Federal Transit Administration

RECORD OF DECISION

Santa Clara Valley Transportation Authority
Silicon Valley Rapid Transit Corridor Project
Santa Clara County, California

DECISION

The U.S. Department of Transportation Federal Transit Administration (FTA) has determined that the requirements of the National Environmental Policy Act (NEPA) of 1969 have been satisfied for the Santa Clara Valley Transportation Authority (VTA) Silicon Valley Rapid Transit Corridor (SVRTC) Project in Santa Clara County, California. VTA in coordination with FTA have identified the Berryessa Extension Project Alternative (Project), which includes the Milpitas Station in the City of Milpitas and Berryessa Station in the City of San Jose, as the Locally Preferred Alternative and candidate for the federal New Starts funding program. The Project consists of the design, construction, and future operation of a 9.9-mile extension of the Bay Area Rapid Transit (BART) system from the currently under construction extension to the Warm Springs Station in Fremont to new stations in the cities of Milpitas and San Jose.

BACKGROUND

In accordance with the requirements of NEPA and the California Environmental Quality Act (CEQA), VTA and FTA previously prepared a combined Draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR) and Draft 4(f) Evaluation. This document was released for public review and comment in March 2004. Subsequent to the public review period for the Draft EIS/EIR, BART began the NEPA review process for BART Warm Springs Extension, a 5.4-mile corridor extending south from the Fremont BART station. EPA, letter dated May 21, 2004, had concerns about environmental clearance actions on the Project when the Warm Springs Extension project, a vital connection to the Project, was also under federal environmental review. To avoid the limitation of alternatives for Warm Springs, VTA chose to suspend the federal NEPA process on SVRTC until the Warm Springs EIS was complete. FTA issued a Record of Decision for the Warm Springs Extension on October 24, 2006 . Construction on the Warm Springs Extension commenced with a ground-breaking on September 30, 2009.

Under CEQA, a Final EIR was prepared and certified by the VTA Board in December 2004. A Supplemental EIR (SEIR) (an update to the prior EIR to address Project design refinements) was certified by the VTA Board in June 2007.

In December 2005, VTA withdrew the BART Extension Project to Milpitas, San Jose and Santa Clara from FTA's New Starts project qualification and funding program due

to FTA concerns about the funding for operations. This included formal withdrawal from the FTA preliminary engineering phase of project development.

In mid 2007, VTA requested approval from FTA to begin the NEPA process again and FTA concurred. On September 21, 2007, FTA published a Notice of Intent to Prepare an EIS on the Project in the Federal Register *(Federal Register,* Vol. 72, No. 183). VTA and FTA held public scoping meetings in October 2007 to solicit comments on the scope of project improvements and issues for evaluation as part of the environmental studies.

New Starts documentation for the Locally Preferred Alternative, identified as the Silicon Valley Berryessa Extension Project (BEP), was submitted to FTA in September 2009. These actions and approvals allowed the project to qualify for entry into the New Starts evaluation process.

The Notice of Availability for the Final EIS was issued on April 16, 2010 *(Federal Register,* Vol. 75, No. 73). This Record of Decision also satisfies the requirements of other environmental laws that apply to federal actions, such as Section 4(f) of the Department of Transportation Act (49 U.S.C. Section 303), and Section 106 of the National Historic Preservation Act (NHPA).

PROJECT OVERVIEW

BART has been in operation since 1972 and currently operates in four Bay Area counties: San Francisco, Alameda, Contra Costa, and San Mateo. In southern Alameda County, BART provides service to downtown Fremont.

In the 2001, VTA initiated a Major Investment Study (MIS) for the Silicon Valley Rapid Transit Corridor Project to extend BART service from the City of Fremont to Santa Clara County. The Silicon Valley Rapid Transit Corridor Project was originally developed in response to growth projections for the study area that indicated a need for alternative travel modes to better meet current and anticipated travel demand in combination with regional freeway network limitations.

As stated previously, VTA prepared an EIR for a 16.1-mile BART Extension Project to Milpitas, San Jose, and Santa Clara in accordance with CEQA. The VTA Board of Directors certified the Final EIR and approved the Project on December 9, 2004. As engineering progressed, a number of design changes were identified and a supplemental document was prepared to evaluate the environmental impacts. The VTA Board of Directors considered these changes and certified the Final SEIR and approved the revised Project on June 7, 2007.

FUNDING

The total estimated capital cost for the Project is approximately $2.108 billion (2009 dollars). The estimated capital cost of the Project includes right-of-way, construction, non-construction costs (design, environmental mitigation, construction oversight, insurance, systems engineering, etc.) and vehicles. Project costs will be refined further

as the Project proceeds through the development process of right-of-way acquisition, final design and construction.

Two voter-approved initiatives, the November 2000 Measure A 1/2-cent sales tax for transportation that included a proposed extension of BART service into Santa Clara County and the November 2008 Measure B for a 1/8-cent sales tax dedicated to operation of a BART extension project, will contribute to the funding of the Project. Measure B is to go into effect when (1) VTA executes a Full Funding Grant Agreement (FFGA) or its equivalent with the FTA for at least $750 million and (2) the State of California contributes at least $240 million in Traffic Congestion Relief Program (TCRP) and/or other funds to the Project. The request for FTA Section 5309 New Starts funding for $900 million was submitted in September 2009. The request for $900 million was $150 million over the threshold specified in Measure B. Assuming funding of at least the Measure B threshold is approved, VTA will begin collecting the 1/8-cent sales tax increment for a period of 30 years.

The State of California has committed to a total of $648 million in TCRP funds, inclusive of the $240 million Measure B threshold. Approximately $352.3 million of TCRP funds will be allocated to the capital cost of the Project.

Funds from Measure A, supplemented by $900 million in FTA New Starts program and $352.3 million in State of California funds, form the foundation for the capital financial plan for the Project. Funds from Measure B, estimated to generate $1.2 billion from 2013 through 2038, form the operating financial plan for the Project. As Project costs are further refined, it is expected that funding contributions will be adjusted as necessary.

ALTERNATIVES CONSIDERED

The Final EIS fully evaluated three alternatives for the Silicon Valley Rapid Transit Corridor Project: the No Build Alternative, the Berryessa Extension Project (BEP) Alternative, and the Silicon Valley Rapid Transit Project (SVRTP) Alternative.

The No Build Alternative (the No-Action Alternative required by NEPA) consists of the existing, planned and programmed highway and transit systems expected to be in place by 2030 if the Project is not built. The No Build Alternative is based on the Bay Area's Regional Transportation Plan (RTP), Mobility for the Next Generation – Transportation 2030 Plan for the San Francisco Bay Area (Transportation 2030 Plan), adopted by MTC in February 2005, and the Valley Transportation Plan 2030 (VTP 2030), adopted by VTA in February 2005. The No Build Alternative includes future programmed improvements in bus service, Caltrain commuter rail service, BART, Bus Rapid Transit (BRT), light rail transit (LRT), Altamont Commuter Express (ACE) rail service, and Capitol Corridor rail service. Future transportation projects included as part of the No Build Alternative include the Mineta San Jose International Airport People Mover, future rail corridors to be determined by major investment studies, and California High Speed Rail.

The BEP Alternative, identified in the Final EIS as the Preferred Alternative, consists of a 9.9-mile BART extension from the currently under construction extension to the Warm Springs Station in Fremont. The alignment is on the former Union Pacific Railroad (UPRR) railroad corridor through Milpitas to San Jose. The last station of the BEP Alternative would be the Berryessa Station.

The SVRTP Alternative would consist of a 16.1-mile extension of the BART system that would extend from the currently under construction extension to the Warm Springs Station in Fremont through Milpitas and San Jose to Santa Clara. The northerly portion of this Alternative is substantially identical to the BEP Alternative. The similarities end where the SVRTP Alternative would extend southward from the planned Berryessa Station. After the Berryessa Station, the SVRTP Alternative would descend into a 5.1-mile subway tunnel, continue through downtown San Jose, and terminate at grade in the City of Santa Clara near the Santa Clara Caltrain Station.

A number of additional alignment and technology alternatives were evaluated in detail in the 2001 MIS and found not to satisfactorily meet the Project's purpose and need. The Final EIS analysis incorporates the MIS analyses by reference and summarizes the reasons for rejection of these alternatives.

The VTA Board of Directors has committed to building the full BART extension alternative into Milpitas, San Jose and Santa Clara with local and state funding, as well as federal funding through the FTA competitive New Starts funding program. However, due to the current economic environment, phasing this extension will be necessary. Phase 1 will include construction and operation of the Milpitas and Berryessa Stations as described for the Project.

DESCRIPTION OF THE PROJECT

The alignment would begin in Fremont, at the southerly terminus of the BART Warm Springs Extension that is under construction. A new, at grade, two-track BART rail line would be constructed near the UPRR Warm Springs Yard, east of the existing railroad ROW but within VTA's ownership. The alignment would continue south and remain at grade from Mission Boulevard to East Warren Avenue. The California Department of Transportation, Alameda County Transportation Authority, and City of Fremont are currently widening Mission Boulevard and reconstruct East Warren Avenue as a new roadway underpass. BART would cross both Mission Boulevard and East Warren Avenue on new bridge structures.

BART would cross at grade on a new bridge structure over Kato Road, which would be constructed as a roadway underpass by others as part of a separate railroad grade separation safety improvement project. The grade separation project would also construct a new bridge for the UPRR to cross over Kato Road. South of Kato Road, BART would continue at grade.

In Milpitas, the alignment would continue past the County/City line along the UPRR rail line. At Dixon Landing Road, the BART alignment would transition into a retained cut at the County/City line to south of Dixon Landing Road. Dixon Landing Road would

remain at grade, but be supported over the BART retained cut on a new roadway bridge structure. The UPRR crossing would also remain at grade.

The alignment would continue at grade and pass under the existing Abel Street overcrossing and the Calaveras Boulevard/State Route (SR) 237 overpass, then continue past the UPRR Milpitas Yard located to the west of the ROW. BART would transition into a retained cut from south of Curtis Avenue.

The Milpitas Station area would be located between Montague Expressway and Capitol Avenue and on the east and west side of the railroad ROW. The station area encompasses approximately 27 acres, and includes an eight-level parking structure. A pedestrian overcrossing would extend from the east side of Capitol Avenue over the roadway to the adjacent Montague Light Rail Transit (LRT) Station situated in the median of Capitol Avenue. The Milpitas Station includes two options for the bus transit center: East Bus Transit Center Option or West Bus Transit Center Option. Under the East Bus Transit Center Option, a 16-bay bus transit center would be located east of the station and south of the parking structure. Under the West Bus Transit Center Option, a 15-bay bus transit center with kiss-and-ride facilities would be located west of the station. After Milpitas Station, the alignment would continue in a retained cut configuration until south of the Milpitas/San Jose city line. Montague Expressway and Capitol Avenue would be supported above the BART retained cut on new roadway bridge structures.

The alignment located in San Jose would begin at the Milpitas/San Jose city line, continuing in a retained cut configuration. Trade Zone Boulevard would be supported above the BART retained cut on a new roadway bridge structure. South of Trade Zone Boulevard, the BART alignment would return to an at grade configuration for a distance of approximately 4,100 feet. Approaching Hostetter Road, BART would transition back into a retained cut. Hostetter Road would be supported above the retained cut on a new roadway bridge structure. BART would continue in a retained cut to south of Lundy Avenue and Sierra Road. The Sierra Road/Lundy Avenue intersection, which is located at the BART crossing, would remain at grade, but be supported over the BART retained cut on a new bridge structure. South of Sierra Road/Lundy Avenue, BART would transition to an at grade configuration and then to an aerial configuration near Berryessa Road. The aerial structure would pass over Berryessa Road and Upper Penitencia Creek and lead into the Berryessa Station. Aerial structure support columns would be required in the Berryessa Road median.

Berryessa Station would be located between Berryessa Road and Mabury Road, and would encompass approximately 52 acres. Pedestrian access to the station platform would be from a mezzanine situated at street level. A 10-bay bus transit center, including space for up to four articulated buses and approximately 10 private shuttles, would be located to the east of the station. An eight-level parking structure on 4.3 acres would be constructed at the south end of the site and to the east of the aerial guideway. The station area would include a BART Security Facility located north of the station. South of Mabury Road, the alignment would transition into a maintenance-of-way (MOW)/storage track and a tail track for train storage. The tail track would continue across US 101 on an existing railroad bridge and terminate near Lower Silver Creek with access from the existing creek maintenance road.

Maintenance facilities would be located at the existing BART Hayward Yard and Shops Facility. The existing primary shop building would be modified to handle the Project, including constructing additional lifts. Therefore, no additional buildings are planned to accommodate this Project. In addition, no new storage tracks would be required as a result of this project. In a separate project evaluating system-wide maintenance needs over the next several years, BART is considering other improvements at the Hayward Yard and Shops Facility.

