CHAPTER 6.0: OTHER CEQA AND NEPA CONSIDERATIONS

6.1 INTRODUCTION

This chapter addresses additional issue areas that must be addressed as part of NEPA/CEQA environmental documents. This includes describing those environmental effects resulting from project implementation identified in Chapter 4, *Environmental Analysis*, that would be considered significant and that cannot be mitigated to a less than significant level under CEQA. This section also identifies significant cumulative impacts, the potential to foster economic or population growth either directly or indirectly in the SVRTC study area and surrounding environment, and the environmentally superior alternative.

6.2 CEQA SIGNIFICANCE DETERMINATION

6.2.1 CEQA SIGNIFICANCE THRESHOLDS

This combined environmental document complies with the National Environmental Policy Act (NEPA) requirements for the preparation of an EIS, and with CEQA requirements for an EIR. Use of the term "significant" differs under these two laws. While CEQA requires that a determination of significant impacts be stated in an EIR, NEPA does not require such a determination in an EIS. Under NEPA, significance is used to determine whether an EIS or some other level of documentation is required, and once a decision to prepare an EIS is made, the EIS reports all impacts and proposes mitigation wherever it is feasible to do so, regardless of the "significance" of impacts before and after mitigation is applied. For this reason, CEQA significance criteria and the determination of significant impacts have not been included in every section of this combined NEPA/CEQA EIS/EIR. Instead, those criteria and determinations have been grouped in this chapter.

It should be noted that, although the presence of mitigation creates a presumption of significant impacts under CEQA, NEPA anticipates that mitigation will be provided for the impacts of a project where it is feasible to do so. For this reason, some mitigation measures described in this document and in this section are wholly appropriate under NEPA, although the impacts they address may not be considered significant under CEQA.

CEQA requires that an EIR identify the significant environmental effects of the project (CEQA Guidelines Section 15126), but does not promulgate specific thresholds for significance. Instead, CEQA Guidelines Section 15064(b) states that "the determination . . . calls for careful judgment on the part of the public agency involved . . ." and that "an ironclad definition of significant effect is not possible because the significance of an activity may vary with the setting." The fundamental definition of significant effect under CEQA is "a substantial adverse change in physical conditions." This criterion underlies the evaluation of environmental impacts for most of the impact issues identified in the CEQA Environmental Checklist Form (Guidelines Appendix G). CEQA encourages lead agencies to develop and publish their own thresholds of significance for the purpose of determining the significant effects of their projects.

Some impact categories lend themselves to scientific or mathematical analysis, and therefore to quantification. Some categories have significance thresholds established by regulatory agencies, such as the California Department of Conservation or the BAAQMD. For other impact categories that are more qualitative or are entirely dependent on the immediate setting, a hard-and-fast threshold is not generally feasible, and the "substantial adverse change in physical conditions" is applied as the significance criterion. In the current analysis, the VTA has given careful consideration to the issue of significance and has established significance thresholds in coordination with public agencies to evaluate the effects of the SVRTC alternatives under CEQA. These significance thresholds are shown in Table 6.2-1.

Table 6.2-1: Draft Thresholds of Significance for the SVRTC Project			
EIS/EIR Section #	**Environmental Issue**	**Threshold of Significance**	**Source(s)**
4.2	Traffic and Transportation	Cause a Congestion Management Program facility intersection's level of service to deteriorate from LOS E (when compared to No-Action).	VTA; CEQA Guidelines, Appendix G, Checklist; Cities of San Jose, Milpitas, and Santa Clara
		Cause an increase in the critical volume delay by 4 seconds or more and increase the critical volume/capacity ratio by 0.01 or more at a Congestion Management Program facility intersection already operating at LOS F under No-Action conditions.	
		Cause a local intersection's level of service to deteriorate from LOS D (when compared to the No-Action).	
		Cause an increase in the critical volume delay by 4 seconds or more and increase the critical volume/capacity ratio by 0.01 or more at a local intersection already operating at LOS E or F under No-Action conditions.	
		Result in a change of two letter grades at an intersection operating at LOS A or B under No-Action conditions.	
		Add new trips totaling more than 1 percent of the freeway capacity if a freeway segment is already operating at LOS F.	
		Cause a substantial increase in regional vehicle miles traveled (VMT) or vehicle hours traveled (VHT).	
		Cause a substantial diversion of traffic onto a residential street.	
		Substantially disrupt traffic operations and/or substantially affect emergency vehicle response.	
	Parking	Result in a loss of parking spaces such that the loss results in substantial adverse economic impacts to businesses in the area.	VTA
		Construct a park-and-ride lot where demand is projected to be 105 percent or more of the lot's planned capacity.	
	Pedestrian and Bicycle Accessibility	Create particularly hazardous conditions for bicyclists or eliminate bicycle facilities, and adequate facilities do not remain to serve the community's needs.	VTA; CEQA Guidelines, Appendix G, Checklist
		Result in substantial overcrowding on public sidewalks, create hazardous conditions for pedestrians, or eliminate pedestrian access to adjoining areas.	
4.12	Agricultural Resources	Convert prime farmland, unique farmland, or farmland of statewide importance, as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.	State CEQA Guidelines, Appendix G, Checklist
		Conflict with existing zoning for agricultural use or a Williamson Act contract.	State CEQA Guidelines, Appendix G, Checklist
		Involve other changes in the existing environment, which, due to either location or nature, could result in conversion of farmland to non-agricultural use.	

Table 6.2-1: Draft Thresholds of Significance for the SVRTC Project			
EIS/EIR Section #	**Environmental Issue**	**Threshold of Significance**	**Source(s)**
4.3	Air Quality	Conflict or obstruct implementation of the Federal or California Clean Air Act.	BAAQMD; CEQA Guidelines, Appendix G, Checklist
		Violate federal or California air quality standards or contribute substantially to an existing or projected air quality violation.	
		Exceed the BAAQMD's significance criteria.	
		Expose sensitive receptors to substantial pollutant concentrations.	
		Create objectionable odors affecting a substantial number of people.	
		Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is classified as nonattainment under an applicable federal or California ambient air quality standard.	
4.4	Biological Resources and Wetlands	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in regional plans, policies, or regulations, or by USFWS, NOAA Fisheries, or CDFG.	VTA; CEQA Guidelines, Appendix G, Checklist
		Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in regional plans, policies, regulations, or by USFWS, NOAA Fisheries, or CDFG.	
		Have a substantial adverse effect on state waters or on federally protected wetlands, as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal, etc.), through direct removal, filling, hydrological interruption, or other means.	
		Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with an established native resident or migratory wildlife corridor(s), or impede the use of native wildlife nursery sites.	
		Conflict with the provisions of an adopted HCP, Natural Community Conservation Plan, or other approved regional or state HCP.	
4.5	Community Services	Result in the need for new or physically altered governmental facilities so as to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services: • fire protection, • police protection, • schools, • parks, and • other public facilities.	State CEQA Guidelines, Appendix G, Checklist

Table 6.2-1: Draft Thresholds of Significance for the SVRTC Project			
EIS/EIR Section #	**Environmental Issue**	**Threshold of Significance**	**Source(s)**
4.6	Cultural Resources	Cause a substantial adverse change in the significance of a historical resource, as defined in CEQA Guidelines Section 15064.5 or federal regulations and guidelines.	State CEQA Guidelines, Appendix G, Checklist
		Cause a substantial adverse change in the significance of an archaeological resource, pursuant to CEQA Guidelines Section 15064.5 or federal regulations and guidelines.	
		Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	
		Disturb any human remains, including those interred outside of formal cemeteries.	
4.7	Electromagnetic Fields	Result in DC magnetic fields that exceed the guidelines of the ACGIH.	ACGIH
4.8	Energy	Lead to a wasteful, inefficient, and unnecessary usage of energy.	VTA
		Place a substantial demand on regional energy supply or require substantial additional capacity.	
		Significantly increase peak and base period electricity demand.	
4.9	Environmental Justice	Have a disproportionate effect on Environmental Justice populations (a disproportionate effect is defined as an effect that is predominantly borne, more severe, or of a greater magnitude in areas with environmental justice populations than in other areas).	VTA
4.10	Geology, Soils, Seismicity	Expose people or structures to potential substantial adverse effects including the risk of loss, injury, or death involving: • rupture of a known earthquake fault; • strong seismic ground shaking; • seismic-related ground failure including liquefaction; • lateral spreading, subsidence, and collapse as a result of underlying unstable geologic units; or • expansive soil.	VTA; CEQA Guidelines, Appendix G, Checklist
4.11	Hazardous Materials	Create a significant hazard to the public or the environment through reasonable foreseeable upset and accident conditions involving the release of hazardous materials into the environment.	State CEQA Guidelines, Appendix G, Checklist
		Emit hazardous emissions, or handle hazardous materials or waste, within ¼-mile of an existing or proposed school.	
		Be located on a site that is included on a list of hazardous materials sites and, as a result, create a significant hazard to the public or the environment.	
		Create a potential hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.	

Table 6.2-1: Draft Thresholds of Significance for the SVRTC Project			
EIS/EIR Section #	**Environmental Issue**	**Threshold of Significance**	**Source(s)**
4.12	Land Use	Physically divide an established community.	VTA; CEQA Guidelines, Appendix G, Checklist
		Conflict with applicable regional plans and policies.	
		Be incompatible with existing adjacent uses such that it would cause adjacent land uses to make extensive operational adjustments that would reduce the efficiency or effectiveness of such land uses.	
4.13	Noise and Vibration	Contribute to a cumulative increase in noise levels that would be considered a severe impact according to FTA criteria.	FTA Noise and Vibration Criteria; BART Design Criteria
		Result in vibration levels that exceed FTA criteria.	
		Operational noise exceeds the BART design criteria.	
		Ground-borne vibration from operations exceeds the BART design criteria.	
4.15	Socioeconomics	Disrupt or divide the physical arrangement of an established community such that social interaction within the community is severely hampered.	VTA; State CEQA Guidelines
		Substantially affect the population, household, or community characteristics of the project study area in a negative way, or impede or detract from efforts to economically revitalize the study area.	
		Induce substantial growth in an area either directly (e.g., by proposing new homes or buildings) or indirectly (e.g., through extension of roads or infrastructure) not in accordance with existing community or city plans.	
		Displace existing businesses or housing, especially affordable housing.	
4.16	Utilities	Result in the construction of new storm water drainage facilities or the expansion of existing facilities that could cause significant environmental effects.	State CEQA Guidelines, Appendix G, Checklist
		Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities that could cause significant environmental effects.	
4.17	Visual Quality	Substantially damage scenic resources within a state scenic highway including, but not limited to, trees, rock outcroppings, and historic buildings.	State CEQA Guidelines, Appendix G, Checklist
		Substantially degrade the existing visual character or quality of the site and its surroundings.	State CEQA Guidelines, Appendix G, Checklist
		Have a substantial adverse effect on a scenic vista.	
		Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.	

