<i>LTS</i> with mitigation	<i>LTS</i> with mitigation	<	<
Community Facilities and Public Services	<i>LTS</i>	<i>LTS</i>	<	<
Cultural Resources	<i>LTS</i> with mitigation	<i>LTS</i> with mitigation	<	<
Energy	<i>LTS</i>	<i>LTS</i>	<	<
Geology, Soils, and Seismicity	<i>LTS</i> with mitigation	<i>LTS</i> with mitigation	<	<
Greenhouse Gas Emissions	<i>LTS</i>	Construction: <i>LTS</i>	<	<
		Operation: <i>SU</i>		

Topic Areas	BART Extension Alternative	BART Extension with TOJD Alternative	No Build Alternative Compared to BART Extension Alternative	No Build Alternative Compared to BART Extension with TOJD Alternative
Hazards and Hazardous Materials	LTS with mitigation	LTS with mitigation	<	<
Land Use	Construction: LTS	Construction: LTS	<	<
	Operation: LTS with mitigation	Operation: LTS with mitigation	<	<
Noise/Vibration	Construction Noise: <i>SU</i>	Construction Noise: <i>SU</i>	<	<
	Construction Vibration and Operation Noise/Vibration: LTS with mitigation	Construction Vibration and Operation Noise/Vibration: LTS with mitigation	<	<
Utilities and Service Systems	Construction and Operation: LTS	Construction and Operation: LTS	<	<
Visual Quality and Aesthetics	Construction: LTS	Construction: LTS	<	<
	Operation: LTS	Operation: LTS with mitigation	<	<
Water Resources, Water Quality, and Floodplains	LTS with mitigation	LTS with mitigation	<	<
(<) = impact would be less than the alternative LTS = less-than-significant impact SU = significant and unavoidable impact				