VTA has made general arrangements with BART for the storage and maintenance of revenue vehicles for the Project through the mutual commitments established by the Comprehensive Agreement between VTA and BART dated November 19, 2001. This agreement provides that BART will be solely responsible for the operation and maintenance of all Project facilities and equipment, including revenue vehicles. VTA has full financial responsibility for the costs resulting from those activities, including a proportional share of the costs for capital investments within the existing BART system needed to support the extension.

Traction power facilities (substations and gap breaker stations) are proposed at seven locations adjacent to the alignment or within stations: south of East Warren Avenue, south of Kato Road, at Railroad Court, north of Montague Expressway, south of Trade Zone Boulevard, and in the Berryessa Station. Also, four train control buildings, three high voltage substations, two switching stations, and one train control room would be located adjacent to the alignment or within stations.

Communications facilities would include a communication antennae (100 feet high) at Berryessa station, with an alternate location within the High Voltage Substation SMR and Switching Station SSM site.

PUBLIC REVIEW PROCESS

The Notice of Intent (NOI) to prepare an EIS was published in the *Federal Register* on September 21, 2007. Three public scoping meetings were held on October 9, 11, and 18, 2007 in the cities of Milpitas, San Jose, and Santa Clara. Notices were published beforehand in local newspapers announcing the time, date, location, and purpose of the meeting. The newspapers included the San Jose Mercury News, The Milpitas Post, El Observador, Thoi Bao, Santa Clara Weekly, and the Fremont Argus. In addition, invitations to the meeting were produced in 4 languages and mailed to a 5,500-name list of agencies and stakeholders throughout the cities of Fremont, Milpitas, San Jose, and Santa Clara. Eighty-six people attended the public scoping meetings. The scoping comment period extended from the publication of the NOI on September 21, 2007 through October 29, 2007. Comments received in response to the NOI were documented and a scoping summary report was prepared. At the end of the scoping period, all comments were reviewed and considered as part of the preparation of the Draft EIS.

Public agencies were consulted throughout the development of the EIS. VTA created an External Technical Advisory Committee (ETAC) consisting of staff representatives from various agencies including: FTA; VTA; Alameda County Transportation Authority/Alameda County Transportation Improvement Authority (ACTA/ACTIA),

Alameda County Congestion Management Agency (ACCMA); BART; ACE; California Department of Transportation (Caltrans); the cities of Fremont, Milpitas, San Jose, and Santa Clara; Santa Clara Valley Water District (SCVWD); Metropolitan Transportation Commission (MTC); and the San Mateo County Transit District (SMCTD). Also, a Policy Advisory Board (PAB), the Silicon Valley Rapid Transit Corridor (SVRTC) PAB, was created to provide important policy guidance and decision-making throughout the Project development. The PAB meetings provide an important forum for discussing corridor-wide issues that extend beyond city and county boundaries. The PAB consists of elected officials from MTC; ACCMA; ACTIA; cities of Fremont, Milpitas, San Jose, and Santa Clara; BART; and VTA. In 2008 the SVRTC PAB was combined with the Warm Springs Extension PAB to form the SVRTC/WSX PAB.

Native American consultation has been conducted through letters sent to the Native American Heritage Commission (NAHC); letters with follow-up phone calls to individual Native American contacts; and two workshops to discuss the Project and Native American concerns. Five Native American contacts declined further involvement in the Project, five contacts responded with comments, and six contacts attended the workshops. Native American consultation will continue throughout the construction period.

The Notice of Availability for the Draft EIS was published in the Federal Register on March 13, 2009. The public comment period ended on May 8, 2009. During the public comment period, the Draft EIS was placed in public libraries and made available at the VTA offices in San Jose. Copies of the Draft EIS were sent to federal, state, regional and local agencies. Copies were provided to all agencies, community groups, and individuals that requested them. The Draft EIS was also available online at VTA's web site. Additional copies and information could be obtained by contacting VTA through the Project information telephone number or via the VTA website.

VTA held three public hearings to receive public comments on the Draft EIS at the following locations: City of San Jose, at the San Jose City Hall on April 6, 2009, City of Milpitas, at the Milpitas Unified School District Board Room on April 13, 2009, and City of Santa Clara, at the Santa Clara Senior Center Auditorium on April 20, 2009. The hearings were advertised in local papers, with mailers, and on the VTA website. Fifty-three people attended the public hearings. A court reporter recorded the verbal testimony, written comments were accepted at the hearings and also via mail, fax, and email throughout the public comment period. Following the close of the public comment period, all substantive written and oral comments on the Draft EIS were considered. Volume 2 of the Final EIS includes all of the substantive comments on the Draft EIS and responses to those comments.

Upon completion of the Final EIS, FTA published a Notice of Availability for the Final EIS on April 16, 2010. At the same time, VTA placed Notices of Availability of the Final EIS in the same six newspapers with circulation in the project area and on the VTA website. Printed copies of the Final EIS were placed in the same locations where copies of the Draft EIS had been previously provided. Copies of the Final EIS were provided to all those who commented on the Draft EIS, public agencies with jurisdiction over various aspects of the Project, and other interested parties who requested copies. In

addition, letters announcing the availability of the Final EIS were sent to those on the Project mailing list. Copies of the document were available by contacting VTA by telephone, email, and the BART website. The Final EIS was available on the VTA website. Comments received during the thirty day Final EIS availability period are discussed below.

BASIS FOR DECISION

Environmental Benefits

FTA has determined, in accordance with 40 CFR 1505.2(a), that the Project is the environmentally preferred alternative for the following reasons:

Transportation Benefits
The Project would have beneficial effects on transportation by providing increased transit capacity and faster, convenient access to and from major Santa Clara County employment and activity centers for corridor residents and residents from throughout the Bay Area and portions of the Central Valley of California. The Project would increase transit ridership and improve mobility options to employment, education, medical, and retail centers for corridor residents, in particular low-income, youth, elderly, disabled, and ethnic minority populations. Transit person trips would increase with the Project compared to the No Build Alternative in 2030. With the Project, overall transit system ridership (for all area wide modes and service providers) would increase by 52,658 riders on the average weekday in 2030. This increase in transit trips indicates a shift in use from automobile to transit. Bicycle and pedestrian access would improve in station areas with the construction of new sidewalks, bike lanes and shared use trails, promoting non-motorized modes of access.

Land Use Benefits
Through its Strategic Plan and System Expansion Policy and Criteria, BART encourages intensification of land uses surrounding BART stations to increase transit opportunities and ridership. The Project would encourage transit-oriented development (TOD), enhancing opportunities to foster "smart growth" in the vicinity of the proposed station sites. The cities of Milpitas and San Jose have developed TOD plans in anticipation of the Project.

The *Milpitas General Plan* designates TOD Overlay Zones that anticipate the proposed BART extension. The *Milpitas Transit Area Specific Plan* proposes redevelopment to include over 7,000 dwelling units and a population of around 18,000, just under 1 million square feet (SF) of office space, approximately 285,000 SF of retail space, and 175,000 SF of hotels (approximately 340 rooms) centered around the proposed Milpitas BART Station and the VTA Montague Light Rail Station.

The *San Jose General Plan* allows for establishing TOD corridors and BART station area nodes under its Land Use/Transportation provisions. TOD is to be promoted in designated special strategy areas, which typically are centered on existing or planned light rail, major bus, and BART stations. Additionally, over 120 acres adjacent to the proposed Berryessa BART Station have been approved for a large-scale mixed-use

transit oriented development (TOD) project. The approved Flea Market Village development will include 2,818 dwelling units, more than 36 acres of public open space, a school, and a mix of commercial and office uses. Overall, the minimum average residential density would be 55.0 units per acre and the maximum average density would be 80.5 units per acre.

Project station area plans are projected to increase the number of households from 1,876 in 2005 to 7,458 in 2030. Project station area plans are also projected to increase the number of jobs from 10,634 in 2005 to 15,676 in 2030. In addition, population density will increase from an FTA rating of low-medium in 2005 to an FTA rating of high in 2030.

Air Quality Benefits
By diverting motor vehicle trips to transit trips, the Project would lead to a reduction in the emission of reactive organic gases and particulate matter from mobile sources, resulting in regional air quality benefits. Such benefits would result from decreases in vehicle miles traveled (VMT) as compared to No Build conditions. Implementation of the Project also would as a result, reduce greenhouse gas emissions. In addition, the Project would reduce toxic air contaminants, because such emissions are related to VMT.

Energy Conservation
The Project would result in an overall decrease in Bay Area transportation energy consumption compared to No Build conditions. The decrease in energy consumption would result from a Project-related decrease in annual automobile VMT. This decrease in VMT would translate into gains in energy efficiency, which would be a net regional benefit.

Responsive to Project Goals and Objectives

The Project would meet the following objectives:

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

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

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

- Support transportation solutions that will be instrumental in maintaining the economic vitality and continuing development of Silicon Valley.

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

- Improve regional air quality by reducing auto emissions.

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

Economic Considerations

The transit Project would increase access to jobs and services for low-income individuals, the elderly and disabled, students, and people with no private means of transportation, thus contributing to the economic well-being of these population groups. Improved transit in Santa Clara County has the potential to expand employment opportunities for the county's workforce to locations outside of the county. It is anticipated that individuals who travel for work from Santa Clara County to San Francisco County would see a positive income differential. This would result in the creation of 3,900 new jobs and $90 million in personal income during the study period. Expenditures from wages received outside of the county by these targeted workers would generate $161 million in gross regional product (GRP) for Santa Clara County.

SUMMARY OF IMPACTS

The Final EIS evaluated operational and construction-related impacts for the Project. A summary of the impacts and associated mitigation measures are provided by topic below. A more detailed description of measures taken to reduce harm is also provided below (following this summary).

Transportation

The Project would increase transit ridership and provide an attractive alternative to the automobile. The Project would have an adverse effect to the level of service at some local intersections and freeway segments. No feasible mitigation measures have been identified to reduce freeway segment impacts. Intersection improvements and payment of a "fair share" contribution to identified improvements would minimize impacts at some of the local intersections. Implementation of the Project would improve pedestrian access and would not have an adverse effect to parking and bike lanes. During construction, bus routes would be temporarily relocated and parking for businesses near the stations would be temporarily displaced.

Air Quality

The Project would result in the net reduction in regional air emissions, which would be a net air quality benefit. Carbon monoxide (CO) levels would not exceed federal or state criteria at intersections or parking garages.

Biological Resources and Wetlands

The Project would result in permanent effects to riparian habitat, and seasonal and freshwater emergent wetlands. During construction, the Project may result in potential effects to protected special-status species. Mitigation measures to avoid or compensate for the adverse effects to sensitive biological resources would be implemented to minimize impacts.

Community Services and Facilities
The Project would not result in adverse effects related to community services and facilities.

Cultural Resources
Given the findings of the archaeological inventory and sensitivity assessment, it is likely that unrecorded archaeological resources that qualify as historic properties would be affected by the Project. Subsurface pre-testing to confirm the presence of these resources and evaluate their significance is not feasible at this time. Therefore, due to the scale of the Project and the sensitivity of the corridor for archaeological resources, it is reasonable to conclude that the Project would adversely affect currently unrecorded historic archaeological properties. A Programmatic Agreement (PA) and a supporting *Archaeological Research Design and Treatment Plan for the Berryessa Extension Project, Fremont, Milpitas, and San Jose, California* were developed and executed by FTA, California Historic Preservation Officer (SHPO), and VTA to minimize the adverse effects of the Project on historic archaeological properties. No historical architectural properties would be affected by the Project.

Electromagnetic Fields
The Project would not result in an adverse effect related to electromagnetic fields.

Energy
Operation of the Project would increase peak period electricity demand which would have an adverse effect on the electrical transmission system. However, the Project would result in an overall reduction in regional energy consumption by reducing vehicle miles traveled (VMT), which would be a net regional benefit.

Geology and Seismicity
The Project would not result in an adverse affect related to geologic and seismic effects.

Hazards and Hazardous Materials
Operation of the Project would not involve transport, use, or disposal of hazardous materials. There is the potential for exposure of workers or the public to hazardous materials in the soil or groundwater during construction, dewatering of the retained cut areas, renovation or demolition of existing structures or maintenance. Additional investigations will be completed on properties to be acquired and appropriate mitigation measures will be identified to reduce potential impacts.

Land Use
The Project would not result in an adverse effect related to land use.

Noise and Vibration
Passing trains would affect nearby sensitive receptors resulting in severe noise impacts to approximately 150 ground floor residential units and 425 second story and above units. Over 300 residential units would be exposed to adverse vibration impacts. The Project would also result in substantial adverse effects due to construction noise at certain locations along the corridor. Mitigation such as sound walls, noise barriers, noise insulation, slab track with acoustical absorption, tire derived aggregate, ballast mats, and floating slabs would minimize operational noise and vibration impacts to sensitive receptors in the area. Mitigation measures such as temporary sound walls, noise control curtains, restriction on work hours, or temporary relocation of impacted residences would be implemented to reduce temporary construction noise impacts. However, some high levels of noise would remain at a few locations following mitigation during construction.