Table 6.2-1: Draft Thresholds of Significance for the SVRTC Project

EIS/EIR Section #	Environmental Issue	Threshold of Significance	Source(s)
4.18	Water Resources	Violate any water quality standards or waste discharge requirements.	State CEQA Guidelines, Appendix G, Checklist
		Substantially deplete water resources.	
		Create or contribute runoff water that would: • exceed the capacity of existing or planned storm water drainage systems or • provide substantial additional sources of polluted runoff.	
		Place structures within a 100-year flood hazard area that would impede or redirect flood flows.	
		Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam.	
		Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site.	
4.19.3.1	Construction: Transportation	Result in the long-term (one month or more) closure of a street, or the closure of a lane or other interference of traffic flow on any major traffic-carrying street, or the diversion of traffic through residential areas.	VTA
		Result in long-term (three months or more) disruption of parking or pedestrian access that is essential for continued operation of business.	
4.19.3.2	Air Quality	Fail to implement Best Management Practices for construction-related activities, as recommended by the BAAQMD.	BAAQMD
4.19.3.3	Biological Resources	Substantially affect sensitive species or habitats, including natural communities and federally protected wetlands.	VTA
4.19.3.5	Cultural Resources	Demolish or materially alter a significant historical, archaeological, or paleontological resource.	VTA
4.19.3.8	Hazardous Materials	Create a potential public or environmental health hazard or an undue potential risk for health-related accidents, or result in a safety hazard for people residing or working in the project area.	VTA
4.19.3.13	Hydrology and Water Quality	Substantially affect surface water or groundwater quality, or alter surface runoff rates thereby contributing to flooding or erosion hazards.	VTA
4.19.3.1	Land Use	Disrupt a business for a period of three months or more.	VTA
4.19.3.9	Noise and Vibration	Cause a substantial temporary or periodic increase in ambient noise levels.	VTA
4.19.3.11	Utilities	Disrupt utility service for a period of 24 hours or more.	VTA

Source: VTA, 2003.

CEQA does not require a discussion of socioeconomic effects except where they would result in physical changes, and states that social or economic effects shall not be treated as significant effects (see CEQA Guidelines Sections 15064(f) and 15131).

6.2.2 SIGNIFICANT EFFECTS AND MITIGATION

Table 6.2-2 presents each impact of the Baseline and BART alternatives as well as the MOS Scenarios and summarizes its level of significance under CEQA, the mitigation measures proposed to address the impact, and the level of significance under CEQA after mitigation is applied. Projects planned under the No-Action Alternative would undergo separate environmental review to define impacts. See Section 3.2.1.2 *Alternatives/Regional Transportation Plan Improvements through 2025* for a list of the No-Action Alternative projects. The BART Alternative and MOS scenarios would result in reduced traffic congestion and improved air quality, and would be more consistent with regional plans and policies to promote infill development and densification around transit stations than would the No-Action and Baseline alternatives.

Many impacts of the SVRTC alternatives would be addressed through design requirements and best management practices that are required by current design standards and guidelines or are already part of VTA's ordinary operating procedures. These design requirements and best management practices are identified in each respective environmental impact discussion in Chapter 4, *Environmental Analysis*. Also, Section 4.2, *Transportation and Transit*, evaluates impacts and addresses mitigation for traffic and transit impacts of the Baseline and BART alternatives as well as the MOS Scenarios. Table 1.5-1 in Chapter 1, *Executive Summary*, summarizes the impacts, design requirements and best management practices, and mitigation measures for every environmental impact identified in this document.

Because design requirements and best management practices are addressed in each environmental impact discussion and summarized in Table 1.5-1 and because CEQA focuses on mitigation measures required to reduce the impacts of a project to a level below significance, the design requirements and best management practices are not summarized again in this section. Table 6.2-2 therefore lists many impacts that would be significant under CEQA and would require mitigation if not for VTA's compliance with current design requirements and implementation of best management practices. These VTA actions would reduce these impacts to a less than significant level and therefore no additional mitigation is required.

Table 6.2-2 uses the following abbreviations to classify impacts by level of significance:

N = No impact

B = Beneficial impact (where impacts support local and/or regional goals)

LS = Less than significant impact (impact below threshold levels either before or after mitigation is applied)

S = Significant or potentially significant impact (before mitigation)

SU = Significant unavoidable impact (impact above threshold levels where feasible mitigation would not reduce to less than significant)

These definitions are also repeated on each page of the table.

Table 6.2-2: Summary of Impacts and Proposed Mitigation for the SVRTC Baseline and BART Alternatives

Impact	Significance	Mitigation	Significance After Mitigation
4.2 TRANSPORTATION AND TRANSIT			
TRANSIT			
Baseline Alternative		**Baseline Alternative**	
Beneficial impact on overall transit service.	B	None required.	B
BART Alternative/MOS Scenarios		**BART Alternative/MOS Scenarios**	
Beneficial impact on overall transit service – regional transit ridership would be increased.	B	None required.	B
PARKING			
Baseline Alternative		**Baseline Alternative**	
No parking impacts are projected.	N	None required.	N
BART Alternative/MOS Scenarios		**BART Alternative/MOS Scenarios**	
No parking impacts to BART Core System parking are projected.	N	None required.	N
PEDESTRIANS AND BICYCLES			
Baseline Alternative		**Baseline Alternative**	
No impacts are projected to the pedestrian or bicycle environment.	N	None required.	N
BART Alternative/MOS Scenarios		**BART Alternative/MOS Scenarios**	
No impacts are projected to the pedestrian or bicycle environment.	N	None required.	N
VEHICULAR TRAFFIC - FREEWAYS			
Baseline Alternative		**Baseline Alternative**	
Similar to year 2025 projections for No-Action Alternative	LS	None required.	LS
BART Alternative/MOS Scenarios		**BART Alternative/MOS Scenarios**	
BART has a beneficial effect on freeway traffic over all.	B	None required.	B
VEHICULAR TRAFFIC – INTERSECTIONS			
Year 2025 vehicle travel to proposed BART stations would cause degradation to below LOS D at the following intersections:			

Key

N = No Impact

B = Beneficial Impact (supportive of local and regional goals)

S = Significant or Potentially Significant Impact (before mitigation)

LS = Less than significant (below threshold levels either before or after mitigation)

SU = Significant/Unavoidable Impact (mitigation would not reduce to less-than-significant)

Table 6.2-2: Summary of Impacts and Proposed Mitigation for the SVRTC Baseline and BART Alternatives

Impact	Significance	Mitigation	Significance After Mitigation
Baseline Alternative		**Baseline Alternative**	
Similar to year 2025 projections for No-Action Alternative	LS	None required.	LS
BART Alternative/MOS Scenarios		**BART Alternative/MOS Scenarios**	
City of Fremont:		**City of Fremont:**	
No impacts at any intersections.	N	None required.	N
City of Milpitas:		**City of Milpitas:**	
Montague/Capitol BART Station without South Calaveras Future Station:		***Montague/Capitol BART Station without South Calaveras Future Station:***	
1. Great Mall Parkway and Abel Street.	S	1. No feasible mitigation.	SU
2. Milpitas Boulevard and Montague Expressway.	S	2. No feasible mitigation.	SU
3. Landess Avenue and Dempsey Road.	S	3. No feasible mitigation.	SU
Montague/Capitol BART Station with South Calaveras Future Station:		***Montague/Capitol BART Station with South Calaveras Future Station:***	
This option includes impacts to the intersections listed above as well as the intersections listed here:			
1. Calaveras Boulevard and Abel Street.	S	1. No feasible mitigation if station built.	SU
2. Calaveras Boulevard and Milpitas Boulevard.	S	2. No feasible mitigation if station built.	SU
3. Calaveras Boulevard and Park Victoria Drive.	S	3. Add a second southbound left-turn lane to improve level of service to LOS D.	LS
4. Milpitas Boulevard and Jacklin Road.	S	4. No feasible mitigation if station built.	SU
City of San Jose:		**City of San Jose:**	
Berryessa BART Station		***Berryessa BART Station***	
1. Hedding Street and 13th Street.	S	1. Add a second westbound left-turn lane to improve level of service to LOS D.	LS
	N	This intersection would not require mitigation with MOS-1E.	N
2. Oakland Road and Brokaw Road.	S	2. No feasible mitigation.	SU

Key

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SU = Significant Unavoidable Impact (mitigation would not reduce to less-than-significant)

Table 6.2-2: Summary of Impacts and Proposed Mitigation for the SVRTC Baseline and BART Alternatives

Impact	Significance	Mitigation	Significance After Mitigation
	N	This intersection would not require mitigation with MOS-1E.	N
1. Alum Rock BART Station		***2. Alum Rock BART Station***	
1. Julian Street and 28th Street.	S	1. Add exclusive northbound and eastbound right-turn lanes, exclusive southbound and eastbound left-turn lanes, and a second westbound left-turn lane to improve level of service to LOS C.	LS
	S	This intersection would only improve to LOS D with MOS-1E.	LS
2. Julian Street and US 101.	S	2. Add second westbound left-turn lane and exclusive eastbound right-turn lane to improve level of service to LOS B.	LS
3. McKee Road and King Road.	S	3. No feasible mitigation.	SU
4. San Antonio Street and King Road.	S	4. Add second southbound left-turn lane to improve level of service to LOS D.	LS
Diridon/Arena BART Station		***Diridon/Arena BART Station***	
1. Santa Clara Street and Autumn Street.	S	1. Convert northbound through lane to a shared through/left-turn lane to improve level of service to LOS D.	LS
2. San Carlos Street and Meridian Avenue.	S	2. Add an exclusive eastbound right-turn lane to improve level of service to LOS D.	LS
3. San Carlos Street and Lincoln Avenue.	S	3. Add a second northbound left-turn lane to improve level of service to LOS D.	LS
4. San Carlos Street and Bird Avenue.	S	4. Add second eastbound and westbound left-turn lanes to improve level of service to LOS E.	LS
5. San Carlos Street and Almaden Boulevard.	S	5. No feasible mitigation.	SU
6. San Carlos Street and Market Street.	S	6. No feasible mitigation.	SU
7. Park Avenue and Race Street.	S	7. No feasible mitigation.	SU

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Table 6.2-2: Summary of Impacts and Proposed Mitigation for the SVRTC Baseline and BART Alternatives

Impact	Significance	Mitigation	Significance After Mitigation
8. Almaden Boulevard and San Fernando Street.	S	8. Add a second southbound left-turn lane to improve level of service to LOS C.	LS
9. Auzerais Avenue and Delmas Avenue.	S	9. No feasible mitigation.	SU
City of Santa Clara:		**City of Santa Clara:**	
Santa Clara BART Station		***Santa Clara BART Station***	
1. El Camino Real and San Tomas Expressway.	S	1. No feasible mitigation.	SU
2. El Camino Real and Monroe Street.	S	2. Add third eastbound and westbound through lanes to improve level of service to LOS E.	LS
3. Lafayette Street and Central Expressway.	S	3. No feasible mitigation.	SU
4. Coleman Avenue and Brokaw Road.	S	4. Add a second eastbound left-turn lane to improve intersection level of service to LOS D.	LS
5. Central Expressway and De La Cruz Boulevard.	S	5. Add a third eastbound left-turn lane to improve level of service to LOS E.	LS
6. Homestead Road and Monroe Street.	S	6. No feasible mitigation.	SU
7. Monroe Street and San Tomas Expressway.	S	7. No feasible mitigation.	SU
4.3 AIR QUALITY			
REGIONAL AIR QUALITY IMPACTS			
Baseline Alternative		**Baseline Alternative**	
Criteria pollutant emissions compared to No-Action Alternative for year 2025 would decrease/increase by the following amounts: • CO -529.7 pounds per day (ppd) • ROG -9.0 ppd • NO_X +5.8 ppd • SO_2 -1.5 ppd • PM_{10} -14.3 ppd	B	None required.	B

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SU = Significant Unavoidable Impact (mitigation would not reduce to less-than-significant)

Table 6.2-2: Summary of Impacts and Proposed Mitigation for the SVRTC Baseline and BART Alternatives