Security and System Safety
The Project would not result in an adverse effect related to security and system safety.

Environmental Justice
The Project would improve mobility options to employment, education, medical, and retail centers for minority and/or low-income populations. Overall, neighborhoods and businesses along the alignment would benefit from the improved transit services to the surrounding areas. The Project would improve air quality along the corridor, also benefitting the adjoining minority/low-income populations. The Project would further benefit the communities by providing increased job opportunities during construction and operation. The Project would increase noise levels at locations along the corridor during construction and operations, adversely affecting some sensitive land uses. However, mitigation measures such as those described under *Noise and Vibration* above would reduce operational and construction noise impacts. Some high levels of noise would remain at a few locations during construction following mitigation; however, noise levels near most sensitive receptors (including low-income and minority communities) would be reduced to within acceptable levels after mitigation measures are incorporated. The Project would adversely affect traffic levels of service at some of the intersections along the corridor. However, overall transportation impacts would be reduced with the Project. The Project would not adversely affect community services or divide an established community.

Socioeconomics
The Project would result in beneficial impacts to local communities by providing short-term construction and long-term operational jobs. However, the Project would cause the displacement of two residential units, 46 businesses, 80 flea market stalls and 900 rental storage units. However, VTA's Relocation Program, including compliance with the federal Uniform Relocation Assistance and Real Property Acquisition Act of 1970 as amended, and applicable state laws would minimize adverse effects of business and residential displacements.

Utilities
The Project would not result in an adverse effect to utilities.

Visual Quality and Aesthetics

The Project would result in the removal of trees which would degrade visual quality**.** Replacement of trees at a 1:1 ratio within the visual analysis area will minimize the visual impact associated with the removal of the trees.

Water Resources

The Project would not result in short- or long-term adverse effects related to water resources.

MEASURES TO MINIMIZE HARM

All practicable means to avoid or minimize environmental harm from the Project have been identified in the Final EIS. VTA will design and construct the Project to incorporate all mitigation measures described in the Final EIS.

VTA has prepared a Mitigation Monitoring and Reporting Plan (MMRP) that contains all the mitigation measures identified in the Final EIS, and is attached as Attachment A. VTA will ensure that the responsible parties implement all mitigation measures provided in the Final EIS and the MMRP.

A Biological Assessment was prepared for the Project in accordance with Section 7 of the federal Endangered Species Act for the California red-legged frog and California tiger salamander. The US Fish and Wildlife Service issued a Letter of Concurrence on the assessment on January 29, 2010. The letter states that the Project is not likely to adversely affect the California red-legged frog or California tiger salamander, as measures are included in the Project to avoid take of these species and compensate for any permanent loss of riparian habitat.

A Biological Assessment/Essential Fish Habitat Assessment was prepared for the Project for the Central California Coast steelhead and Chinook salmon, respectively. The Biological Assessment was prepared in accordance with Section 7 of the federal Endangered Species Act and an Essential Fish Habitat Assessment was prepared in accordance with the Magnuson-Stevens Fishery Conservation and Management Act. The National Marine Fisheries Service issued a Letter of Concurrence on these assessments on February 12, 2010. The letter states that the Project is not likely to adversely affect the Central California Coast steelhead and designated critical habitat at Upper Penitencia Creek, as measures are included in the Project to avoid take of these species.

A Programmatic Agreement (PA) and a supporting *Archaeological Research Design and Treatment Plan for the Berryessa Extension Project, Fremont, Milpitas, and San Jose, California* were developed and executed by FTA, California Historic Preservation Officer (SHPO), and VTA to address adverse effects of the Project on historic archaeological properties. The PA was prepared in accordance with Section 106 of the National Historic Preservation Act (16 USC 470f).

FTA will require in any future funding agreement on the Project, that VTA implement all mitigation measures in accordance with the Final EIS and PA. FTA will monitor mitigation implementation through quarterly review of mitigation commitments during final design and engineering, property acquisition, and construction of the Project.

COMMENTS AND COORDINATION ON THE FINAL EIS

The public has been afforded adequate opportunity to comment on the Final EIS. The U.S. Environmental Protection Agency (EPA) published the Final EIS Notice of Availability in the Federal Register on April 16, 2010.

Four comments were received during the Final EIS comment period. Comments were received from the United States Environmental Protection Agency (EPA), California Public Utilities Commission (CPUC), Stanislaus County Environmental Review Committee, and Andrew Smith. Each of these comments is addressed below.

The EPA commented on the Draft EIS and found that all of their concerns were addressed in the Final EIS. EPA also commended VTA for committing to maintain service levels on other transportation modes when this project becomes operational and to improving BART to bus connections in the corridor. The letter also recommended that FTA and VTA continue regular coordination with the Federal Railroad Administration and the California High Speed Rail Authority to ensure compatibility of the two projects.

The alignment at Dixon Landing Road has been met by conflicting objectives by the City of Milpitas and the CPUC. The City of Milpitas prefers a retained cut alignment while the CPUC prefers a BART At-Grade alignment. However, because the Retained Cut alignment has fewer environmental impacts and mitigation measures, , saves $15-20 million, and is a historically safe railroad crossing, the Dixon Landing Road Retained Cut alignment has been selected. The BART Retained Cut alignment would have the least adverse environmental effects compared to BART At Grade. The BART Retained Cut alignment would cause long-term ground-borne noise and vibration impacts at only 24 residences before mitigation as compared to 60 residences under the BART At Grade alignment. Full or partial closure of Dixon Landing Road under the BART At Grade alignment would result in an unavoidable substantial adverse effect to traffic during construction. BART At Grade with full street closure during construction would have a 30 month duration and be fully closed for 12 months, plus several weekend and night closures. BART At Grade with partial street closure during construction would have a 48 month duration and would be restricted to one lane in each direction for 30 months. BART Retained Cut for comparison would have a 30 month duration of construction with only short term partial street closure, mostly on weekends and at night. The BART At Grade alignment would also require the permanent closure of two driveways west of the alignment, one on the north and one on the south side of Dixon Landing Road, affecting commercial and retail businesses. The Retained Cut alignment does not require these closures. The local jurisdiction, City of Milpitas, has formally stated a preference for the BART Retained Cut alignment.

The difference in costs is estimated to be $15 to 20 million more to construct the BART At Grade alignment. And finally, a search of the FRA's Office of Safety Analysis' Accident Database on June 9, 2010, showed that no accidents between a train and vehicle/pedestrian had been reported from March 31, 2000 through March 31, 2010. Therefore, the Dixon Landing Road Crossing is not an existing unsafe railroad crossing and leaving an existing at-grade crossing would not cause substantial safety impacts.

The Stanislaus County Environmental Review Committee letter stated that they had reviewed the project and had no comments at this time. They did not comment on the Draft EIS.

Andrew Smith, resident of the City of Campbell, also submitted comments. Mr. Smith previously submitted comments on the Draft EIS on April 7, 2009. Mr. Smith's comments on the Final EIS were similar in nature to those which he submitted during circulation of the Draft EIS. Therefore, these additional comments did not raise new environmental issues that have not been addressed in the Final EIS.

ROLES AND RESPONSIBILITIES

VTA was created by the Santa Clara County Transit District Act ("Transit District Act") in 1969, California Public Utilities Code Sections 100000-100500, to construct and operate a transit system within and outside of the County of Santa Clara. Until 1995, VTA's primary responsibility was the development, operation and maintenance of the bus and light rail system within the county. In January 1995, VTA also became the region's Congestion Management Agency, thus undertaking the responsibility of managing the county's blueprint to reduce congestion and improve air quality. At that time, the Transit District Act was amended to establish a new governing Board for the agency, and later the name was changed to the Santa Clara Valley Transportation Authority.

VTA is the Project sponsor and has prepared the EIS for the Project. VTA previously prepared an EIR and SEIR for the BART Extension Project to Milpitas, San Jose, and Santa Clara in accordance with CEQA.

BART was created by the San Francisco Bay Area Rapid Transit District Act, California Public Utilities Code Sections 28500-29757 (the "BART Act") to construct and operate a rapid transit system to serve the metropolitan area surrounding San Francisco Bay. BART currently operates a 104 mile-, 43-station regional rail system serving four Bay Area Counties. The Project covered by this Record of Decision is the extension of the BART system from the Warm Springs Extension and Station in Fremont, that are under construction, at the southern edge of Alameda County, into Santa Clara County through the City of Milpitas and terminating in the City of San Jose. The BART Act grants BART the powers necessary to design and build extensions of the BART system, including the power to acquire property, incur indebtedness, relocate utilities, and enter into contracts with public and private entities.

The 2001 *Comprehensive Agreement between the Santa Clara Valley Transportation Authority (VTA) and the San Francisco Bay Area Rapid Transit District (BART) in Connection with the Proposed Santa Clara County BART Extension* defined the responsibilities for planning, designing, constructing, operating, and maintaining, the extension of the BART system from the Warm Springs Station to Santa Clara County. In carrying out its authority, VTA is responsible for Project development, including planning, alternatives analysis, capital cost estimation, and preliminary engineering. VTA and FTA are responsible for environmental review of the Project, including compliance with the requirements of NEPA and other federal laws. VTA will be responsible for ensuring the implementation of the Mitigation Monitoring and Reporting Plan, as described in detail in Attachment A.

BART is responsible for operating and maintaining the Project. The Project would be operated and maintained as an integral part of the BART system consistent with BART service requirements and standards. Ongoing operating, maintenance and capital costs related to the Project, both those that occur within and/or outside Santa Clara County, is the financial responsibility of VTA.

DETERMINATIONS AND FINDINGS

Environmental Protection (49 USC Sections 5301(e) and 5324(b))

The environmental record for the Project is included in the Draft and Final EIS. Cumulatively, these documents represent the detailed statement required by both NEPA and the Federal Transit Laws, 49 USC Sections 5301(e) and 5324(b), regarding the environmental impacts of the Project, any adverse environmental effects which cannot be avoided should the Project be implemented, alternatives to the Project, and any irreversible and irretrievable impacts on the environment which may be involved in the Project should it be implemented.

On the basis of the evaluation of social, economic, and environmental impacts as presented in the Final EIS, the Mitigation Monitoring And Reporting Plan, and the written and oral comments offered by the public and other agencies, FTA has determined, in accordance with 49 USC Section 5324(b), that:

1. An adequate opportunity was afforded for the presentation of views by all parties with a significant economic, social, and environmental interest in the Project and full consideration has been given to the preservation and enhancement of the environment and to the interests of the community in which the Project is to be located; and,

2. All reasonable steps have been taken to minimize the adverse environmental effects of the Project and where adverse environmental effects remain, no feasible and prudent alternative to avoid or further mitigate such effect exists.

Historic Architectural and Archaeological Resources

The State Historic Preservation Officer (SHPO) has concurred, following consultation and coordination with FTA and VTA, that there are no historic architectural properties

within the Project area of potential effects. SHPO also agreed that, due to the findings of the archaeological inventory and sensitivity assessment and the infeasibility of subsurface pre-testing, execution of a Programmatic Agreement (PA) with a supporting treatment plan is appropriate to complete the final identification and evaluation of potential historic properties and provide for a phased resolution of any adverse effects on historic properties. Therefore, on March 25, 2010, the SHPO, FTA, and VTA executed a PA to resolve the potential for adverse impacts to historic archaeological properties, consistent with the requirements of Section 106 of the National Historic Preservation Act. The execution of the PA is identified in Section 5.4.2 of the Final EIS as the mitigation measure for Cultural and Historical Resources and is incorporated by reference in Attachment A: Mitigation Monitoring and Reporting Plan.

Conformity with Air Quality Plans

The federal Clean Air Act (CAA), as amended, requires that transportation projects conform with the State Implementation Plan's (SIP) purpose of eliminating or reducing the severity and number of violations of the national ambient air quality standards and of achieving expeditious attainment of such standards. The EPA regulation implementing this provision of the CAA (40 CFR Part 93) establishes criteria for demonstrating that a transportation project conforms with applicable air quality plans.

In order to demonstrate conformity with the federally approved SIP, as required by EPA conformity regulations, a project must satisfy a number of conditions established in the regulations. The Project satisfies the EPA conformity requirements, as documented in the Final EIS in Section 5.1. In particular, the Project does not interfere with any Transportation Control Measure. The Project is in a currently conforming plan and program, as identified in both the 2035 Regional Transportation Plan (Transportation 2035 Plan) and the 2009 Transportation Improvement Program for the San Francisco Bay Area. The Project will not cause or contribute to any CO hotspots, according to modeling that showed no violation of federal or state CO air quality standards. The Project would result in a reduction in PM2.5 and PM10 of particulate emissions when compared to the No Build conditions.

Section 4(f) Finding

Section 4(f) of the Department of Transportation Act of 1966 (49 USC Section 303) affords special protection to parks, recreation areas, wildlife refuges, and historic sites. Impacts assessed under Section 4(f) include: (1) impacts due to permanent taking or acquisition of lands as identified above, and (2) impacts due to "constructive use" or impairment of 4(f) designated land uses due to proximity of a project. Chapter 7 of the Final EIS addresses this topic. The FTA has determined, in consultation with the United States Department of Interior and the SHPO, that there is one identified 4(f) property in the Project area, the Parc Metro East Park in the City of Milpitas. The Project would require acquisition of a 20-foot strip of land adjacent to the railroad ROW on the eastern edge of Parc Metro East Park. The total area required is less than 0.1 acres and is currently improved with landscaping. This land is needed to accommodate the relocation of the freight track to the west side of the railroad ROW. The remainder of the park includes park amenities including an open lawn area with benches, swings, and

other play equipment that is available for general use by Milpitas citizens. The type of Section 4(f) use at the park property is the direct use resulting from the acquisition and permanent incorporation of the property into the Project. However, there is no feasible and prudent alternative alignment that would avoid the use of this resource, and the Project includes all possible planning to minimize harm to this resource resulting from such use.

Also, due to the scale of the Project and the sensitivity of the corridor for archaeological resources, it is reasonable to conclude that the Project would impact currently unrecorded historic archaeological properties. If an eligible historic resource is found during construction, a separate supplemental Section 4(f) evaluation will be completed. The Project includes planning to minimize harm to unrecorded historic archaeological properties, as evidenced by the Programmatic Agreement executed by the SHPO, FTA, and VTA on March 25, 2010, the supporting treatment plan, and contractual requirements that address unanticipated discovery of archaeological resources.

FTA and VTA have also consulted with the California Native American Heritage Commission (NAHC) and with individual Native American contacts regarding the potential existence of sacred lands within the Project area. NAHC did not identify any such lands in the Project area. The Native American contacts have provided information on the Native American remains discovered in the general area. FTA and VTA will continue to consult with NAHC and individual Native American contacts throughout the duration of the Project in order to anticipate and evaluate any Native American cultural resource issues that arise.

Environmental Justice

Executive Order 12298, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations" (February 11, 1994), provides that FTA identify and address "disproportionately high and adverse human health or environmental effects" of federally-funded mass transit projects "on minority populations and low-income populations... ," and that FTA "conduct its programs, policies, and activities in a manner that ensures that such programs, policies, and activities do not have the effect of subjecting persons ... to discrimination ... because of their race, color, or national origin." In accordance with the terms of Executive Order 12898 and the guidance set forth in the Presidential Memorandum accompanying the Executive Order, FTA and VTA applied the analytical framework of NEPA to assess the effects of the Project on minority and low-income populations in the project area. From these analyses, FTA has determined that minority populations and low-income populations in the project area will not be subjected to discrimination through the construction or operation of the Project, and furthermore, that all people within the project area will enjoy significantly improved mobility as a result of the Project. Sections 4.12 and 5.12 of the Final EIS address this subject, providing an overview of the income and minority demographics of the study area and an assessment of the potential impacts on minority or low-income populations in the corridor. The Project would not result in disproportionately high and adverse human health or environmental effects on minority or low-income population groups.

The Project also complies with the provisions of the Department of Transportation Title VI Regulations at 49 CFR part 21 and FTA Circular 4702.1A, Title VI and Title VI-Dependent Guidelines for Federal Transit Administration Recipients.

Protection of Children

Executive Order 13045 requires federal agencies carrying out "covered regulatory actions" to identify and assess environmental health and safety risks that may disproportionately affect children. The proposed Project is not a covered regulatory action as defined in Executive Order 13045, and therefore does not directly apply. However, in keeping with the spirit and intent of Executive Order 13045, consideration was given to whether the Project would disproportionately affect children. As documented in Section 5.3 of the Final EIS, impacts to community services and facilities were considered, including impacts to schools in the vicinity of the Project. In addition, Final EIS Section 5.10 considered noise and vibration impacts in the vicinity of sensitive receptors, including schools, and Section 5.1 addressed air quality impacts. No substantial adverse effects to schools in the vicinity of the proposed Project were identified. Further, mitigation measures that will be implemented for each of these types of environmental issues will also mitigate any impacts to schools. Accordingly, no impacts on the health or safety of children are anticipated. FTA therefore concludes that the Project is consistent with Executive Order 13045.

Floodplain Impact

Executive Order 11988 links the need to protect lives and property with the need to restore and preserve natural and beneficial floodplain values. Specifically, federal agencies are directed to avoid conducting, allowing, or supporting actions on the base flood plain unless the agency finds that the base flood plain is the only practicable alternative location. Similarly, Department of Transportation (DOT) Order 5650.2, which implements Executive Order 11988 and was issued pursuant to NEPA, the National Flood Insurance Act of 1968, and the Flood Disaster Protection Act of 1973, prescribes policies and procedures for ensuring that proper consideration is given to the avoidance and mitigation of adverse flood plain impacts in agency actions, planning programs, and budget requests. As documented in Section 5.15 of the Final EIS, the Project does encroach onto the flood plains of Agua Caliente Creek, Scott Creek, Berryessa Creek, Upper Penitencia Creek, and Coyote Creek. However, the Project will be built in accordance with all state and local flood plain protection standards. FTA therefore concludes that Executive Order 11988 and DOT Order 5650.2 are satisfied.

Wetland Impact

DOT Order 5660.1.A requires DOT to "assure the protection, preservation, and enhancement of the nation's wetlands to the fullest extent practicable during the planning, construction and operation of transportation facilities and projects." In addition, in accordance with Executive Order 11990, "new construction located in wetlands shall be avoided unless there is no practicable alternative to the construction and that the proposed action includes all practicable measures to minimize harm to

wetlands which may result from such construction." As discussed in Section 5.2 of the Final EIS, approximately 0.56 acres of seasonal and freshwater emergent wetlands would be impacted when the Project is constructed due to the improvement of drainage in the ROW. VTA has been in consultation and coordination with the U.S. Army Corps of Engineers, National Marine Fisheries Service, California Department of Fish and Game, Santa Clara Valley Water District, and Regional Water Quality Control Board to offset any adverse effects to wetlands and riparian habitat due to the Project. FTA and VTA have determined that there is no feasible or practicable alternative to the Project that would avoid these impacts. Furthermore, the mitigation measures contained in the Final EIS and included in the Mitigation Monitoring and Reporting Plan, including plans to minimize wetland impacts and to replace or restore impacted wetland areas, represent all practicable measures to minimize harm to wetlands from the Project. FTA therefore concludes that DOT Order 5660.1.A and Executive Order 11990 are satisfied.
by designing and implementing onsite mitigation that will improve existing conditions at Upper Penitencia Creek. Specifically, the mitigation will include removing a 90 degree turn in the creek at the Berryessa Station site, creating a flood bench with wetland vegetation, and creating riparian habitat on both sides of the realigned creek.

Endangered Species Act

The Endangered Species Act (ESA) requires federal agencies to ensure that the actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of threatened or endangered species or result in the destruction or adverse modification of critical habitat for these species. Under Section 7 of the ESA, the federal agency authorizing, funding, or carrying out an action must consult with the U.S. Fish and Wildlife Service or National Marine Fisheries Service, as appropriate, to ensure that the action will not jeopardize endangered or threatened species or destroy or adversely modify designated critical habitat.

A Biological Assessment was prepared for the Project in accordance with Section 7 of the ESA for the California red-legged frog and California tiger salamander. The California tiger salamander (Central California distinct population) and California red-legged frog have been listed as threatened under ESA. No critical habitat is designated for California red-legged frog or for California tiger salamander in the Project area. A letter requesting informal consultation under Section 7 was sent by FTA to the U.S. Fish and Wildlife Service on January 13, 2010. The U.S. Fish and Wildlife Service issued a Letter of Concurrence on the assessment on January 29, 2010. The letter states that the project is not likely to adversely affect the California red-legged frog or California tiger salamander, as measures are included in the Project to avoid take of these species during construction. The Project also is required to compensate for any permanent loss of riparian habitat by creating and restoring riparian habitat along Upper Penitencia Creek within the Project area.

A Biological Assessment was prepared for the Project for the Central California Coast steelhead, listed as threatened under ESA. Critical habitat has also been designated in Upper Penitencia Creek, Coyote Creek, and the Guadalupe River in the Project area for steelhead. A letter requesting informal consultation under Section 7 was sent by FTA to the National Marine Fisheries on December 4, 2009. The National Marine Fisheries Service issued a Letter of Concurrence on this assessment on February 12, 2010. The

letter states that the project is not likely to adversely affect the Central California Coast steelhead and designated critical habitat, as measures are included in the Project to avoid take of this species during construction and compensate for any permanent loss of riparian habitat by creating and restoring riparian habitat within the Project area.

FI'A concludes that the consultation requirements pursuant to Section 7 of the Endangered Species Act are satisfied.

NEPA Finding

In accordance with 23 CPR Part 771, FI'A finds that all reasonable alternatives and significant impacts on the environment associated with the Project have been evaluated and mitigation measures are described in the Final EIS that are to be incorporated into the proposed action. This finding is based on the environmental analyses set forth in the Final EIS and prior studies of the Project (including the 2009 Draft EIS, the 2004 Draft EIS/EIR/Final EIR and the 2007 Draft SEIRIFinal SEIR), and those documents are hereby incorporated by reference into this finding. Furthermore, this finding is premised on VTA's obligations to carry out the mitigation measures attached hereto and identified in those documents.

JUN 24 2010

Leslie T. Rogers
Federal Transit Administration, Region IX
Regional Administrator

Date

ATTACHMENTS
Attachment A- Mitigation Monitoring and Reporting Plan
Attachment B – Programmatic Agreement

Environmental Issue	Mitigation Measure #	Mitigation Measure	Implementation		
			Timeframe	Responsible Party(ies)	Oversight
Vehicular Traffic, Intersections **Milpitas Station**: Great Mall Parkway and Montague Expressway	**TR-1**	There are no other cost effective feasible improvements that can be made at this intersection beyond those identified under the 2030 No Build conditions. The necessary improvement to mitigate the Project's adverse effect at this intersection would require grade separation of the intersection. It should be noted that the grade separation of this intersection is included in the Valley Transportation Plan 2030 (VTP 2030) project list. However, this improvement was not included as part of the year 2030 roadway network since it was not included in the VTA 2030 (SVRTC) traffic model used for this analysis. Thus, as a conservative approach and in order to analyze the worst case scenario, this improvement was not considered to be implemented by the year 2030. Although the Project would adversely affect this intersection, grade separation of this intersection was identified as the needed improvement under 2030 No Build conditions. Therefore, since the Project would contribute to the need for grade separation of the Great Mall/Montague intersection, the Project will contribute a "fair share" amount toward the implementation of this improvement.	Implemented as warranted by demand	VTA Program Office, County of Santa Clara, City of Milpitas	VTA Environmental Planning
Vehicular Traffic, Intersections **Milpitas Station**: Milpitas Blvd and Montague Expressway	**TR-2**	Possible improvements include a second westbound left-turn lane. Though intersection operations would slightly improve, the Project's adverse affect to this intersection would not be mitigated. Due to the relatively high projected volumes, there are no feasible at-grade improvements to mitigate adverse effects at this intersection. Because the Project would contribute to traffic congestion at this intersection, the Project will contribute a 'fair share' amount toward the implementation of this traffic improvement. Should a feasible improvement be determined, a 'fair share' contribution will be evaluated at that time.	Implemented as warranted by demand	VTA Program Office, City of Milpitas	VTA Environmental Planning
Vehicular Traffic, Intersections **Milpitas Station:** Park Victoria Drive and Yosemite Drive	**TR-3**	The necessary improvement to mitigate the Project's adverse affect to this intersection consists of the addition of a second northbound left-turn lane. The implementation of this improvement would improve intersection level of service to an acceptable Level of Service (LOS) D during the AM peak hour. It should be noted that changes to the signal timing at this location to accommodate future traffic volumes may improve intersection levels of operation without physical improvements.	Implemented as warranted by demand	VTA Construction	VTA Environmental Planning