Impact	Significance	Mitigation	Significance After Mitigation
BART Alternative/MOS Scenarios Criteria pollutant emissions compared to No-Action Alternative for year 2025 would decrease by the following amounts: • CO -4,507.1 ppd • ROG -607.0 ppd • NO_X -486.4 ppd • SO_X -12.2 ppd • PM_{10} -120.6 ppd There would be a minor increase in emissions with MOS-1E.	B	**BART Alternative/MOS Scenarios** None required.	B
MICROSCALE AIR QUALITY IMPACTS			
Baseline Alternative CO concentrations at intersections in 2025 would be similar to the No-Action Alternative.	LS	**Baseline Alternative** None required.	LS
BART Alternative/MOS Scenarios CO concentrations at intersections in 2025 would not exceed the 1-hour or 8-hour state CO standard.	LS	**BART Alternative/MOS Scenarios** None required.	LS
Proposed BART station parking structures would create CO concentrations, but none would exceed the 1-hour or 8-hour state standards.	LS	None required.	LS
4.4 BIOLOGICAL RESOURCES AND WETLANDS			
IMPACTS TO VEGETATION COMMUNITIES **Baseline Alternative** Impacts on up to 13 acres of non-native grassland affording suitable habitat for Congdon's tarplant and Western burrowing owl.	S	**Baseline Alternative** Project-specific conservation measures for impacts to biological communities affording habitat for Congdon's tarplant and Western burrowing owl will be formulated through consultations with USFWS and CDFG to minimize harm to the	LS

Key

N = No Impact
B = Beneficial Impact (supportive of local and regional goals)
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LS = Less than significant (below threshold levels either before or after mitigation)
SU = Significant/Unavoidable Impact (mitigation would not reduce to less-than-significant)

Table 6.2-2: Summary of Impacts and Proposed Mitigation for the SVRTC Baseline and BART Alternatives

Impact	Significance	Mitigation	Significance After Mitigation
		species, if pre-construction surveys determine that they are present at the time (see Section 4.4.3.5, *Mitigation Measures,* and Section 4.19.5.3, *Mitigation Measures for Biological Resources and Wetlands Impacts* for more details).	
Above impact includes suitable habitat for loggerhead shrike, but impact would not be substantially adverse.	LS	None required.	LS
BART Alternative/MOS Scenarios		**BART Alternative/MOS Scenarios**	
Impacts on up to 14.9 acres of non-native grassland affording suitable habitat for Congdon's tarplant and Western burrowing owl.	S	Project-specific conservation measures for impacts to biological communities affording habitat for special status species will be formulated through consultations with USFWS, ACOE, and CDFG to minimize harm to the species, if pre-construction surveys determine that they are present at the time (see Section 4.4.3.5, *Mitigation Measures,* and Section 4.19.5.3, *Mitigation Measures for Biological Resources and Wetlands Impacts* for more details).	LS
Above impact includes suitable habitat for loggerhead shrike, but impact would not be substantially adverse.	LS	None required.	LS
Impacts on Seasonal and Freshwater Marsh of 0.128 acres without the South Calaveras Future Station.	S	Project-specific mitigation measures to be stipulated with ACOE to achieve no net loss of wetlands (see Section 4.4.3.5, *Mitigation Measures* for more details).	LS
Impacts on Seasonal and Freshwater Marsh of 1.243 acres with the South Calaveras Future Station.	S	Project-specific mitigation measures to be stipulated with ACOE to achieve no net loss of wetlands (see Section 4.4.3.5, Mitigation Measures for more details).	LS
Impacts on up to 2.6 acres of Central Coast cottonwood-sycamore riparian forest.	S	Impacts will be avoided or minimized by techniques to avoid encroachments into riparian areas to the maximum extent practicable and by use of additional buffer areas along riparian corridors (see Section 4.4.3.5, *Mitigation Measures* for more details).	LS

Key

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LS = Less than Significant (below threshold levels either before or after mitigation)
SU = Significant Unavoidable Impact (mitigation would not reduce to less-than-significant)

Table 6.2-2: Summary of Impacts and Proposed Mitigation for the SVRTC Baseline and BART Alternatives

Impact	Significance	Mitigation	Significance After Mitigation
IMPACTS TO WETLANDS AND OTHER WATERS OF THE U.S.			
Baseline Alternative		**Baseline Alternative**	
No impacts are projected.	N	None required.	N
BART Alternative/MOS Scenarios		**BART Alternative/MOS Scenarios**	
Wetlands--Projected impacts are as follows: • 1.115 acres affected by the relocation of Wrigley Creek for South Calaveras Future Station. • Fill in 0.1128 acres of unnamed wetlands in the vicinity of Locomotive Wye Milpitas Option.	S	Project-specific mitigation measures to be stipulated with ACOE to achieve no net loss of wetlands (see Section 4.4.3.5, *Mitigation Measures* for more details).	LS
Other Waters of the U.S.--Projected impacts are as follows: • 0.008 acres affected by extension of existing culvert or construction of a bridge at Agua Caliente Creek under the East of Rail Right-of-Way (ROW) Option. This impact would be reduced to 0.002 acres under the Rail ROW Option. • 0.033 acres affected by extension of existing culvert under railroad corridor at Toroges Creek. • 0.009 acres affected by extension of existing culvert across railroad corridor at Scott Creek.	S	Project-specific mitigation measures for impacts to other jurisdictional areas will be formulated through consultation with ACOE (see Section 4.4.3.5, *Mitigation Measures* for more details).	LS
IMPACTS TO SPECIAL STATUS SPECIES			
Baseline Alternative		**Baseline Alternative**	
Nesting special-status and non-special-status raptors may be disturbed by construction-related activities adjacent non-native grasslands located in the SVRTC.	S	Project-specific mitigation measures have been proposed to minimize construction-related impacts to nesting raptors (see Section 4.4.3.5, *Mitigation Measures* for more details).	LS
Nesting swallows may be disturbed by construction-related activities near bridge crossings located in the SVRTC.	S	Project-specific mitigation measures have been proposed to minimize construction-related impacts to nesting swallows (see Section 4.4.3.5, *Mitigation Measures* for more details).	LS

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Table 6.2-2: Summary of Impacts and Proposed Mitigation for the SVRTC Baseline and BART Alternatives

Impact	Significance	Mitigation	Significance After Mitigation
Roosting bats may be disturbed by construction-related activities near bridge crossings located in the SVRTC.	S	Project-specific mitigation measures have been proposed to minimize construction-related impacts to roosting bats (see Section 4.4.3.5, *Mitigation Measures* for more details).	LS
BART Alternative/MOS Scenarios		**BART Alternative/MOS Scenarios**	
Up to 14.9 acres of suitable habitat for Congdon's tarplant and Western burrowing owl would be affected. This habitat is also potentially suitable for alkali milkvetch and diamond-petaled California poppy, but best available information and judgment conclude that these plants are not present in the SVRTC.	S	Project-specific conservation measures will be formulated through consultation with USFWS and CDFG, if pre-construction surveys determine that they are present at the time (see Section 4.4.3.5, *Mitigation Measures* for more details).	LS
Suboptimal habitat for Central Valley steelhead and fall/late fall run Chinook salmon may be affected by construction of: • Parking Structure Southwest and Northeast options at the Berryessa Station. • Railroad/28th Street Option of the Alum Rock Station.	S	Project-specific conservation measures will be formulated through consultation with NOAA Fisheries to minimize harm to species (see Section 4.4.3.5, *Mitigation Measures* for more details).	LS
Habitat for California red-legged frogs may be affected by construction of: • Parking Structure Southwest and Northeast options at the Berryessa Station near Upper Penitencia Creek • Railroad/28th Street Option of the Alum Rock Station near Lower Silver Creek as well as construction-related activities near the Guadalupe River and Coyote Creek.	S	Project-specific mitigation measures have been proposed to minimize construction-related impacts to California red-legged frogs (see Section 4.4.3.5, *Mitigation Measures* for more details).	LS
Habitat for southwestern pond turtles may be affected by construction of: • Parking Structure Southwest and Northeast options at the Berryessa Station near Upper Penitencia Creek • Railroad/28th Street Option of the Alum Rock Station near	S	Project-specific mitigation measures have been proposed to minimize construction-related impacts to southwestern pond turtles (see Section 4.4.3.5, *Mitigation Measures* for more details).	LS

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Table 6.2-2: Summary of Impacts and Proposed Mitigation for the SVRTC Baseline and BART Alternatives

Impact	Significance	Mitigation	Significance After Mitigation
Lower Silver Creek as well as construction-related activities near the Guadalupe River and Coyote Creek.			
Nesting special-status and non-special-status raptors may be disturbed by construction-related activities adjacent to riparian habitat along the Guadalupe River, Coyote Creek, Upper Penitencia Creek, and Berryessa Creek as well as near non-native grasslands.	S	Project-specific mitigation measures have been proposed to minimize construction-related impacts to nesting raptors (see Section 4.4.3.5, *Mitigation Measures* for more details).	LS
Nesting swallows may be disturbed by construction-related activities near bridge crossing and near riparian habitat along the Guadalupe River, Coyote Creek, Upper Penitencia Creek, and Berryessa Creek.	S	Project-specific mitigation measures have been proposed to minimize construction-related impacts to nesting swallows (see Section 4.4.3.5, *Mitigation Measures* for more details).	LS
Roosting bats may be disturbed by construction-related activities near bridge crossing and near riparian habitat along the Guadalupe River, Coyote Creek, Upper Penitencia Creek, and Berryessa Creek.	S	Project-specific mitigation measures have been proposed to minimize construction-related impacts to roosting bats (see Section 4.4.3.5, *Mitigation Measures* for more details).	LS
Up to 11.4 acres of habitat for the Western burrowing owl would be affected as follows: • At the Sno-boy site by the construction of the replacement rail-truck tank car transfer facility. • At the Locomotive Wye Fremont Option site by the construction of the tracks. • By construction of the proposed TPSS #5.	S	Project-specific mitigation measures will be formulated through consultation with USFWS and CDFG to minimize harm to species, if pre-construction surveys determine that they are present at the time (see Section 4.4.3.5, *Mitigation Measures* for more details).	LS
Above impact includes suitable habitat for loggerhead shrike, but impact would not be substantially adverse.	LS	None required.	LS
4.5 COMMUNITY SERVICES AND FACILITIES			
Baseline Alternative		**Baseline Alternative**	
Express bus service from the Warm Springs BART Station to Downtown San Jose would provide direct benefits for 40 community facilities within the corridor.	B	None required.	B

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Table 6.2-2: Summary of Impacts and Proposed Mitigation for the SVRTC Baseline and BART Alternatives

Impact	Significance	Mitigation	Significance After Mitigation
BART Alternative/MOS Scenarios		**BART Alternative/MOS Scenarios**	
51 community facilities in the SVRTC would realize direct benefits of improved transit access. With MOS-1E, the number of community facilities would be reduced within a ½ mile radius of the Berryessa and Civic Plaza/SJSU Stations.	B	None required.	B
A 25' X 100' wide strip of land that has been dedicated by the Parc Metropolitan Development to the City of Milpitas for a public park would be used for the alignment just south of the UPRR Milpitas Yard north of the Great Mall.	S	VTA will continue to work with the City of Milpitas to specify measures to mitigate impacts on the Parc Metropolitan parkland. Combination of following measures to be implemented: • Replace acquired portion of property immediately adjacent to parkland site; • Expand a nearby park; • Provide additional amenities at the affected parkland site; and/or • Assist in funding a pedestrian crossing over the railroad corridor that would link and facilitate access to the affected park, possibly at Curtis Avenue.	LS
4.6 CULTURAL AND HISTORIC RESOURCES			
ARCHAEOLOGICAL RESOURCES			
Baseline Alternative		**Baseline Alternative**	
Approximately 1.3 miles of the Warm Springs Station to I-880 segment and 0.6 miles of the Montague Expressway to I-880 segment would affect moderately sensitive land, based on geomorphic context.	S	Subsurface trenching will be conducted in select areas along the Warm Springs Station to I-880 connector and along the Montague Expressway to I-880 connector. If a significant, buried archaeological deposit is encountered, subsequent controlled subsurface excavations will be completed.	LS
BART Alternative/MOS Scenarios		**BART Alternative/MOS Scenarios**	
Archeological materials are expected to occur in numerous locations within the Archeological APE along the proposed corridor. With MOS-	S	A Memorandum of Understanding (MOA) and supporting Cultural Resources Treatment Plan (CRTP) will be developed in	LS