Environmental Issue	Mitigation Measure #	Mitigation Measure	Implementation		
			Timeframe	Responsible Party(ies)	Oversight
Vehicular Traffic, Intersections **Milpitas Station:** Old Oakland/Main Street and Montague Expressway	**TR-4**	There are no further feasible improvements beyond the planned Montague widening assumed under No Action conditions that can be implemented to improve intersection levels of service to acceptable levels. Because the project would contribute to traffic congestion at this intersection, the project will contribute a 'fair share' amount toward the implementation of the identified traffic improvement under 2030 No Action conditions. Should a feasible improvement be determined, a 'fair share' contribution will be evaluated at that time.	Implemented as warranted by demand	VTA Program Office, County of Santa Clara, City of San Jose	VTA Environmental Planning
Vehicular Traffic, Intersections **Milpitas Station:** Trade Zone Blvd and Montague Expressway	**TR-5**	There are no further feasible improvements beyond the planned Montague widening assumed under No Action conditions that can be implemented to improve intersection levels of service to acceptable levels. Because the project would contribute to traffic congestion at this intersection, the project will contribute a 'fair share' amount toward the implementation of the identified traffic improvement under 2030 No Action conditions. Should a feasible improvement be determined, a 'fair share' contribution will be evaluated at that time.	Implemented as warranted by demand	VTA Program Office, County of Santa Clara, City of San Jose	VTA Environmental Planning
Vehicular Traffic, Intersections **Berryessa Station:** Flickinger Ave and Berryessa Rd	**TR-6**	There are no other feasible improvements that can be made at this intersection beyond those described for 2030 No Action conditions to mitigate project impacts. Because the project would contribute to traffic congestion at this intersection, the project will contribute a 'fair share' amount toward the implementation of the identified traffic improvement under 2030 No Action conditions. Should a feasible improvement be determined, a 'fair share' contribution will be evaluated at that time.	Implemented as warranted by demand	VTA Program Office, City of San Jose	VTA Environmental Planning
Vehicular Traffic, Intersections **Berryessa Station:** Lundy Ave and Berryessa Rd	**TR-7**	There are no cost effective feasible improvements that can be made beyond those described for 2030 No Build conditions to mitigate Project's adverse effects. The necessary improvement to mitigate the adverse effect at this intersection to an acceptable level consists of the addition of a fourth westbound through lane on Berryessa Road. This improvement is not feasible due to ROW constraints. Because the Project would contribute to traffic congestion at this intersection, it will contribute a 'fair share' amount toward the implementation of this traffic improvement. Should a feasible improvement be determined, a 'fair share' contribution will be evaluated at that time.	Implemented as warranted by demand	VTA Program Office, City of San Jose	VTA Environmental Planning
Vehicular Traffic, Intersections **Berryessa Station:** King Road and Mabury Rd	**TR-8**	The necessary improvement to mitigate the Project's adverse effect at this intersection to an acceptable level consists of the addition of a second westbound left-turn lane. The implementation of this improvement would improve intersection level of service to an acceptable LOS D.	Implemented as warranted by demand	VTA Construction	VTA Environmental Planning

Environmental Issue	Mitigation Measure #	Mitigation Measure	Implementation		
			Timeframe	Responsible Party(ies)	Oversight
Vehicular Traffic, Intersections **Berryessa Station:** US 101 and Julian Street	**TR-9**	There are no other feasible improvements that can be made at this intersection beyond those planned as part of the station development. VTA proposes that the intersection be added to the city's list of Protected Intersections and adhere to the Protected Intersection Policy. The LOS policy specifies that Protected Intersections consist of locations that have been built to their planned maximum capacity and where expansion of the intersection would have an adverse effect upon other transportation facilities (such as pedestrian, bicycle, and transit systems). If a development project has significant traffic impacts at a designated Protected Intersection, the project may be approved if offsetting Transportation System Improvements are provided that enhance pedestrian, bicycle and transit facilities to the community near the Protected Intersection. As part of the development of the station, surrounding pedestrian, bicycle and transit facilities will be enhanced to serve the station and surrounding community.	Implemented as warranted by demand	VTA Program Office, City of San Jose	VTA Environmental Planning
Vehicular Traffic, Intersections **Berryessa Station:** King Rd and McKee Rd	**TR-10**	There are no cost effective feasible improvements that can be made beyond those described for 2030 No Build conditions to mitigate adverse effects from the Project. The necessary improvement to mitigate the Project's adverse effect at this intersection to an acceptable level consists of the addition of a third westbound through lane. However, this improvement would require the widening of McKee Road, which is not feasible due to Right of Way (ROW) constraints. Because the Project would contribute to traffic congestion at this intersection, it will contribute a 'fair share' amount toward the implementation of this traffic improvement. Should a feasible improvement be determined, a 'fair share' contribution will be evaluated at that time.	Implemented as warranted by demand	VTA Program Office, City of San Jose	VTA Environmental Planning
Vehicular Traffic, Intersections **Berryessa Station:** Capitol Ave and McKee Rd	**TR-11**	There are no cost effective feasible improvements that can be made beyond those described for 2030 No Build conditions to mitigate the Project's adverse effects. With the newly constructed Capitol Light Rail Transit (LRT) line, Capitol Avenue has been upgraded to its extent to allow for the operation of the LRT in its median. Further improvement of the intersection would not be compatible with LRT operations. VTA will comply with the Protected Intersection Policy as required including providing fair-share funding (amount to be negotiated) towards the construction of identified offsetting improvements.	Implemented as warranted by demand	VTA Program Office, City of San Jose	VTA Environmental Planning
Vehicular Traffic, Intersections **Berryessa Station:**	**TR-12**	Possible improvements include the addition of a second northbound left-turn lane. Though adverse effects would be mitigated and intersection level of service would improve with this improvement, the level of service	Implemented as warranted by demand	VTA Construction	VTA Environmental Planning

Environmental Issue	Mitigation Measure #	Mitigation Measure	Implementation		
			Timeframe	Responsible Party(ies)	Oversight
McLaughlin Ave and Story Rd		would remain an unacceptable LOS E during the PM peak hour. The necessary improvement to improve intersection level of service to an acceptable level consists of the addition of a third southbound left-turn lane and widening of Story Road from six to eight through lanes. This improvement would require the widening of both McLaughlin Avenue and Story Road, which is infeasible due to ROW constraints.			
Vehicular Traffic, Intersections **Berryessa Station:** King Rd and Story Rd	**TR-13**	There are no cost effective feasible improvements that can be made beyond those described for 2030 No Build conditions to mitigate the Project's adverse effects. The necessary improvement to mitigate the Project's effect at this intersection to an acceptable level consists of the widening of King Road from four to six through lanes. The widening of King Road is not feasible due to ROW constraints. Because the Project would contribute to traffic congestion at this intersection, it will contribute a 'fair share' amount toward the implementation of this traffic improvement. Should a feasible improvement be determined, a 'fair share' contribution will be evaluated at that time.	Implemented as warranted by demand	VTA Program Office, City of San Jose	VTA Environmental Planning
Vehicular Traffic, Intersections **Berryessa Station:** Capitol Expressway and Capitol Ave	**TR -14**	There are no cost effective feasible improvements that can be made beyond those described for 2030 No Build conditions to mitigate the Project's adverse effects. With the newly constructed Capitol LRT line, Capitol Avenue has been upgraded to its extent to allow for the operation of the LRT in its median. Further improvement of the intersection would not be compatible with LRT operations. VTA proposes that the intersection be added to the city's list of Protected Intersections and adhere to the Protected Intersection Policy. The LOS policy specifies that Protected Intersections consist of locations that have been built to their planned maximum capacity and where expansion of the intersection would have an adverse effect upon other transportation facilities (such as pedestrian, bicycle, and transit systems). If a project has significant traffic impacts at a designated Protected Intersection, the project should provide offsetting Transportation System Improvements that enhance pedestrian, bicycle and transit facilities to the community near the Protected Intersection. VTA will comply with the Protected Intersection Policy as required including providing fair-share funding (amount to be negotiated) towards the construction of identified offsetting improvements.	Implemented as warranted by demand	VTA Program Office, City of San Jose	VTA Environmental Planning

Environmental Issue	Mitigation Measure #	Mitigation Measure	Implementation		
			Timeframe	Responsible Party(ies)	Oversight
BIOLOGICAL RESOURCES					
Riparian Habitat	**BIO-1**	**Avoidance of Riparian Habitat.** VTA will design all project facilities to avoid temporary and permanent adverse effects to riparian habitat to the maximum extent practicable. Central Coast cottonwood-sycamore riparian forest areas identified along Upper Penitencia will be identified and marked with protective orange fencing to avoid disturbance or accidental intrusion by workers or equipment.	Prior to and During Construction	VTA Construction	VTA Environmental Planning
Riparian Habitat (continued)	**BIO-2**	**Compensation for Adverse Effect to Riparian Habitat**. If avoidance is not feasible, adverse effects to the riparian habitat will be mitigated at ratios based on the quality of habitat to be affected. A 3:1 ratio or another ratio would be determined in consultation with California Department of Fish and Game (CDFG). A detailed riparian restoration plan will be prepared. This plan will provide for the replacement of lost acreage as well as values and functions of riparian habitat, including shaded riverine aquatic cover vegetation, and locations of restoration opportunities, with a technical approach to create high-quality riparian and shaded riverine aquatic cover habitat. Mitigation for adverse effects to riparian habitat will be in-kind, except that non-native species will be replaced with commercially available native species common to the planting area, and on-site to the maximum extent practicable. If mitigation cannot be accommodated entirely on-site, VTA will coordinate with CDFG to identify other potential riparian mitigation sites within the affected watershed. A qualified biologist, in coordination with resource agency personnel, will prepare a mitigation and monitoring plan for adverse effects to riparian habitat due to the project.	Prior to and During Construction	VTA Environmental Planning, VTA Construction	VTA Environmental Planning, CDFG
Wetlands	**BIO-3**	**Avoidance of Wetland Habitat.** Design all project facilities to avoid temporary and permanent adverse effects to wetlands and waters of the US to the maximum extent practicable.	Prior to Construction	VTA Construction	VTA Environmental Planning

Environmental Issue	Mitigation Measure #	Mitigation Measure	Implementation		
			Timeframe	Responsible Party(ies)	Oversight
Wetlands (continued)	**BIO-4**	**Compensation for Adverse Effect to Wetland Habitat**. If avoidance is not feasible, VTA will mitigate permanent loss of wetlands at a minimum 2:1 ratio (replacement area : loss area), and the temporary loss of wetlands at a minimum 1:1 ratio, or at higher ratios determined in consultation with resource agency personnel. Permanent and temporary adverse effects to waters of the U.S. will be mitigated at minimum 1:1 ratio, or at a higher ratio determined in consultation with resource agency personnel. Mitigation ratios will be agreed upon with appropriate resource agencies prior to certification of the Final EIS. Mitigation will be on-site and in-kind to the maximum extent practicable. If mitigation cannot be accommodated entirely on-site, VTA will investigate other mitigation opportunities in coordination with resource agency personnel within the affected watershed, if possible. In anticipation of this, VTA is currently in discussions with the Regional Water Quality Control Board (RWQCB) and the City of Milpitas to develop a mitigation site on Wrigley Creek, which includes redesigning the linear channel to include meanders and more natural features. A qualified biologist, in coordination with resource agency personnel, will prepare a mitigation and monitoring plan for adverse effects to wetlands and waters of the U.S. due to the project. This plan will comply with the March 2008 Compensatory Mitigation Rule published by the United States Environmental Protection Agency (EPA) and Army Corps of Engineers (ACOE) and will include objectives; site selection criteria; site protection instruments (e.g., conservation easements); baseline information (for impact and compensation sites); credit determination methodology; a mitigation work plan; a maintenance plan; ecological performance standards; monitoring requirements; a long-term management plan; an adaptive management plan; and financial assurances.	Prior to and During Construction	VTA Environmental Planning, City of Milpitas, VTA Construction	VTA Environmental Planning, ACOE, RWQCB

Environmental Issue	Mitigation Measure #	Mitigation Measure	Implementation		
			Timeframe	Responsible Party(ies)	Oversight
CULTURAL AND HISTORICAL RESOURCES					
Historic Archaeological Properties	**CUL-1**	**Programmatic Agreement (PA) and a Cultural Resources Treatment Plan (CRTP).** A Programmatic Agreement (PA) and a supporting Cultural Resources Treatment Plan (CRTP) were developed and were executed by FTA, the State Historic Preservation Officer (SHPO), and VTA in consultation with the appropriate government and historic preservation bodies, and Native American community. The CRTP specifies the National Register of Historic Places (NRHP) criteria that will be applicable, the procedures to be used to implement the Section 106 process in the field, and the standards of evaluation that will be appropriate given the locations and kinds of cultural properties predicted. The CRTP also presents methods that combine pre-testing where possible (i.e., on open lots or undeveloped lands); testing after demolition of extant structures but before new ground-disturbing construction begins; construction-phase monitoring where appropriate; and standards for data recovery. In any event, areas within the Area of Potential Effect (APE) where potential resources have been identified, or that are designated as highly or moderately sensitive, will be field investigated, concentrating on, but not confined to, the area of direct effect. The CRTP meets *The Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation* (U.S. Department of the Interior, National Park Service, 1983, as amended and annotated).	Prior to and During Construction	VTA Environmental Planning, VTA Construction, interested stakeholders	VTA Environmental Planning, FTA, SHPO, Advisory Council on Historic Places
HAZARDOUS MATERIALS					
Soil Contamination	**HM-1**	Additional site-specific information will be collected and documented regarding hazardous materials use and hazardous waste generation for properties that would be acquired for ROW or support facilities. Collection of information will include visual inspections of properties or portions of properties that were inaccessible during preparation of this environmental document. Regulatory agency files will be reviewed for these properties to confirm whether soil has been affected by any reported releases and/or whether the sites are within an area where excavation will occur during construction.	Prior to Construction	VTA Construction	VTA Environmental Planning
Soil Contamination	**HM-2**	A Phase Two site investigation will be completed for properties that would be acquired for ROW or support facilities for the Project in areas where soil contamination is documented, where soil contamination is nearby, or where current information regarding the extent of soil contamination is inconclusive. A Site Sampling Plan will be developed	Prior to Construction	VTA Construction	VTA Environmental Planning

Environmental Issue	Mitigation Measure #	Mitigation Measure	Implementation		
			Timeframe	Responsible Party(ies)	Oversight
		and implemented prior to any investigation. The plan will include a description of the work to be performed, the laboratory analytical methods to be used, and any specific requirements and quality control information.			
Groundwater Contamination	**HM-3**	Additional site-specific information will be collected and documented regarding hazardous materials use and hazardous waste generation for properties that would be acquired for ROW or support facilities for the Project. Regulatory agency files will be reviewed for these properties to confirm whether groundwater has been affected by any reported releases and/or whether the sites are within an area where excavation during construction would encounter groundwater.	Prior to Construction	VTA Construction	VTA Environmental Planning
Groundwater Contamination	**HM-4**	A Phase Two site investigation will be completed for properties that would be acquired for ROW or support facilities for the Project in areas where groundwater contamination is documented, where groundwater contamination is nearby, or where current information regarding the extent of groundwater contamination is inconclusive. A Site Sampling Plan will be developed and implemented prior to any investigation. The plan will include a description of the work to be performed, the laboratory analytical methods to be used, and any specific requirements and quality control information.	Prior to Construction	VTA Construction	VTA Environmental Planning
NOISE AND VIBRATION					
Noise and Vibration	**NV-1**	**Noise Barriers / Sound Walls**. Sound walls shall be installed to mitigate noise levels near residences impacted, as identified in NV-2 through NV-19. Approximately 12,500 linear feet of sound walls would be needed, with each sound wall ranging in length from 250 to 1,730 feet. Typically, the location of the sound wall is either 10 feet or 13 feet from the track centerline, depending upon the track profile. Ten feet is for the retained open cut track and the aerial guideway, and 13 feet for the at-grade and embankment tracks. In areas where a sound wall is recommended on both sides of the alignment, absorptive sound walls are the recommended noise mitigation. The Project includes an 8-foot high community wall along residential areas to the east. This community wall would reduce Severe Impacts to a Moderate or less Impact for the North Option except for the portion between Berryessa Road and the residential area to the north of Salamoni Court. An 8-foot high noise barrier would need to continue northward along the future transit facility surface parking lot and access	During Construction	VTA Construction	VTA Environmental Planning

Environmental Issue	Mitigation Measure #	Mitigation Measure	Implementation		
			Timeframe	Responsible Party(ies)	Oversight
		road to Berryessa Road to reduce this noise impact to less than severe. With this community wall, the second story residences along Salamoni Court and on the eastern boundary to Mabury Road may still be impacted depending on the noise insulation reduction capability of existing residential construction. The need for additional noise insulation of these residences would need to be determined on a residence by residence basis.			
Noise and Vibration (continued)	**NV-2**	A 1420-foot long, 4-foot high sound wall shall be installed along the west (S1) side of the track from STA 230+80 to STA 245+00,	During Construction	VTA Construction	VTA Environmental Planning
Noise and Vibration (continued)	**NV-3**	A 750-foot long, 4-foot high sound wall shall be installed along the west (S1) side of the track from STA 246+50 to STA 254+00,	During Construction	VTA Construction	VTA Environmental Planning
Noise and Vibration (continued)	**NV-4**	A 750-foot long, 12-foot high sound wall shall be installed along the west (S1) side of the track from STA 330+00 to STA 337+50,	During Construction	VTA Construction	VTA Environmental Planning
Noise and Vibration (continued)	**NV-5**	An 1100-foot long, 10-foot high absorptive sound wall shall be installed along the west (S1) side of the track from STA 493+50 to STA 506+00,	During Construction	VTA Construction	VTA Environmental Planning
Noise and Vibration (continued)	**NV-6**	A 250-foot long, 9-foot high absorptive sound wall shall be installed along the west (S1) side of the track from STA 506+00 to STA 508+50,	During Construction	VTA Construction	VTA Environmental Planning
Noise and Vibration (continued)	**NV-7**	An 830-foot long, 14- to 15-foot high sound wall shall be installed along the east (S2) side of the track from STA 168+20 to STA 176+50,	During Construction	VTA Construction	VTA Environmental Planning
Noise and Vibration (continued)	**NV-8**	A 300-foot long, 8-foot high sound wall shall be installed along the east (S2) side of the track from STA 181+00 to STA 184+00,	During Construction	VTA Construction	VTA Environmental Planning
Noise and Vibration (continued)	**NV-9**	A 620-foot long, 4-foot high sound wall shall be installed along the east (S2) side of the track from STA 186+00 to STA 192+20,	During Construction	VTA Construction	VTA Environmental Planning
Noise and Vibration (continued)	**NV-10**	A 350-foot long, 7-foot high sound wall shall be installed along the east (S2) side of the track from STA 409+00 to STA 412+50,	During construction	VTA Construction	VTA Environmental Planning
Noise and Vibration (continued)	**NV-11**	A 1050-foot long, 7-foot high sound wall shall be installed along the east (S2) side of the track from STA 412+50 to STA 423+00,	During Construction	VTA Construction	VTA Environmental Planning
Noise and Vibration (continued)	**NV-12**	A 1730-foot long, 9-foot high sound wall shall be installed along the east (S2) side of the track from STA 423+00 to STA 440+30,	During Construction	VTA Construction	VTA Environmental Planning

Environmental Issue	Mitigation Measure #	Mitigation Measure	Implementation		
			Timeframe	Responsible Party(ies)	Oversight
Noise and Vibration (continued)	**NV-13**	A 720-foot long, 8-foot high sound wall shall be installed along the east (S2) side of the track from STA 440+30 to STA 447+50,	During Construction	VTA Construction	VTA Environmental Planning
Noise and Vibration (continued)	**NV-14**	A 480-foot long, 10-foot high sound wall shall be installed along the east (S2) side of the track from STA 447+50 to STA 452+30,	During Construction	VTA Construction	VTA Environmental Planning
Noise and Vibration (continued)	**NV-15**	A 900-foot long, 10-foot high absorptive sound wall shall be installed along the east (S2) side of the track from STA 497+00 to STA 506+00,	During Construction	VTA Construction	VTA Environmental Planning
Noise and Vibration (continued)	**NV-16**	A 250-foot long, 10-foot high absorptive sound wall shall be installed along the east (S2) side of the track from STA 506+00 to STA 508+50,	During Construction	VTA Construction	VTA Environmental Planning
Noise and Vibration (continued)	**NV-17**	A 350-foot long, 6-foot high sound wall shall be installed along the east (S2) side of the track from STA 508+50 to STA 512+00,	During Construction	VTA Construction	VTA Environmental Planning
Noise and Vibration (continued)	**NV-18**	A 350-foot long, 4-foot high sound wall shall be installed along the east (S2) side of the track from STA 512+00 to STA 515+00,	During Construction	VTA Construction	VTA Environmental Planning
Noise and Vibration (continued)	**NV-19**	A 550-foot long, 4-foot high sound wall shall be installed along the east (S2) side of the track from STA 515+00 to STA 521+00,	During Construction	VTA Construction	VTA Environmental Planning
Noise and Vibration (continued)	**NV-20**	**Slab Track Acoustical Absorption**. 2,000 alignment feet of slab track acoustical absorption at track level shall be used to reduce noise impacts in the area of the alignment between Hostetter Road and Sierra Road. This mitigation shall occur on both sides of the track between civil station 459+50 and 486+50 as follows: 700-foot length from STA 459+50 to STA 466+50 200-foot length from STA 472+30 to STA 474+30 1100-foot length from STA 475+50 to STA 486+50	During Construction	VTA Construction	VTA Environmental Planning
Noise and Vibration (continued)	**NV-21**	**Testing to Confirm Slab Track Acoustical Absorption**. During the project start-up phase and prior to revenue operations, VTA will carry out noise testing along the civil stations where slab track acoustical absorption is being used as a mitigation measure. The testing is to ensure that the sound absorber is adequately attenuating the increased noise from the slab track. VTA will deliver a technical memo to FTA on the results of the testing. The testing will also serve to inform the need for additional wayside residential noise mitigation mentioned in NV-1 and NV-21.	During and After Construction	VTA Construction, BART	VTA Environmental Planning, FTA

Environmental Issue	Mitigation Measure #	Mitigation Measure	Implementation		
			Timeframe	Responsible Party(ies)	Oversight
Noise and Vibration (continued)	**NV-22**	**Noise Insulation and Sound Absorptive Material for Multi-Story Residences.** Noise insulation and other measures will be provided for residences with second floors or higher that are exposed to noise levels in excess of FTA criteria. The mitigation will be designed to achieve an interior noise level of 45 Ldn where feasible. In addition to the recommended sound walls and retrofitting of multi-story residences with improved exterior sound isolation, sound absorptive material on the trackway structure would be necessary. This mitigation would primarily be needed for areas where the alignment runs in a retained cut. To further reduce noise impacts to multi-story residences a sound wall would be constructed on both sides of the track where the corridor is narrow (50 feet or less). Installation of sound absorptive material on the inside face of retaining walls and sound walls would further reduce sound levels by as much as 2 dBA. Otherwise, adverse noise effects could result in noise levels in excess of the FTA criteria. The location and length of recommended sound wall absorptive material that would be necessary on both sides of the track in addition to the absorptive sound wall specified in measures NV-2 through NV-18 is as follows: 2620-foot length from STA 460+80 to STA 487+00 1670-foot length from STA 491+80 to STA 508+50	During Construction	VTA Construction	VTA Environmental Planning
Noise and Vibration (continued)	**NV-23**	**Tire-Derived Aggregate Vibration Mitigation** Tire-derived aggregate will be installed from: STA 167+00 to STA 169+79. STA 172+80 (extent of crossover) to STA 177+00 STA 264+00 TO STA 266+30 (implement TDA or comparable mitigation) STA 418+00 TO 432+00 (implement TDA or comparable mitigation) STA 432+00 TO 448+00 (implement TDA or comparable mitigation)	During Construction	VTA Construction,	VTA Environmental Planning, FTA
Noise and Vibration (continued)	**NV-24**	**Dixon Landing Retained Cut Tire-Derived Aggregate Vibration Mitigation –** install tire-derived aggregate from: STA 204+20 to 209+00 (implement TDA or comparable mitigation)	During Construction	VTA Construction	VTA Environmental Planning
Noise and Vibration (continued)	**NV-25**	**Dixon Landing Retained Cut Floating Slab Vibration Mitigation –** install 8 Hz floating slab from: STA 181+50 to STA 183+60 STA 197+50 to STA 204+20 STA 266+30 to STA 287+00 STA 331+50 to STA 337+40.	During Construction	VTA Construction	VTA Environmental Planning

Environmental Issue	Mitigation Measure #	Mitigation Measure	Implementation		
			Timeframe	Responsible Party(ies)	Oversight
Noise and Vibration (continued)	**NV-26**	**Floating Slab Vibration Mitigation –** install Hz floating slab from: STA 169+79 to 172+80 (extents of crossover) STA 448+00 to STA 452+00 STA 459+50 to STA 466+50 STA 472+30 to STA 474+30 STA 475+50 to STA 486+50 STA 493+30 to STA 506+00 STA 506+00 to STA 519+50 (north end of bridge over Berryessa Rd)	During Construction	VTA Construction	VTA Environmental Planning
Noise and Vibration (continued)	**NV-27**	**Evaluation of Installed Tire-Derived Aggregate.** Upon project start-up, VTA will perform further testing on tire-derived aggregate underlayment at its Vasona LRT Line. The vibration testing should replicate the testing completed by Wilson, Ihrig & Associates and presented to FTA in 2009: Evaluation of Tire Derived Aggregate as Installed Beneath Ballast and Tie Light Rail Track, May 2009. The technical evaluation will then be presented to FTA.	After Construction	VTA Construction	VTA Environmental Planning, FTA
VISUAL QUALITY AND AESTHETICS					
Tree Replacement	**VIS-1**	**Replacement of Trees at Station Areas**. Removed trees will be replaced at a 1:1 ratio within the relevant visual analysis area.	During Construction	VTA Construction	VTA Environmental Planning
CONSTRUCTION EDUCATION AND OUTREACH					
Construction Outreach and Education Plan	**CNST-1**	**Construction Outreach and Education Plan**. A Construction Education and Outreach Plan will be developed by VTA to foster communication between VTA, various municipalities, and the public during the construction phase. The plan will be implemented to coordinate construction activities with existing business operations and other development projects, and establish a process that will adequately address the concerns of businesses and their customers, property owners, residents, and commuters. Critical components of this plan will include but are not limited to the following public outreach strategies: • Frequent updates to stakeholder groups, business organizations, and municipalities; • Public workshops and meetings with community members; • Distribution of project information and advanced construction notification via flyers, emails, mailers and face-to-face visits; • Continuous share of project information/contacts posted to website; • Media relations, i.e. news releases, news articles, interviews; and • Onsite outreach coordinator/personnel.	Prior to and During Construction	VTA Community Outreach	VTA Environmental Planning