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Table 6.2-2: Summary of Impacts and Proposed Mitigation for the SVRTC Baseline and BART Alternatives

Impact	Significance	Mitigation	Significance After Mitigation
1E, three archaeological sites would be avoided at the Berryessa Station.		consultation with the Native American community, historical organizations, appropriate city and county historic preservation bodies, the ACHP, and State Historic Preservation Office (SHPO) (see Section 4.6.6.1, *Archaeological Resources Mitigation* for more details).	
HISTORIC ARCHITECTURAL RESOURCES			
Baseline Alternative		**Baseline Alternative**	
No impacts on historic resources.	N	None required.	N
BART Alternative/MOS Scenarios		**BART Alternative/MOS Scenarios**	
San Jose Downtown Commercial Historic District may be adversely affected by station entrance/elevator/bicycle storage/ventilation shaft options of Market Street Station Option M-1A.	S	Project-specific mitigation measures to be established in Memorandum of Agreement (MOA) and executed among VTA, FTA, SHPO, and ACHP (see Section 4.6.6.2, *Historic Architectural Resources Mitigation* for more details).	LS
The **Santa Clara Southern Pacific Depot** may be adversely affected by the Aerial Walkway South Option pedestrian linkage of BART Santa Clara Station.	S	Project-specific mitigation measures to be established in Memorandum of Agreement (MOA) and executed among VTA, FTA, SHPO, and ACHP (see Section 4.6.6.2, *Historic Architectural Resources Mitigation* for more details).	LS
The **Santa Clara Southern Pacific Depot** may be adversely affected by the Underground Walkway Option pedestrian linkage of BART Santa Clara Station.	S	Project-specific mitigation measures to be established in Memorandum of Agreement (MOA) and executed among VTA, FTA, SHPO, and ACHP (see Section 4.6.6.2, *Historic Architectural Resources Mitigation* for more details).	LS
4.7 ELECTROMAGNETIC FIELDS			
Baseline or BART Alternatives/MOS Scenarios		**Baseline or BART Alternatives/MOS Scenarios**	
Evidence suggests that there would be no demonstrable health risks from exposure to EMF with the Baseline Alternative, the BART Alternative, or the MOS scenarios.	LS	None required.	LS

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Table 6.2-2: Summary of Impacts and Proposed Mitigation for the SVRTC Baseline and BART Alternatives

Impact	Significance	Mitigation	Significance After Mitigation
4.8 ENERGY			
Baseline Alternative Net annual energy savings of 90 billion BTUs over the No-Action Alternative are projected under this alternative.	B	**Baseline Alternative** None required.	B
BART Alternative/MOS Scenarios Net annual energy savings of 944 billion BTUs over the No-Action Alternative with the BART Alternative. With MOS-1E, 55 billion additional BTUs than the BART Alternative would be consumed.	B	**BART Alternative/MOS Scenarios** None required.	B
4.9 ENVIRONMENTAL JUSTICE			
Baseline Alternative Improvements in transit service would benefit low-income residents and businesses.	B	**Baseline Alternative** None required.	B
BART Alternative/MOS Scenarios No disproportionately high or adverse effects on minority or low-income populations. Future bus route configuration, including "Valley Express buses," would be refined to better integrate with the proposed BART stations and service to maximize connectivity and accessibility. As a result, bus ridership levels increase when compared to the No-Action Alternative, even though the bus fleet size is smaller. Improvements in access and connectivity to transit service would benefit low-income residents and businesses.	B	**BART Alternative/MOS Scenarios** None required.	B
4.10 GEOLOGY, SOILS, AND SEISMICITY			
Baseline and BART Alternatives/MOS Scenarios Strong ground shaking is projected to be the major geologic hazard due to active faults in proximity of the corridor. Potential hazards related to ground motion would be minimized by structural design. No known active faults cross the SVRTC project alignment.	LS	**Baseline and BART Alternatives/MOS Scenarios** None required.	LS

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Table 6.2-2: Summary of Impacts and Proposed Mitigation for the SVRTC Baseline and BART Alternatives

Impact	Significance	Mitigation	Significance After Mitigation
4.11 HAZARDOUS MATERIALS			
Baseline Alternative		**Baseline Alternative**	
Soil and Groundwater Contamination Impacts Within ¼-mile of the three busway connectors proposed in the Baseline Alternative, there are four release sites that have high potential for affecting soil or groundwater beneath the busways. Transit riders, maintenance workers, or local populations would experience little or no exposure to contaminated soil or contaminated groundwater.	LS	None required.	LS
Surface Water Contamination Impacts Net impact to surface water quality would be beneficial when compared to runoff for automobiles. Small amounts of hazardous materials may be used in minor maintenance activities.	B	None required.	B
Impacts on Hazardous Materials Use or Usage Patterns Very small amounts of hazardous materials may be used in minor maintenance activities. The Baseline Alternative would not affect the amount or frequency of hazardous materials transport or expose transit users or residents in the vicinity to an increased risk of accidents involving transport of hazardous materials.	LS	None required.	LS
BART Alternative/MOS Scenarios		**BART Alternative/MOS Scenarios**	
Soil and Groundwater Contamination Impacts From those release sites found within ¼-mile of the BART alignment, 21 sites have either known contamination extending beneath the project corridor or a high potential for contamination affecting soil or groundwater beneath the project corridor. Of these 21 sites, 11 have received regulatory closures (or the monitoring program for the sites have been completed); case closure does not ensure that the project alignment will not be affected by residual contaminants from these sites. Soil contamination is possible during dewatering of tracks in tunnels and retained cuts, due to existing water contamination.	S	Phase Two site investigations will determine whether environmental contamination is present that could affect construction or maintenance of facilities. Additional site-specific information will be collected, and regulatory agency files will be reviewed for sites where excavation would occur (see Section 4.11.3.3, *Mitigation Measures* for more details).	LS

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Table 6.2-2: Summary of Impacts and Proposed Mitigation for the SVRTC Baseline and BART Alternatives

Impact	Significance	Mitigation	Significance After Mitigation
Surface Water Contamination Impacts Net impact to surface water quality would be beneficial compared to that of automobiles and buses replaced.	B	None required.	B
Impacts on Hazardous Materials Use or Usage Patterns Minor amounts of hazardous maintenance chemicals may be released on tracks or result from drips as with existing sections of BART operations.	LS	None required.	LS
4.12 LAND USE			
Baseline Alternative		**Baseline Alternative**	
Consistent with local planning and existing transportation uses.	LS	None required.	LS
Would not physically or psychologically divide established communities.	N	None required.	N
BART Alternative/MOS Scenarios		**BART Alternative/MOS Scenarios**	
Consistent with local and regional plans and policies as well as existing transportation uses. Would stimulate transit-oriented higher density development encouraged in Fremont, Milpitas, San Jose, and Santa Clara general plans. With the deferral of the Berryessa and Civic Plaza/SJSU Stations, MOS-1E would not be as consistent as the "Full Build" BART Alternative.	B	None required.	B
Would not physically or psychologically divide established communities.	N	None required.	N
4.13 NOISE AND VIBRATION			
NOISE IMPACTS			
Baseline Alternative		**Baseline Alternative**	
Noise impact projected at two residences near the proposed Warm Springs BART Station to I-880 busway connectors.	S	Noise impacts mitigated by 10-foot noise wall constructed on the elevated busway (see Section 4.13.3.3 *Mitigation Measures* for Noise Impacts for more details).	LS

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Table 6.2-2: Summary of Impacts and Proposed Mitigation for the SVRTC Baseline and BART Alternatives

Impact	Significance	Mitigation	Significance After Mitigation
BART Alternative/MOS Scenarios From 127 to 192 residences would experience moderate or severe noise impacts before mitigation under FTA Noise Impact Criteria and 96 to 142 under the BART criteria depending on design option.	S	**BART Alternative/MOS Scenarios** Construct sound walls where impacts are projected (see Section 4.13.3.3, *Mitigation Measures* for Noise Impacts for more details).	LS
VIBRATION IMPACTS **Baseline Alternative** No vibration impacts are projected under this alternative. **BART Alternative/MOS Scenarios** Number of impacts to residences/hotels ranges from 305 to 426 with the FTA criteria and 344 to 484 with the BART criteria depending on design options.	 N S	 **Baseline Alternative** None required. **BART Alternative/MOS Scenarios** Design will incorporate a combination of vibration control track systems (e.g., ballast mats, shredded tire underlay, resilient fasteners, resiliently supported ties, etc.). However even with the mitigation proposed, 12 residences located north of Berryessa Road would be potentially exposed to vibration levels exceeding FTA and/or BART criteria (see Section 4.13.5.3, *Mitigation Measures* for Vibration Impacts for more details).	 N SU
4.14 SECURITY AND SYSTEM SAFETY			
Baseline and BART Alternatives/MOS Scenarios No impacts are projected under the Baseline or BART alternatives/MOS Scenarios.	N	**Baseline and BART Alternatives/MOS Scenarios** None required.	N
4.15 SOCIOECONOMICS			
POPULATION, HOUSING, AND EMPLOYMENT **Baseline Alternative** The Baseline Alternative would result in a more gradual build out of the general plans of Milpitas, San Jose, an Santa Clara since they are based on BART facilities being in place. **BART Alternative/MOS Scenarios** The BART Alternative would provide improved transportation service to	 N N	 **Baseline Alternative** None required. **BART Alternative/MOS Scenarios** None required.	 N N

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Table 6.2-2: Summary of Impacts and Proposed Mitigation for the SVRTC Baseline and BART Alternatives

Impact	Significance	Mitigation	Significance After Mitigation
people living and working in the SVRTC consistent with local jurisdiction general plans, and, therefore, consistent with ABAG projections for population, housing, and employment.			
RESIDENTIAL AND NON-RESIDENTIAL RELOCATION/TUNNEL EASEMENT IMPACTS			
Baseline Alternative		**Baseline Alternative**	
The I-680 to Planned BART Warm Springs Station Aerial Busway Connector would require relocation of one industrial and one retail business along with other minor ROW takes.	LS	None required.	LS
BART Alternative/MOS Scenarios		**BART Alternative/MOS Scenarios**	
46 to 101 businesses and 1 to 5 residential units would require relocation depending on alignment and station options selected. In addition, up to 400 flea market vendor stalls, 1,025 rental storage tenants, two advertising signs, and one utility facility would require relocation along with other minor ROW takes. With MOS-1E, displacement of as many as 11 light industrial businesses, up to 400 flea market vendors, and 3-5 restaurants could be deferred.	LS	None required.	LS
4.16 UTILITIES			
Baseline Alternative		**Baseline Alternative**	
No major utility impacts are anticipated.	LS	None required.	LS
BART Alternative/MOS Scenarios		**BART Alternative/MOS Scenarios**	
Relocation of some existing utilities primarily due to cut-and-cover excavation.	LS	None required.	LS
4.17 VISUAL QUALITY AND AESTHETICS			
Baseline Alternative		**Baseline Alternative**	
The busway connectors would be generally consistent with existing views of similar infrastructure and development in this area.	LS	None required.	LS

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Table 6.2-2: Summary of Impacts and Proposed Mitigation for the SVRTC Baseline and BART Alternatives

Impact	Significance	Mitigation	Significance After Mitigation
BART Alternative/MOS Scenarios		**BART Alternative/MOS Scenarios**	
The alignment crosses through urbanized area, including existing multi-story residential, commercial, and industrial development. At-grade or elevated segments of the alignment would be consistent with the existing visual quality of the areas surrounding the corridor, and no scenic views would be obscured.	LS	None required.	LS
Built facilities would be similar to the existing urban environment and would not degrade the existing SVRTC visual character or have adverse effects on scenic vistas or scenic resources.	LS	None required.	LS
BART stations and parking structures would create new sources of nighttime light, however, lighting would be designed to focus on the BART facilities and ensure that the stations and parking structures would not be vivid at night nor affect the intactness or unity of nighttime views. MOS-1E would defer the Berryessa Station, parking structure and other support facilities and therefore, the visual character would not change beyond the trackway improvements.	LS	None required.	LS
4.18 WATER RESOURCES, WATER QUALITY, AND FLOODPLAINS			
IMPACTS TO GROUNDWATER RESOURCES			
Baseline Alternative		**Baseline Alternative**	
No long-term effect on groundwater quality.	N	None required.	N
BART Alternative/MOS Scenarios		**BART Alternative/MOS Scenarios**	
Retained wall cuts along BART alignment and at downtown stations may divert normal flow of groundwater and cause mounding of groundwater up-gradient of obstacles. Potential for spread of contaminated groundwater. However, the interception will not result in detectable changes to overall groundwater availability or total subsurface water movement. Therefore, an adverse groundwater impact would not result from this alternative.	LS	None required.	LS

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Table 6.2-2: Summary of Impacts and Proposed Mitigation for the SVRTC Baseline and BART Alternatives

Impact	Significance	Mitigation	Significance After Mitigation
Similarly, groundwater impacts from the MOS scenarios would be not adverse since no major excavation activities are planned.	N	None required.	N
IMPACTS TO SURFACE WATER RESOURCES AND WATER QUALITY **Baseline and BART Alternative/MOS Scenarios** Both the Baseline and BART alternatives and all associated design options, as well as the MOS scenarios would involve new areas of impervious surfaces in locations that are presently undeveloped or partially developed. The amount of new impervious surfaces would not produce runoff volumes that would exceed the capacity of existing or planned drainage systems; therefore, impacts to local drainage systems would not be adverse.	LS	**Baseline and BART Alternative/MOS Scenarios** None required.	LS
IMPACTS TO FLOODPLAINS **Baseline Alternative** All facilities are outside the 100-year floodplain. **BART Alternative/MOS Scenarios** Alignment would encroach into 100-year floodplains; most of this area is within existing operational railroad right-of-way.	 N LS	 **Baseline Alternative** None required. **BART Alternative/MOS Scenarios** None required.	 N LS
4.19 CONSTRUCTION IMPACTS			
TRANSPORTATION AND TRANSIT **Baseline Alternative** Temporary vehicular traffic disruptions by construction equipment and traffic at Warm Springs BART Station and I-880/Montague connection. **BART Alternative/MOS Scenarios** Temporary vehicular traffic disruptions by construction equipment and traffic with full and partial street closures for cut-and-cover construction and grade separations. With MOS-1E, construction of the	 LS S	 **Baseline Alternative** None required. **BART Alternative/MOS Scenarios** Temporary full closures and long-term partial street closures for cut-and-cover construction and grade separations would cause unavoidable adverse traffic impacts during construction.	 LS SU

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Table 6.2-2: Summary of Impacts and Proposed Mitigation for the SVRTC Baseline and BART Alternatives

Impact	Significance	Mitigation	Significance After Mitigation
Berryessa Station, parking structure, and support facilities would be deferred temporarily reducing construction traffic impacts at this location.		(see Section 4.19.3.1, *Vehicular Traffic Impacts*).	
Potential temporary impacts to light rail and bus services.	LS	None required.	LS
Minor temporary inconvenience to local residents and businesses from additional parking demand. During cut-and-cover construction, street parking would be disrupted.	S	None required as the Design Requirements and Best Management Practices will reduce this impact.	LS
Construction areas could affect access by pedestrians and bicyclists to business and residences adjacent to the construction areas.	S	None required as the Design Requirements and Best Management Practices will reduce this impact.	LS
AIR QUALITY			
Baseline Alternative		**Baseline Alternative**	
Temporary emissions of carbon monoxide (CO), reactive organic gases, nitrogen oxides, and dust (PM_{10}).	LS	None required.	LS
BART Alternative/MOS Scenarios		**BART Alternative/MOS Scenarios**	
Temporary emissions of CO, reactive organic gases, nitrogen oxides, and dust (PM_{10}). With MOS-1E, construction of the Berryessa Station, parking structure, and support facilities would be deferred temporarily reducing construction air quality impacts at this location.	LS	None required.	LS
BIOLOGICAL RESOURCES AND WETLANDS			
Baseline Alternative		**Baseline Alternative**	
Temporary disturbance of suitable habitat for burrowing owl and suitable habitat for Congdon's tarplant.	S	USFWS, NOAA Fisheries, ACOE, and CDFG will be consulted regarding potential impacts of the SVRTC project and appropriate construction-phase mitigation measures. (see Section 4.19.5.3, *Mitigation Measures for Biological Resources and Wetlands Impacts* for more details).	LS
Above impact includes suitable habitat for loggerhead shrike, but impact would not be substantially adverse.	LS	None required.	LS
Construction activities associated with the I-680 to Warm Springs and	S	Conducting pre-construction surveys for nesting special-status	LS

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Table 6.2-2: Summary of Impacts and Proposed Mitigation for the SVRTC Baseline and BART Alternatives

Impact	Significance	Mitigation	Significance After Mitigation
Warm Springs to I-880 busway connectors have the potential to affect nesting raptors in trees located near non-native grasslands. Construction activities and noise could cause nesting special-status and non-special-status raptors to abandon their nests causing egg failure or hatchling death.		and non-special-status raptors within 0.25 mile of the SVRTC during the nesting season (generally February through August); Delaying construction activities within specified distances from active raptor nests if it is determined that construction would disrupt nesting behavior until raptors are no longer nesting or the fledglings are self-sufficient.	
Bridge crossings located within the SVRTC could provide nesting habitat for swallows and roosting habitat for bats. Construction-related activities near bridge crossings could cause nesting swallows to abandon their nests, causing egg failure or hatchling death, or cause roosting bats to leave prematurely.	S	Conducting pre-construction surveys for nesting swallows during the nesting season (generally March through August) and for roosting bats under bridge structures and in riparian habitat located within the SVRTC; Delaying construction activities within specified distances from roosting bats and occupied swallow nests if it is determined that construction would disrupt the bats or until swallows are no longer nesting or the fledglings are self-sufficient.	LS
BART Alternative/MOS Scenarios		**BART Alternative/MOS Scenarios**	
Temporary disturbance of suitable habitat for burrowing owl.	S	Habitat will be enhanced or restored to pre-construction conditions, to the maximum extent practicable (see Section 4.19.5.3, *Mitigation Measures for Biological Resources and Wetlands Impacts* for more details).	LS
Temporary disturbance of suitable habitat for Congdon's tarplant, diamond-petaled California poppy, and alkali milkvetch.	S	Habitat will be enhanced or restored to pre-construction conditions, to the maximum extent practicable (see Section 4.19.5.3, *Mitigation Measures for Biological Resources and Wetlands Impacts* for more details).	LS
Possible encroachment on riparian corridors.	S	Impacts will be avoided or minimized by techniques to avoid encroachments into riparian areas to the maximum extent practicable and by use of additional buffer areas along riparian corridors (see Section 4.19.5.3, *Mitigation Measures for Biological Resources and Wetlands Impacts* for more details).	LS
Temporary disturbance of suitable habitat for loggerhead shrike.	S	None required as the Design Requirements and Best Management Practices will reduce this impact.	LS

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Impact	Significance	Mitigation	Significance After Mitigation
Construction activities with the replacement rail-truck tank car transfer facility at the Sno-boy site, the South Calaveras Future Station, or the Locomotive Wye Fremont Option have the potential to affect nesting special-status and non-special-status raptors in trees located near the non-native grasslands. Construction activities and noise could cause nesting raptors to abandon their nest causing egg failure of hatchling death.	S	Conducting pre-construction surveys for nesting special-status and non-special-status raptors within 0.25 mile of the SVRTC during the nesting season (generally February through August); Delaying construction activities within specified distances from active raptor nests if it is determined that construction would disrupt nesting behavior until raptors are no longer nesting or the fledglings are self-sufficient.	LS
Construction-related activities at the Guadalupe River, Coyote Creek, Upper Penitencia Creek, and Lower Silver Creek have the potential to affect California red-legged frogs and their habitat. In-stream work could disturb red-legged frogs occurring in the waterways or construction activities on the banks of these waterways could disturb aestivating California red-legged.	S	Conducting pre-construction surveys for California red-legged frogs prior to any construction activities occurring at Guadalupe River, Coyote Creek, Upper Penitencia Creek, and Lower Silver Creek; Having a USFWS permitted biologist relocate California red-legged frogs encountered in the work area. Installing exclusionary fencing to prevent California red-legged frogs from re-entering the work area.	LS
Construction-related activities at the Guadalupe River, Coyote Creek, Upper Penitencia Creek, and Lower Silver Creek have the potential to impact southwestern pond turtles. In-stream work could disturb southwestern pond turtles occurring in the waterways or construction activities on the banks of these waterways could disturb nesting habitat.	S	Conducting pre-construction surveys for southwestern pond turtles prior to any construction activities occurring at Guadalupe River, Coyote Creek, Upper Penitencia Creek, and Lower Silver Creek; Having a qualified biologist relocate southwestern pond turtles encountered from the work area. Installing exclusionary fencing to prevent southwestern pond turtles from re-entering the work area.	LS
Encroachment on the riparian forests could affect nesting special-status and non-special-status raptors, nesting swallows, and roosting bats.	S	Conducting pre-construction surveys for nesting special-status and non-special-status raptors within 0.25 mile of the SVRTC during the nesting season (generally February through August); Delaying construction activities within specified distances from active raptor nests if it is determined that construction would disrupt nesting behavior until raptors are no longer nesting or the fledglings are self-sufficient; Conducting pre-construction surveys for nesting swallows	LS

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Table 6.2-2: Summary of Impacts and Proposed Mitigation for the SVRTC Baseline and BART Alternatives