Environmental Issue	Mitigation Measure #	Mitigation Measure	Implementation		
			Timeframe	Responsible Party(ies)	Oversight
BIOLOGICAL RESOURCES AND WETLANDS					
Construction – Burrowing Owls	**CNST-BIO-1**	**Burrowing Owl Survey**. A preconstruction survey of suitable habitat within 250 feet of construction areas (access permitting) will be conducted per CDFG guidelines by a qualified biologist within 30 days prior to construction to determine the presence of burrowing owls. If construction is delayed or suspended for more than 30 days after the preconstruction survey, the site will be resurveyed. If no burrowing owls are found, then no further mitigation is warranted.	Prior to Construction	VTA Environmental Planning, VTA Construction	VTA Environmental Planning, CDFG
Construction – Burrowing Owls (continued)	**CNST-BIO-2**	**Avoidance of Burrowing Owl Burrows**. If burrowing owls are determined to be present, avoidance of occupied burrows is the preferred method of addressing potential adverse effects. Avoidance measures include establishment of a "no disturbance" (construction-free) buffer zone within 50 meters (approximately 165 feet) of occupied burrows during the nonbreeding season (September 1 through January 31) or within 75 meters (approximately 250 feet) during the breeding season (February 1 through August 31).	During Construction	VTA Construction	VTA Environmental Planning, CDFG
Construction – Burrowing Owls (continued)	**CNST-BIO-3**	**Burrowing Owl Relocation.** If avoidance is not feasible, a qualified biologist, in consultation with CDFG, will use passive relocation techniques (e.g., installing one-way doors at burrow entrances) to displace burrowing owls from the construction area to avoid the loss of any individuals due to construction. At least one week is required to accomplish passive relocation and allow owls to acclimate to alternate burrows. Passive relocation is only authorized during the nonbreeding season.	During Construction	VTA Environmental Planning, VTA Construction	VTA Environmental Planning, CDFG
Construction– Burrowing Owls (continued)	**CNST-BIO-4**	**Burrowing Owl Habitat Conservation**. If destruction of occupied burrows is unavoidable, the loss of foraging, nesting, and roosting habitat will be mitigated through habitat preservation at a ratio of 6.5 acres of foraging habitat permanently preserved for each pair or unpaired resident bird displaced due to the Project. Such mitigation will be provided via preservation of the appropriate acreage of occupied burrowing owl habitat with a conservation easement or the purchase of credits in a CDFG-approved conservation bank.	Prior to and During Construction	VTA Environmental Planning, VTA Construction	VTA Environmental Planning, CDFG
Construction– Congdon's Tarplant	**CNST-BIO-5**	**Avoidance of Congdon's Tarplant.** VTA will design all facilities to avoid temporary and permanent affects to Congdon's tarplant to the maximum extent practicable. If avoidance is not feasible, a focused botanical survey will be conducted by a qualified plant biologist to ascertain the presence or absence of the species in the vicinity of selected alternative during the initial blooming period (August) that	Prior to and During Construction	VTA Environmental Planning, VTA Construction	VTA Environmental Planning, CDFG

Environmental Issue	Mitigation Measure #	Mitigation Measure	Implementation		
			Timeframe	Responsible Party(ies)	Oversight
		occurs prior to the construction. VTA will mitigate the permanent loss of Congdon's tarplants at a minimum ratio of 1:1 (replacement plants: lost plants), or at a ratio determined in consultation with resource agency personnel. VTA will also mitigate in accordance with the California Native Plant Society's recommended measures for mitigating adverse affects to Congdon's tarplant, as follows: ▪ To replace plants, seeds from plants within the affected area will be collected and stored during the month of August or September prior to construction beginning. As the blooming period lasts until November, the affect of pruning flowering heads to obtain seed will allow the plant to repeat flower and seed production before the end of the blooming period and thereby avoid or lessen a temporal loss before project work and reseeding occurs. ▪ The seed will be applied as a component of the revegetation mix within the affected area for any temporary effects and within a proposed replacement area for permanent effects. The replacement area will be determined in consultation with resource agency personnel. Revegetation should be accomplished by hydro seeding prior to the start of the rainy season in areas. ▪ The success of the reseeding will be monitored during the blooming period in the year following revegetation. The criteria for reseeding success will be that the species is found to be occurring throughout the reseeded areas. If unsuccessful, seed will be collected and sown in the unsuccessful areas prior to the rainy season that year. ▪ The success of the reseeding will also be monitored during the blooming period in the second year following revegetation. If seeding of previously unoccupied habitat is successful, mitigation will be deemed successful and no additional monitoring will be required. If unsuccessful, the area will be deemed as unsuitable habitat due to an apparent subtle difference in soil characteristics. In this case, revegetation of additional areas, determined in consultation with resource agency personnel, and an additional two years of monitoring will be conducted. ▪ If mowing of any revegetation area is proposed, it should be conducted prior to May 15 in order to allow sufficient time for flowering and seed set. Mowing should not be lower than six inches in order to minimize removal of tarplant foliage prior to flowering.			

Environmental Issue	Mitigation Measure #	Mitigation Measure	Implementation		
			Timeframe	Responsible Party(ies)	Oversight
Construction– Nesting Raptors	**CNST-BIO-6**	**Avoidance of Nesting Season.** To the extent feasible, construction activities, including tree and shrub removal, will be scheduled between September and December to avoid the nesting season for most raptors, as well as other bird species.	During Construction	VTA Construction	VTA Environmental Planning, CDFG
Construction– Nesting Raptors (continued)	**CNST-BIO-7**	**Preconstruction Survey for Nesting Raptors**. Preconstruction surveys for nesting raptors will be conducted by a qualified ornithologist during the nesting season (January through August) to ensure that no raptor nests will be disturbed during construction. The surveys will be conducted no more than 14 days prior to the initiation of construction activities during the early part of the breeding season (January through April) and no more than 30 days prior to the initiation of these activities during the late part of the breeding season (May through August). During this survey, the ornithologist will inspect all trees and electrical towers in, and immediately adjacent to, the affected area for raptor nests. If no nesting raptors are found, no further mitigation is warranted.	Prior to Construction	VTA Environmental Planning, VTA Construction	VTA Environmental Planning, CDFG
Construction– Nesting Raptors (continued)	**CNST-BIO-8**	**Raptor Nest Buffer Zone.** If an active raptor nest is found close enough to the construction area to be disturbed by these activities, the ornithologist, in consultation with CDFG, will determine the extent of a construction-free buffer zone, typically 250 feet, to be established around the nest until the chicks have fledged.	During Construction	VTA Environmental Planning, VTA Construction	VTA Environmental Planning, CDFG
Construction – Swallow / Migratory Bird Nesting	**CNST-BIO-9**	**Preconstruction Survey for Swallow / Migratory Bird Nesting**. If construction activities are scheduled to occur during the nesting season of swallows and other migratory birds (generally March through August), a pre-construction survey for nesting activity will be conducted prior to commencement of construction. If no nesting swallows are found, then no further mitigation is warranted.	Prior to Construction	VTA Environmental Planning, VTA Construction	VTA Environmental Planning, CDFG
Construction– Migratory Bird Nesting	**CNST-BIO-10**	**Migratory Bird Nest Monitoring and Buffer Zone.** If active nests are identified close to construction work, a biological monitor will monitor the nests when work begins. If the biological monitor, in consultation with the CDFG, determines that construction activities are disturbing adults incubating eggs or young in the nest, then a no work zone buffer will be established by the biological monitor around the nest until the young have fledged and the nest is no longer active. If a biological monitor, in consultation with CDFG, determines that construction activities occurring in proximity to active cliff swallow nests are not disturbing adults or chicks in the nest, then construction activities can continue. Nests that have been determined to be inactive (with no eggs or young) can be removed with CDFG approval.	During Construction	VTA Environmental Planning, VTA Construction	VTA Environmental Planning, CDFG

Environmental Issue	Mitigation Measure #	Mitigation Measure	Implementation		
			Timeframe	Responsible Party(ies)	Oversight
Construction– Roosting Bats	**CNST-BIO-11**	**Preconstruction Survey for Roosting Bats**. A qualified biologist will conduct pre-construction surveys in suitable habitat determine the presence of roosting bats. If no nesting swallows are found, then no further mitigation is warranted.	Prior to Construction	VTA Environmental Planning, VTA Construction	VTA Environmental Planning, CDFG
Construction– Roosting Bats (continued)	**CNST-BIO-12**	**Modified Construction Activity Near Roosting Bats.** If it is determined that bats are roosting beneath a bridge, in a building, or in adjacent riparian habitat, then appropriate modifications to construction time and method will be implemented in accordance with CDFG approval. Modifications may include timing construction activities to avoid breeding periods, establishment of buffers, or biological monitoring. In some cases bats may be actively encouraged to avoid roosting in the area affected prior to the onset of construction activities.	During Construction	VTA Environmental Planning, VTA Construction	VTA Environmental Planning, CDFG
Construction– Aquatic / Riparian Habitat	**CNST-BIO-13**	**Avoidance of Construction Impacts to Aquatic / Riparian Habitat**. To the maximum extent practicable throughout the project site, construction activities and facilities, including pilings and bridge footings, will be placed outside of aquatic/riparian habitat to avoid effects to riparian habitat and steelhead and Chinook salmon fisheries.	During Construction	VTA Construction	VTA Environmental Planning
Construction – In-stream Work	**CNST-BIO-14**	**Fish Friendly Channel Design Guidelines**. Installation of falsework and stream diversions required in the course of bridge construction will be consistent with VTA's Fish-Friendly Channel Design Guidelines to minimize affects to migrating anadromous fish and other in-stream species. These guidelines address concerns related to a number of issues including high water velocities, jumps to channelized inlets or outlets, water depths, and resting pools.	During Construction	VTA Construction	VTA Environmental Planning
Construction– California Red-Legged Frogs and California Tiger Salamanders	**CNST-BIO-15**	**California Red-Legged Frogs and California Tiger Salamanders – Water Quality Effects**. The following recommendations by CDFG will be followed to address water quality affects: ▪ Construction within the channels that cross the alignment of the selected alternative, including installation of temporary stream diversion structures, will be restricted to the dry season, which generally extends from June 1 to October 15 depending on the species present. In some cases, construction may begin earlier than June 15 or continue past October 15, as specified in regulatory agency permits and agreements or any authorized extensions. ▪ No equipment will be operated in the live stream channel. ▪ When work in a flowing stream is unavoidable, any stream flow will be diverted around the work area by a barrier, temporary culvert, or a new channel capable of permitting upstream and downstream fish movement.	During Construction	VTA Construction	VTA Environmental Planning, CDFG, FWS

Environmental Issue	Mitigation Measure #	Mitigation Measure	Implementation		
			Timeframe	Responsible Party(ies)	Oversight
		▪ Construction of the barrier or the new channel normally will begin in the downstream area and continue upstream, and the flow will be diverted only when construction of the diversion is completed. ▪ Appropriate erosion control measures will be installed to prevent debris, soil, silt, sand, bark, slash, sawdust, cement, concrete, washings, petroleum products, or other organic or earthen material from being washed into waterways by rainfall or runoff.			
Construction– California Red-Legged Frogs and California Tiger Salamanders: (continued)	**CNST-BIO-16**	**Avoidance / Minimized Take of California Red-Legged Frogs and California Tiger Salamanders**. The following mitigation measures will be followed to avoid or minimize take: ▪ A qualified biologist will conduct pre-construction surveys for red-legged frogs and tiger salamanders within the vicinity of the project site no earlier than 2 days before ground-disturbing activities. The survey area will include 300 feet upstream and downstream from the project site. ▪ No activities will occur in suitable red-legged frog or tiger salamander habitat after October 15 or the onset of the rainy season, whichever occurs first, until May 1 except for during periods greater than 72 hours without precipitation. Activities can only resume after the 72-hour period or after May 1 following a site inspection by a qualified biologist, in consultation with the U.S. Fish and Wildlife Service (FWS). The rainy season is defined as: a frontal system that results in depositing 0.25 inches or more of precipitation in one event. ▪ Construction activity within 200 feet of top of bank of Upper Penitencia Creek and Coyote Creek is restricted to the period between June 1 and October 15. Work in and adjacent (within 200' of top of bank) to Upper Penitencia Creek will be limited to the period between June 1 and October 15 when natural hydrology of the region creates seasonally dry conditions at the project site. Spill prevention and countermeasure plans shall also be implemented. ▪ Vehicles to and from the project site will be confined to existing roadways and defined access routes to minimize disturbance of red-legged frog or tiger salamander habitat. ▪ If a red-legged frog or tiger salamander is encountered during excavations, or any project activities, activities will cease until the frog or salamander is removed and relocated by a FWS-permitted biologist. Any incidental take will be reported to the FWS immediately by telephone ▪ If suitable red-legged frog or tiger salamander habitat is disturbed or	Prior to and During Construction	VTA Environmental Planning, VTA Construction	VTA Environmental Planning, CDFG, FWS