Impact	Significance	Mitigation	Significance After Mitigation
		during the nesting season (generally March through August) and roosting bats in riparian habitat within the SVRTC; Delaying construction activities within specified distances from roosting bats and occupied swallow nests if it is determined that construction would disrupt bats or until swallows are no longer nesting or the fledglings are self-sufficient.	
Bridge crossings located within the SVRTC could provide nesting habitat for swallows and roosting habitat for bats. Construction-related activities near bridge crossings could cause nesting swallows to abandon their nests, causing egg failure or hatchling death, or cause roosting bats to leave.	S	Conducting pre-construction surveys for nesting swallows during the nesting season (generally March through August) and roosting bats under bridge structures and in riparian habitat located within the SVRTC; Delaying construction activities within specified distances from roosting bats and occupied swallow nests if it is determined that construction would disrupt bats or until swallows are no longer nesting or the fledglings are self-sufficient.	LS
Temporary impacts to 0.093 acres of wetlands/other waters of the U.S.	S	Temporarily affected wetlands and other waters of the U.S. will be enhanced or restored to pre-construction conditions, to the maximum extent practicable (see Section 4.19.5.3, *Mitigation Measures for Biological Resources and Wetlands Impacts* for more details).	LS
COMMUNITY FACILITIES, SCHOOLS, AND RELIGIOUS INSTITUTIONS			
Baseline Alternative		**Baseline Alternative**	
No impacts to existing facilities and services.	N	None required.	N
BART Alternative/MOS Scenarios		**BART Alternative/MOS Scen**arios	
Emergency vehicles would need to observe any short-term street closures and temporary construction detours.	LS	None required.	LS

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Table 6.2-2: Summary of Impacts and Proposed Mitigation for the SVRTC Baseline and BART Alternatives

Impact	Significance	Mitigation	Significance After Mitigation
CULTURAL AND HISTORIC RESOURCES			
Baseline Alternative		**Baseline Alternative**	
No impact is projected.	N	None required.	N
BART Alternative/MOS Scenarios		**BART Alternative/MOS Scenarios**	
Construction may disturb cultural resources.	S	Develop and implement a CRTP (see Section 4.19.7.3, *Mitigation Measures for Archaeological Resources* for more details).	LS
No short-term construction effects are projected for historic resources.	N	None required.	N
ELECTROMAGNETIC FIELDS			
Baseline and BART Alternatives/MOS Scenarios		**Baseline and BART Alternatives/MOS Scenarios**	
No construction phase impacts are projected.	N	None required.	N
GEOLOGY, SOILS, AND SEISMICITY			
Baseline Alternative		**Baseline Alternative**	
Cuts and new embankments may affect slope stability.	S	None required as the Design Requirements and Best Management Practices will reduce this impact.	LS
New structural loads could produce settlement impacts.	S	None required.	LS
BART Alternative/MOS Scenarios		**BART Alternative/MOS Scenarios**	
Cuts and new embankments may affect slope stability.	S	None required as the Design Requirements and Best Management Practices will reduce this impact.	LS
New structural loads, basement excavation, or tunnel bore could produce settlement impacts.	S	None required as the Design Requirements and Best Management Practices will reduce this impact.	LS
HAZARDOUS MATERIALS			
Impacts Due to Soil Contamination			
Baseline Alternative		**Baseline Alternative**	
A small volume of waste soil would be generated with a limited potential for contaminated soil exposure to workers and the	LS	During final design, a Phase II site assessment will be prepared along with remediation requirements per local, state, and	LS

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Table 6.2-2: Summary of Impacts and Proposed Mitigation for the SVRTC Baseline and BART Alternatives

Impact	Significance	Mitigation	Significance After Mitigation
surrounding environment and population. Dust laden with low volatility chemicals may be released into ambient air by earthmoving activities. Volatile organic compounds (VOCs) may evaporate when exposed to ambient air by excavation.		federal regulations. (see Section 4.19.10.3, *Mitigation Measures for Hazardous Materials Impacts* for more details).	
BART Alternative/MOS Scenarios		**BART Alternative/MOS Scenarios**	
Contaminated soil is likely to be encountered during the construction of retained cuts. Subway tunneling would generate a larger volume of soil containing lower contamination levels.	LS	During final design, a Phase II site assessment will be prepared along with remediation requirements per local, state, and federal regulations. (see Section 4.19.10.3, *Mitigation Measures for Hazardous Materials Impacts* for more details).	LS
Impacts Due to Structure Demolition			
Baseline Alternative		**Baseline Alternative**	
Structures to be demolished or renovated would likely contain asbestos, lead, and/or polychlorinated-biphenyls (PCBs).	N	Evaluate building materials for asbestos, lead, and PCBs before demolition and remediate as required by local, state, and federal regulations (see Section 4.19.10.3, *Mitigation Measures for Hazardous Materials Impacts* for more details).	N
BART Alternative/MOS Scenarios		**BART Alternative/MOS Scenarios**	
Structures to be demolished or renovated would likely contain asbestos, lead, and/or polychlorinated-biphenyls (PCBs).	S	Evaluate building materials for asbestos, lead, and PCBs before demolition and remediate as required by local, state, and federal regulations (see Section 4.19.10.3, *Mitigation Measures for Hazardous Materials Impacts* for more details).	LS
Impacts Due to Groundwater Contamination			
Baseline Alternative		**Baseline Alternative**	
No impacts are anticipated.	N	None required.	N
BART Alternative/MOS Scenarios		**BART Alternative/MOS Scenarios**	
Chlorinated solvent contamination would be encountered in groundwater in the cut just north of the Montague Expressway, due to existing plume. Heavy metals and petroleum hydrocarbons may be encountered at this and other locations along retained cuts. Low levels of dissolved contaminants are anticipated during tunneling in	S	Characterize groundwater contaminant levels in each area for appropriate treatment during construction. Model groundwater flow rates (see Section 4.19.10.3, *Mitigation Measures for Hazardous Materials Impacts* for more details).	LS

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Table 6.2-2: Summary of Impacts and Proposed Mitigation for the SVRTC Baseline and BART Alternatives

Impact	Significance	Mitigation	Significance After Mitigation
downtown San Jose. Groundwater contamination is likely to be encountered during cut-and-cover construction of BART stations. Releases of contaminated groundwater at the surface may result from accidental releases or pipe and equipment leaks or breaks during dewatering and treatment.			
Impacts Due to Surface Water Contamination **Baseline and BART Alternative/MOS Scenarios** Surface water may contact hazardous waste (spills or soils). Contaminated construction runoff may contaminate water entering local creeks or San Francisco Bay.	LS	**Baseline and BART Alternative/MOS Scenarios** None required.	LS
NOISE AND VIBRATION **Baseline and BART Alternatives/MOS Scenarios** Substantial temporary and periodic increases of noise and vibration levels near construction areas.	S	**Baseline and BART Alternatives/MOS Scenarios** Avoid impact pile driving where feasible or use drilled piles or other techniques and construct temporary noise barriers (see Section 4.19.11.3, *Mitigation Measures for Noise Impacts* for more details).	LS
SECURITY AND SYSTEM SAFETY **Baseline and BART Alternatives/MOS Scenarios** No impact.	N	**Baseline and BART Alternatives/MOS Scenarios** None required.	N
UTILITIES **Baseline Alternative** No impact is anticipated. **BART Alternative/MOS Scenarios** Short-term service disruptions of undetermined length may occur during construction.	N S	**Baseline Alternative** None required. **BART Alternative/MOS Scenarios** Uncover, reinforce, and support underground utilities that are not to be relocated, as necessary (see Section 4.19.13.3, *Mitigation Measures for Utilities Impacts* for more details).	N LS

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Table 6.2-2: Summary of Impacts and Proposed Mitigation for the SVRTC Baseline and BART Alternatives

Impact	Significance	Mitigation	Significance After Mitigation
VISUAL QUALITY AND AESTHETICS			
Baseline and BART Alternatives/MOS Scenarios		**Baseline and BART Alternatives/MOS Scenarios**	
All construction activities would involve heavy equipment, stockpiling of soils and materials, and other visual signs of construction. Such short-term visual changes as a result of construction are a common and accepted feature of urban and suburban areas.	LS	Erect visual screening at construction sites as appropriate (see Section 4.19.14.3, *Mitigation Measures for Visual and Aesthetic Impacts* for more details).	LS
WATER RESOURCES, WATER QUALITY, AND FLOODPLAINS			
Groundwater Impacts			
Baseline Alternative		**Baseline Alternative**	
Excavation and construction would disturb soil and could affect groundwater in the immediate area. Accidental spills could contaminate the soil and/or groundwater. Groundwater could come in contact with contaminated soil. Impacts would be limited to immediate area.	LS	None required.	LS
BART Alternative/MOS Scenarios		**BART Alternative/MOS Scenarios**	
Excavation and construction for trenches, cut-and-cover stations, and subway tunnel may contaminate groundwater. Dewatering of saturated granular deposits may cause diversion of groundwater flow direction. Construction materials and accidental spills may affect groundwater quality.	LS	None required.	LS
Surface Water Resource Impacts			
Baseline and BART Alternatives/MOS Scenarios		**Baseline and BART Alternatives/MOS Scenarios**	
Construction activities could affect stormwater by releasing sediment and/or chemicals onto the ground or directly into watercourses. Excavated contaminated soil could pollute surface water sources. Exposed soil and soil stockpiles could run off and cause erosion and increased sedimentation directly into receiving water bodies. There is a potential for chemical releases (e.g., fuels, paints, solvents) at construction sites. Direct discharge of dewatering effluent to the	LS	None required.	LS

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Table 6.2-2: Summary of Impacts and Proposed Mitigation for the SVRTC Baseline and BART Alternatives

Impact	Significance	Mitigation	Significance After Mitigation
storm drainage system could impact downstream drainages and the bay.			
Floodplain Impacts			
Baseline Alternative		**Baseline Alternative**	
No impact.	N	None required.	N
BART Alternative/MOS Scenarios		**BART Alternative/MOS Scenarios**	
No impact.	N	None required.	N

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6.2.3 SIGNIFICANT UNAVOIDABLE ADVERSE EFFECTS UNDER CEQA

6.2.3.1 No-Action Alternative

Projects planned under the No-Action Alternative would undergo separate environmental review to define unavoidable adverse effects from this alternative. (See Section 3.2.1.2 for a list of future projects under the No-Action Alternative.)

6.2.3.2 Baseline Alternative

There would be no unavoidable adverse effects of the Baseline Alternative, assuming compliance with design requirements and best management practices or with mitigation measures as identified in this document.

6.2.3.3 BART Alternative

There would be significant unavoidable impacts under the BART Alternative and MOS Scenarios, including impacts to local traffic circulation near the proposed BART stations, vibration impacts, impacts to properties determined or apparently eligible for the National Register of Historic Places (NRHP), and impacts to local traffic resulting from construction activities as described in the following paragraphs and summarized in Table 6.2-2.

Some 30 of 121 local intersections in the SVRTC that were evaluated for traffic impacts would degrade to below LOS D with the BART Alternative (One less with MOS-1E). Impacts at 13 of these intersections would be mitigated with the additional of through and/or turning lanes. There are no feasible mitigation measures for 17 of the intersections with either the BART Alternative or MOS Scenarios, causing a significant unavoidable adverse impact to traffic.

While substantial vibration mitigation will be included in the design of the BART Alternative, as well as the MOS Scenarios, mitigation may not be able to reduce all of the impacts to the FTA and/or BART criteria. Because of the proximity of adjacent residences on the east and west sides of the alignment north of Berryessa Road, 12 residences would potentially be exposed to vibration levels exceeding FTA and/or BART vibration criteria. This will result in a significant unavoidable adverse impact. However, VTA will continue to evaluate vibration mitigation options to mitigate these impacts where feasible.

Detours in street traffic during the cut-and-cover construction of the underground stations would result in significant unavoidable adverse effects on intersection operations at virtually every major intersection in the downtown area. The detours would last three-and-a-half to four years and would add vehicular traffic to already congested movements and/or create new demand for movements that conflict with other high demand movements. Affected intersections include:

- East/West San Fernando Street and Almaden Boulevard
- West San Fernando Street and Market Street
- East San Fernando Street and 3rd Street
- East San Fernando Street and 4th Street
- East San Fernando Street and 10th Street
- East San Fernando Street and 11th Street
- East Santa Clara Street and 10th Street
- East Santa Clara Street and 11th Street

- East St. John Street and 10th Street
- East St. John Street and 11th Street
- East St. John Street and 3rd Street
- East St. John Street and 4th Street
- East/West St. John Street and Market Street
- West Julian Street and SR 87
- East/West St. James Street and Market Street

The following streets will have unavoidable adverse traffic impacts resulting from lane closures for grade separation construction:

- Montague Expressway
- Trade Zone Boulevard
- Hostetter Road

6.3 CUMULATIVE IMPACTS

NEPA regulations developed by the federal Council on Environmental Quality (CEQ) require that the cumulative impacts of a proposed project be addressed in an EIS (40 CFR Part 1508.25). Cumulative impacts on the environment are those that result from the incremental impact of the proposed action when added to other past, present, and reasonably foreseeable future actions (40 CFR Part 1508.7). These impacts can result from individually minor impacts of multiple actions over time.

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" (CEQA Guidelines Section 15355). CEQA documents are required to include a discussion of potential cumulative effects *when those effects are significant* and the CEQA Guidelines suggest two possible methods for assessing potential cumulative effects (CEQA Guidelines Section 15130). The first method is a list-based approach, which considers a list of past, present, and reasonably foreseeable future projects producing related or cumulative impacts. The second method is projections-based, and uses a summary of projections contained in an adopted general plan or related planning document that is designed to evaluate regional or area wide conditions. The projections-based method is generally used by VTA in evaluating projects within its jurisdiction.

While the use of regional projections is one possible method of analyzing cumulative effects under CEQA, it is the required method under NEPA. FTA guidelines require that regional growth projections from the metropolitan planning organizations (ABAG and MTC in this case) be used as input for the assumed future year conditions. This cumulative analysis considers past, present, and reasonably foreseeable future projects that involve impact to the same resource categories as those impacted by the Baseline and BART alternatives, as well as the MOS Scenarios. The analysis addresses impact categories of a regional nature, such as air quality and land use, by consideration of actions that may result from the implementation of plans by local and regional agencies that manage or regulate potentially impacted resources. The plans consulted to determine past, present, and reasonably foreseeable future projects and trends included the Metropolitan Transportation Commission's Regional Transportation Plan and the General Plans of the counties and local jurisdictions along the proposed corridor (Alameda County, Santa Clara County, and the cities of Fremont, Milpitas, San Jose, and Santa Clara).

The examination of each environmental resource category begins with a discussion of regulatory and geographic context if applicable. Regulatory context refers to the legal framework within which each

environmental resource category is governed. For example, Section 404 of the federal Clean Water Act protects special aquatic sites such as wetlands. The cumulative impacts of the Baseline and BART alternatives are discussed in the context of policy requirements for no-net loss of these protected resources. The geographic context varies by environmental resource category as well. For example, resource discussions such as air pollutant emissions cover a geographically large area because cumulative impacts are most accurately understood in the context of the Bay Area Air Basin and not by jurisdictional boundaries of governmental entities. In the Bay Area, regional air quality planning is overseen by the BAAQMD.

Trends for historical patterns of resource use are described for each resource category. A review of these trends provides context for the impacts analysis because there is limited information available about specific past projects that can be analyzed in consideration of other past, present, and future actions. For example, the trend for air quality in the Bay Area is based on reductions in pollutant emissions since passage of the federal CAA. Because the goal of the cumulative analysis is to consider how the Baseline and BART alternatives, in combination with past, present, and reasonably foreseeable future actions cumulatively affects the resources, understanding trends in the stability, use, or viability of the resource over time is relevant. The timeframe in which each resource is examined is determined by the availability and relevance of "the best data we have or are able to collect" with regard to other projects and environmental trends for the resource (CEQ 1997).

Sections 4.1 through 4.19 discuss cumulative impacts for each resource area. Section 3.7 list related projects that were considered in the impact analysis. Cumulative impacts are summarized below for transportation, air quality, biological resources, cultural resources, energy, environmental justice, land use, noise and vibration, and water resources. Based on the analysis in Chapter 4, *Environmental Analysis*, cumulative impacts would be less than significant for community facilities, electromagnetic fields, geology, hazardous materials, security and system safety, socioeconomics, utilities, and visual quality.

6.3.1 TRANSPORTATION

The corridor has historically served as an inter-urban connector route for Bay Area cities. As the corridor has become more urbanized over the last 30-40 years, there has been an increased need for modal options to serve people who are living, working, or visiting within the corridor. The corridor is currently served by several major roads and transit providers. The notable roadways include I-880, I-680 and US 101 and SR 237 and SR 87, that are used by cars, trucks, and buses. AC Transit and VTA provide bus service in the corridor and rail services include LRT, that is provided by VTA, commuter rail that is provided by BART, and heavy rail that is provided by Caltrain, ACE, Capitols, and Amtrak. There are also several roadway and transit improvement projects currently underway in the corridor and several more are planned for the future (scheduled for completion by 2025). The improvements include, but are not limited to, street and freeway widenings, interchange improvements and enhancement of regional bus lines and commuter trains.

Despite the breadth of the existing transportation system in the corridor, there is still a need to provide additional capacity and modal options. Results show that 23 of 29 directional freeway segments analyzed for the project operate at an unacceptable Level of Service (LOS) F during at least one peak hour on weekdays. Projections suggest that mobility in the corridor, which is already reduced, will be further restricted if capacity is not expanded. According to ABAG, by 2025, total population in the study area is expected to increase by 51 percent, households are expected to increase by 52 percent, and jobs are expected to increase by 29 percent. Existing transportation systems in the corridor must be enhanced to accommodate this projected growth.

The Baseline and BART alternatives, as well as the MOS scenarios, combined with other transportation projects in the counties, address the need for improved transportation choices and capacity. These

alternatives would lead to an increased number of transit trips in the counties, that would have several benefits including an overall improvement in access and mobility, enhanced regional connectivity, reduced congestion on highways and supporting road networks, improvements in regional and sub-regional air quality, and support of local economic and land use plans.

A key consideration in this analysis is whether the proposed transportation system improvements would lead to significant levels of unforeseen growth. As stated in the land use discussion, historically transportation improvements in the counties have been in response to job growth. As an example, population in the counties will continue to increase over the next 25 years, regardless of changes to the transportation system.

The MOS scenarios, as the first phase in the completion of the full-build BART Alternative, also address the need for improved transportation choices and capacity in the region. For MOS-1E, the ultimate benefit of increased transit trips would be delayed for three years compared with the full-build BART Alternative by deferring the Berryessa and Civic Plaza/SJSU stations.

6.3.2 AIR QUALITY

The prevailing meteorological trend affecting air quality in the corridor is the movement of air from the northwest. Due to this trend, air pollution generated along the San Francisco Peninsula and the northern portion of the East Bay is transported toward the project area, particularly during the summer months. Air quality in the corridor generally worsens during seasonal periods of low wind speed in areas where topography reduces the movement of air, such as inland valleys. Low temperature inversions can also contribute to the build up of air pollution.

Overall, Bay Area air quality has improved since the implementation of the federal CAA in 1970 and the CCAA in 1988. This regional trend is projected to continue in the future with the exception of particulate matter. Pollution trends relevant to this project were identified from data recorded over three years at three monitoring stations in the corridor. For the seven criteria pollutants monitored, threshold violations did occur, but rarely.

The air quality analysis in Section 4.3 evaluates cumulative effects on air quality in the Bay Area Air Basin. Both the Baseline and BART alternatives as well as the MOS scenarios were found to be in conformity with the current regional air quality plan. They also result in decreased vehicle miles of travel (VMT), which would reduce congestion and subsequently improve local and regional air quality. As stated in Section 4.3, criteria pollutant emissions are anticipated to incrementally decrease with these alternatives. The BART Alternative would have the greatest benefit to air quality because it would lead to a greatest reduction in VMT.

The MOS scenarios would produce similar reductions in VMT and associated traffic congestion when compared with the full-build BART Alternative. Initially, the air quality benefits would be slightly less than the full-build BART Alternative because of the marginally greater VMT. However, the completion of MOS scenarios would bring the VMT reduction for the MOS scenarios to a similar level as the full-build BART Alternative.

6.3.3 BIOLOGICAL RESOURCES

The trend of urbanization that has occurred in the corridor over the last 40 years has impacted several biological resources and supporting habitat. However, there are several local policies in-place intended to balance resource conservation and urban development. These policies, as identified in city and county general plans, generally aim to identify and conserve as much of the remaining biological resource base as possible by preventing avoidable impacts.

In addition to municipal policies, there are several federal and state regulations intended to ensure that project-related impacts to biological resources are minimized. These regulations include ACOE's no net loss policy for wetlands, the program administered by the CDFG in coordination with Alameda and Santa Clara counties to mitigate loss of burrowing owl habitat, and programs to preserve and enhance existing Congdon's tarplant and salmonid fisheries, as administered by CDFG, USFWS, and NOAA Fisheries. While these measures won't entirely isolate these resources from future impacts, they will minimize impacts over the long term, thereby reducing cumulative impacts.

As discussed in Section 4.4, the Baseline and BART alternatives, as well as the MOS scenarios, would result in some limited impacts on seasonal wetlands, waters of the US and special status species. These alternatives in combination with other transportation projects in the area would also result in additional impacts to biological resources in Alameda and Santa Clara counties. However, the cumulative impacts of transportation projects on biological resources would be offset by project-specific mitigation required by federal and state regulations (see above). In addition, most transportation projects planned for the counties will occur in areas that are currently developed or planned for further development as envisioned in the adopted general plans of each local jurisdiction.

6.3.4 CULTURAL RESOURCES

As stated in Section 4.6, *Cultural and Historic Resources*, there are several recorded prehistoric and historic archaeological resources and historic architectural resources within the project APE. Many of these resources are related to the Native American and Spanish colonial settlements that once existed in the corridor. There are also zones within the corridor, especially historic stream channels and drainages, where the potential existence of undiscovered historic archaeological resources is moderate to high.

Several federal and state regulations and local policies have been developed to preserve these resources in the face of mounting development pressures over the last 40 years. The trend among the counties and cities, as reflected by goals and policies set forth in their general plans, is an ongoing effort to retain and preserve these resources. All general plans contain policies geared toward the ongoing preservation of these resources.

The Baseline and BART alternatives have the potential to affect archaeological and historic cultural resources. These alternatives, in combination with other transportation projects in the counties, will contribute to cumulative impacts on cultural resources. Cultural resource impacts will be offset by project-specific mitigation and compliance with federal and state cultural resource protection requirements.

The MOS scenarios, like the full-build BART Alternative, have the potential to affect archaeological resources that could, in combination with other infrastructure projects, contribute to the gradual loss of cultural resources in Santa Clara County. However, for MOS-1E, several potential archaeological sites at Berryessa Station would remain undisturbed until the implementation of MOS-2E.

6.3.5 ENERGY

Section 4.8 addresses cumulative impacts on energy consumption. The Baseline Alternative would result in a slight increase (0.17%) in energy demand over the No Action Alternative. The BART Alternative would result in a -0.61% decrease in energy demand which would result in a net cumulative benefit to energy supply.

Like the full-build BART Alternative, the MOS scenarios also decrease energy demand over the No-Action Alternative. The MOS scenarios would also result in a net cumulative benefit to energy supply.

6.3.6 ENVIRONMENTAL JUSTICE

The limited effects that the Baseline and BART alternatives, as well as the MOS scenarios, would have on Environmental Justice communities in the corridor would be offset by improvements in access and mobility to these communities. These alternatives, in combination with other planned improvements to the transportation system, such as LRT extensions, would collectively help reduce congestion and improve mobility throughout the corridor, thereby benefiting Environmental Justice communities.

6.3.7 LAND USE

Over the last 30-40 years, the project corridor has become increasingly urbanized. During this period, the mix and intensity of land uses has changed significantly. As documented in Section 4.12, a survey within 300 feet of the proposed alignments revealed notable variations in land uses. Land uses within 300 feet of the proposed Baseline Alternative are primarily industrial, commercial, and residential. Land uses within 300 feet of the BART Alternative, as well as the MOS scenarios, included industrial, office, mixed-density residential, commercial, retail, and recreational.

Current and future development in the project corridor is influenced by county and municipal General Plans, specific area plans, and neighborhood plans. A trend among these plans, which will influence future development in the corridor, is support for development within existing urban service areas where utilities and infrastructure already exist, including an intensification of development at or near transit hubs.

The extent of influence that transportation projects have had on land use in the corridor has typically been focused on station areas, where higher density mixed-use development has been introduced to take advantage of enhanced mobility and capacity. Development at station locations, as discussed in Section 4.12, would be consistent with the ongoing trend of urbanization in the Bay Area and would support jurisdictions' efforts to site in-fill development and higher densities within existing urban and suburban areas.

Based on a review of relevant land use documents, the Baseline and BART alternatives, as well as the MOS Scenarios would not result in cumulative land use impacts. Improvements to the transportation system have historically not been the primary cause for new growth to occur. Other societal factors such as job growth have typically driven land use trends. As a result, these alternatives, in combination with other transportation projects in the counties and region are viewed more as accommodating growth that has already occurred or is planned by local jurisdictions. Accordingly, the Baseline and BART alternatives and MOS Scenarios and other transportation projects would not cause unexpected growth or land use changes. The Baseline and BART alternatives, as well as the MOS scenarios, are consistent with existing, planned, and programmed transportation improvements and are intended to accommodate planned growth by enhancing transit access for local residents and businesses.

The addition of parking at core system stations with the BART Alternative would similarly have limited effects on the surrounding land uses because the additions are an incremental parking increase and for the most part land use changes have already occurred at those stations. Additional parking would be added at surface level or in vertical structures within BART's existing property or easements. This would not require the relocation of existing properties, thereby avoiding a change in land use trends in the corridor.

6.3.8 NOISE AND VIBRATION

The operation of transportation facilities such as highways and airports are a primary source of noise in the corridor. Over time, as transportation demand in the corridor has increased, roadways and transit systems have expanded. This has resulted in an overall increase in noise levels in the corridor. Cities

and counties have adapted to this trend by establishing land use standards and zoning ordinances that generally place less noise-sensitive land uses (commercial, office, and industrial uses) along major transportation facilities. One of the main issues stemming from this trend, as addressed by the general plans and general plan EIRs is the interface between public health and safety and increased noise levels. Cities and counties have enacted policies to prevent instances where the spatial relationship between sensitive receptors and harmful noise may result in impacts to the public's health and safety. Several of these policies are intended to achieve compatibility of existing and future noise levels with existing and future land uses. For instance, many cities have established exterior noise level guidelines and other measures including implementation of strategic site and building design, specialized building construction methods, and noise attenuation techniques.

The Baseline Alternative would contribute to an increase in overall noise levels near specific project sites. However, the busway connector facilities are not located near noise-sensitive land uses and therefore would not contribute to noise impacts. Other specific projects would undergo their own environmental clearances.

The BART Alternative and MOS scenarios would contribute to an increase in overall noise levels in the immediate project alignment and station areas. As discussed in Section 4.13, noise impacts would primarily occur at the above ground alignment, at stations, and at the maintenance facility. While these noise increases would contribute to cumulative increases in noise levels, the BART Alternative and MOS scenarios would not have a substantial impact on surrounding noise levels due to the mitigation measures identified. Cumulative increases in noise levels are anticipated and planned for in the General Plans of the local jurisdictions and counties. The cumulative increases in noise levels are a byproduct of planned development and growth and each city has developed policies and strategies for addressing these anticipated increases in noise levels primarily through land use and zoning regulations and development standards.

With the BART Alternative and MOS scenarios, a total of 12 residences would be exposed to vibration levels exceeding FTA and/or BART after mitigation. However, vibration impacts are generally confined to the immediate source location and cumulative impacts would not result from implementation of the BART Alternative or MOS scenarios.

The MOS scenarios are consistent with the city general plans for the proposed development surrounding the BART stations. Like the full-build BART Alternative, the MOS scenarios would not cause unexpected growth or land use changes along its alignment. Similarly, the MOS scenarios are viewed more as accommodating growth that has already occurred or is planned by local jurisdictions. Cumulative land use impacts resulting from implementation of the MOS scenarios are, therefore, not expected.

6.3.9 WATER RESOURCES

There is a history of flooding in the corridor. The floodplains, as identified in Section 4.18, have been in proximity to or overlapping with an increased amount of development as a result of urbanization in the corridor. This development has significantly increased the amount of runoff carried by streams in the corridor and the potential for flooding.

As a result, cities have taken measures to ensure that fewer impacts will result due to development on floodplains. For example, many natural waterways have been converted, to varying degrees, to flood control channels and master drainage plans have been developed to help ensure that events such as 100-year flood can be contained within engineered retention systems.

The Baseline Alternative would not have any direct impacts on the floodplain but would be close to it. However, the BART Alternative, as well as the MOS scenarios, would encroach into 100-year floodplains at numerous locations. This would not impact operation of the alternative, because, as described in

Section 4.18, the majority of these areas are within the existing operational railroad right-of-way and flooding risks are being managed through projects undertaken by local water districts and other agencies. In addition, the BART Alternative and MOS scenarios would not have any substantial impacts to natural and beneficial floodplain values including, but not limited to, support of biological resources, water quality, and groundwater recharge nor would it interfere with the implementation of current or future flood control projects.

The Baseline and BART alternatives and MOS scenarios would contribute to a cumulative impact on the floodplain by introducing more development, in addition to that already existing or proposed. They would also increase impervious surface area, in addition to that created by the future development envisioned in local general plans. This cumulative increase of impervious surface area would increase the total volume and rate of stormwater runoff, which would increase the potential for flooding. However, flood control efforts being undertaken by cities, counties and local agencies will minimize potential cumulative flooding impacts.

6.3.10 CONSTRUCTION

Cumulative construction impacts could result from the simultaneous construction activities of the related projects listed in Section 3.7 or other future unknown projects. However, as with any large construction project that has construction activities planned in the future, impacts are difficult to predict. For the BART Alternative, as well as the MOS scenarios, construction activities are projected to occur 3-8 years after completion of the environmental documentation.

The related project with the greatest potential for cumulative impacts is VTA's Downtown/East Valley Light Rail/Bus Rapid Transit Project that includes the Santa Clara/Alum Rock Corridor. Preliminary concept planning, design options, and environmental analysis is currently underway for both a Enhanced Bus and Single Car Light Rail alternative along Santa Clara Street that would overlap the BART Alternative west of 28th Street. VTA's Board would consider approval of the EIS/EIR sometime in Spring 2005. Should both the BART Alternative or MOS Scenario and Single Car Light Rail Alternative be selected, extensive coordination would be required to minimize the disruption to traffic, bicyclists, pedestrians, and businesses on Santa Clara Street. This would be accomplished by tracking and implementing both the Mitigation Monitoring and Reporting Plans and Construction Impact Mitigation Plans (refer to Section 4.19.2.1) for both projects.

Other related projects whose construction activities might result in cumulative environmental impacts include: BART Extension to Warm Springs, Route 101/Taylor-Mabry Interchange, East Warren Avenue Underpass, and Upper Penitence Creek Bypass Channel Project (refer to Section 3.7 regarding the status of these projects). As with the related VTA project above, the BART Alternative, as well as the MOS scenarios would need to be closely coordinated with other related projects to minimize environmental impacts.

For MOS-1E, construction of the Berryessa Station would be implemented in MOS-2E, three years after the initial phase. It is possible that the deferred construction of Berryessa Station could produce temporary and localized construction impacts, in terms of vehicular traffic and air quality, if development or other infrastructure projects were occurring simultaneously in the area.

6.4 GROWTH INDUCING IMPACTS

CEQA requires a consideration of a project's capacity to induce growth. Growth inducement would occur if the amount of population or employment growth projected to occur as a result of a project would exceed planned levels. Increased development and growth in an area are dependent on a variety of factors, including real estate market conditions, employment and other opportunities, availability of developable land, and availability of infrastructure, water, and power resources.

Neither the Baseline nor BART alternatives, as well as the MOS scenarios would induce unplanned growth in the SVRTC. The BART Alternative and MOS scenarios would support Silicon Valley's street development plan somewhat better than the Baseline Alternative by influencing development into efficient and coherent patterns. In addition, the BART Alternative and MOS scenarios are consistent with the general plans of the cities of Milpitas, San Jose, and Santa Clara, which encourage the use of transit to organize intensive development around the station locations within their jurisdictions. While the BART Alternative station openings may affect the timing of development, even this may not change substantially due to the long planning and construction schedule. The stations are not planned to open for at least 10 years and development consistent with local general plans is more likely dependent upon economic conditions than BART station opening dates. The MOS scenarios may similarly not be the major factor in the timing of when development is to occur around station locations.

6.5 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

The CEQA Guidelines state that, where the No-Action Alternative is the environmentally superior alternative, the EIR shall also identify the environmentally superior alternative from among the other alternatives (CEQA Guidelines 15126.6(e)(2)).

Based on the evaluations documented in Chapter 4, *Environmental Analysis*, the BART Alternative has been identified as environmentally superior to the Baseline Alternative. The BART Alternative offers the greatest reduction in regional vehicle miles traveled, forging important links in a unified transit system that would encircle San Francisco Bay. The BART Alternative would reduce private automobile and truck trips by more than 345 million annual vehicle miles, when compared with the No-Action Alternative, and more than 300 million annual vehicle miles when compared with the Baseline Alternative.

Private automobiles are the primary source of air pollution in the Bay Area Basin, and the BART Alternative's reduction in private automobile trips would translate into regional air quality benefits. As detailed in Section 4.3, *Air Quality*, regional reductions in criteria air pollutant emissions would be roughly ten times greater under the BART Alternative than under the Baseline Alternative. The BART Alternative would also have greater beneficial effects on land use than the Baseline Alternative, encouraging higher-density mixed-use development adjacent to the proposed transit nodes, which is consistent with local land use policies.

The BART Alternative would result in greater localized traffic impacts at BART stations, greater noise and vibration impacts, impacts to cultural resources, impacts to wetlands, and displacement effects. The majority of these impacts would be mitigated to a less than significant level, and the residual impacts, on balance, would be off-set by the benefits the BART Alternative offers in terms of transit use, improved access to community facilities, reduction in air emissions, energy conservation, and consistency with land use planning goals.

Since the MOS scenarios only defer elements of the full-build BART Alternative, the MOS scenarios are also environmentally superior to the Baseline Alternative. However, the full-build BART Alternative remains environmentally superior to the MOS scenarios, since the environmental benefits are realized earlier.