Environmental Issue	Mitigation Measure #	Mitigation Measure	Implementation		
			Timeframe	Responsible Party(ies)	Oversight
		removed, VTA will restore the suitable habitat back to its original value by covering bare areas with mulch and re-vegetating all cleared areas with plant species that are currently found in the project site or as negotiated with FWS. ▪ Any permanent loss of aquatic habitat in Upper Penitencia Creek or Lower Silver Creek will be compensated through protection or enhancement of degraded aquatic and riparian habitat at either an onsite or an offsite location. The location and total amount of the compensation habitat will be determined in consultation with FWS.			
Construction– Western Pond Turtles:	**CNST-BIO-17**	**Preconstruction Survey for Western Pond Turtles**. A qualified biologist will conduct a pre-construction survey for western pond turtles in all suitable aquatic habitats. The survey area will include 300 feet upstream and downstream from the project site. This survey will be conducted no more than 24 hours prior to the onset of in-water construction activities. If individual pond turtles are located, they will be captured by a qualified biologist and relocated to the nearest suitable habitat upstream or downstream of the project site. If individuals are relocated, then the contractor will install barrier fencing along each side of the work area to prevent individual turtles from re-entering the work area. In the event barrier fencing is installed, the qualified biologist will conduct relocation surveys for three consecutive days to ensure that all animals are removed from the disturbance area.	Prior to Construction	VTA Environmental Planning, VTA Construction	VTA Environmental Planning, CDFG
HAZARDOUS WASTE					
Construction – Hazardous Materials Contaminant Management Plan	**CNST-HAZ-1**	**Implementation of Contaminant Management Plan**. The project-wide Contaminant Management Plan dated and approved by the RWQCB on October 21, 2008 and mitigation measures included in the Plan will be implemented during construction. The mitigation measures detail requirements for the management for soil and railroad ballast, groundwater as part of dewatering activities, and building materials. The Plan is included in Appendix I in the EIS. Effects would not be substantial with the three mitigation measures incorporated	During Construction	VTA Construction	VTA Environmental Planning, RWQCB
Construction – Hazardous Materials Site Management Plan	**CNST-HAZ-2**	**Implementation of Site Management Plan for Former Ford Automobile Assembly Plant**. In addition to implementation of the project-wide Contaminant Management Plan, the measures included in the "Site Management Plan – Former Ford Automobile Assembly Plant Formerly 1100 South Main Street, Milpitas, California" (March 1997) and the RWQCB's letter dated April 16, 2001 for this property will be implemented during construction. These documents include measures	Prior to and During Construction	VTA Construction	VTA Environmental Planning, Santa Clara County

Environmental Issue	Mitigation Measure #	Mitigation Measure	Implementation		
			Timeframe	Responsible Party(ies)	Oversight
		for: review of historic environmental data and further investigation, if necessary; performance of a human health risk assessment; development of a project-specific site management plan and health and safety plan; and requirements for notification and disclosure, construction safety, soil management, and use of shallow groundwater. These documents are included in Appendix I in the EIS.			
Construction Health and Safety Plan	**CNST-HAZ-3**	**Health and Safety Plan.** To protect the health and safety of construction workers, the public, and the environment, and to ensure the proper management of hazardous materials, a Health and Safety Plan that meets Occupational Safety and Health Administration requirements will be prepared, CERCLA certified, and implemented during construction.	During Construction	VTA Construction	VTA Environmental Planning
NOISE AND VIBRATION					
Construction Noise/Vibration	**CNST-NV-1**	A comprehensive construction noise and vibration specification will be incorporated into all construction bid documents. The existence and importance of noise and vibration control specifications will be emphasized at pre-bid and pre-construction conferences.	During Construction	VTA Construction	VTA Environmental Planning
Construction Noise/Vibration (continued)	**CNST-NV-2**	Stationary equipment, such as generators and compressors, will be located as far as feasible from noise and vibration sensitive sites, and be acoustically treated. Grout batch plants, and grout silos, mixers, and pumps, and diesel pumping equipment will also be located as far as feasible from noise sensitive sites, and be acoustically treated if necessary.	During Construction	VTA Construction	VTA Environmental Planning
Construction Noise/Vibration (continued)	**CNST-NV-3**	Temporary noise barriers or noise control curtains will be constructed in areas between noisy activities and noise-sensitive receptors, where practical and effective. Temporary noise barriers can reduce construction noise by 5 to 15 dB, depending on the height of the barrier and the placement of the barrier. To be most effective, the barrier will be placed as close as possible to the noise source or the sensitive receptor. Temporary barriers tend to be particularly effective because they can be easily moved as work progresses to optimize performance. If temporary noise barriers and site layout do not result in compliance with the noise limit, retrofitting existing windows and doors with new acoustically rated units may be considered for the residential structures.	During Construction	VTA Construction	VTA Environmental Planning
Construction Noise/Vibration (continued)	**CNST-NV-4**	Use electric instead of diesel-powered equipment, hydraulic tools instead of pneumatic impact tools and electric instead of air- or gasoline driven saws, where feasible.	During Construction	VTA Construction	VTA Environmental Planning

Environmental Issue	Mitigation Measure #	Mitigation Measure	Implementation		
			Timeframe	Responsible Party(ies)	Oversight
Construction Noise/Vibration (continued)	**CNST-NV-5**	Use resonant-free vibratory pile driver or augering drill-rig for setting piles in lieu of impact pile drivers where feasible.	During Construction	VTA Construction	VTA Environmental Planning
Construction Noise/Vibration (continued)	**CNST-NV-6**	Turn off idling equipment, whenever possible.	During Construction	VTA Construction	VTA Environmental Planning
Construction Noise/Vibration (continued)	**CNST-NV-7**	Line or cover hoppers, conveyor transfer points, storage bins, and chutes with sound-deadening material.	During Construction	VTA Construction	VTA Environmental Planning
Construction Noise/Vibration (continued)	**CNST-NV-8**	Construction-related truck traffic will be routed along roadways that would cause the least disturbance to residents. Loading and unloading zones will be laid out to minimize truck idling near sensitive receptors and to minimize truck reversing so back-up alarms do not affect residences.	During Construction	VTA Construction	VTA Environmental Planning
Construction Noise/Vibration (continued)	**CNST-NV-9**	Use back-up alarms that are less intrusive in noise-sensitive areas.	During Construction	VTA Construction	VTA Environmental Planning
Construction Noise/Vibration (continued)	**CNST-NV-10**	At nighttime and weekends, use strobe warning lights and/or back-up observers during any back-up operations, where permitted by the local jurisdiction.	During Construction	VTA Construction	VTA Environmental Planning
Construction Noise/Vibration (continued)	**CNST-NV-11**	Line haul truck beds with rubber or sand to reduce noise, if needed and requested by the Resident Engineer.	During Construction	VTA Construction	VTA Environmental Planning
Construction Noise/Vibration (continued)	**CNST-NV-12**	Steel and/or concrete plates over excavated holes and trenches will be secured to reduce rattling when vehicles pass over. Use of thicker plates, stiffer beams beneath the plates, and rubber gaskets between the beams and plates will also reduce rattling noise.	During Construction	VTA Construction	VTA Environmental Planning
Construction Noise/Vibration (continued)	**CNST-NV-13**	The contractor is required to use the best available practices to reduce the potential for excessive noise and vibration from construction activities. This may require the use of equipment with special exhaust silencers, construction of temporary enclosures or noise barriers around activities, and tracks for the tracked vehicles to be in good condition.	During Construction	VTA Construction	VTA Environmental Planning

Environmental Issue	Mitigation Measure #	Mitigation Measure	Implementation		
			Timeframe	Responsible Party(ies)	Oversight
Construction Noise/Vibration (continued)	**CNST-NV-14**	Local jurisdiction construction time periods will be adhered to, to the extent feasible, recognizing that nighttime and weekend construction may be necessary and/or preferred by VTA and local jurisdictions to reduce other related environmental effects such as traffic. Note that local jurisdictions typically prohibit construction operations between the hours of 7:00 PM and 7:00 AM. VTA will work with the local jurisdictions and the affected property owners to determine if the daytime working hours may be extended until 9:00 or 10:00 pm without severely affecting the nearby residents.	During Construction	VTA Construction	VTA Environmental Planning
Construction Noise/Vibration (continued)	**CNST-NV-15**	The contractor is required to perform preconstruction ambient noise measurements at or near representative aboveground noise-sensitive locations. This will serve to document the noise environment just prior to start of construction at representative locations along the alignment. These measurements will be performed continuously over a minimum of 10 days at the representative above locations.	During Construction	VTA Construction	VTA Environmental Planning
Construction Noise/Vibration (continued)	**CNST-NV-16**	The contractor is required to perform a 30-minute Leq noise sampling at representative noise sensitive locations within 250 feet of the construction at least once each week and after a change in construction activity or construction location. The measurements will be performed on both sides of the alignment. If required, additional noise monitoring site(s) may be added by the Resident Engineer to address any specific situation and concern. Additional noise measurements will be performed during daytime and nighttime construction activities at the eleven street crossings during at-grade utilities modifications and at the three new bridge locations.	During Construction	VTA Construction	VTA Environmental Planning
Construction Noise/Vibration (continued)	**CNST-NV-17**	Construction noise measurements will coincide with periods of maximum noise-generating activity, and be taken during the construction phase or activity that has the greatest potential to create annoyance or to exceed applicable noise limits. The noise data will be submitted to the Resident Engineer on a weekly basis, including details and location of construction activity, and details and sketch of noise monitoring location.	During Construction	VTA Construction	VTA Environmental Planning
Construction Noise/Vibration (continued)	**CONST – NV-18**	The contractor is required to perform preconstruction ambient noise measurements over a minimum of 10 days at the Mabury/U.S. 101 construction staging area. This will serve to document the noise environment just prior to start of construction.	Prior to Construction –	VTA Construction	VTA Environmental Planning

Environmental Issue	Mitigation Measure #	Mitigation Measure	Implementation		
			Timeframe	Responsible Party(ies)	Oversight
Construction Noise/Vibration (continued)	**CNST-NV-19**	The contractor is required to submit to the Resident Engineer a Noise Control Plan and a Noise Monitoring Plan, prepared by a qualified Acoustical Engineer. The qualifications and activities of the Acoustical Engineer will be subject to approval of the Resident Engineer. The Noise Control Plan will be updated every three months and include all the pertinent information about the equipment and the construction site layout, the projected noise levels and the noise mitigation measures that may be required to comply with the noise limits for each sensitive receptor. The Noise Monitoring Plan will outline the equipment and procedures used by the contractor to perform noise measurements, and to identify noise sensitive structures in the immediate vicinity of construction operations, including details regarding the noise measurement locations. The results of noise monitoring will be documented and reported. In the event that levels exceed allowable limits, the Resident Engineer will ensure that contractually required corrective measures are implemented.	Prior to and During Construction	VTA Construction	VTA Environmental Planning
Construction Noise/Vibration (continued)	**CNST-NV-20**	The minimum qualifications for the Acoustical Engineer will be a Bachelor of Science or Engineering degree, from a qualified program in engineering or physics offered by an accredited university or college, and five years in noise control engineering and construction noise analysis.	During Construction	VTA Construction	VTA Environmental Planning
Construction Noise/Vibration (continued)	**CNST-NV-21**	That contractor is required to not operate noise generating equipment at the construction site prior to acceptance of the Noise Monitoring Plan and the Noise Control Plan.	During Construction	VTA Construction	VTA Environmental Planning

Environmental Issue	Mitigation Measure #	Mitigation Measure	Implementation		
			Timeframe	Responsible Party(ies)	Oversight
Construction Noise/Vibration (continued)	**CNST-NV-22**	For major equipment to be used at the surface of the construction site for a total duration greater than five days, ensure that the equipment is pre-certified by the Acoustical Engineer during field measurements at a test site or guaranteed by the equipment vendor to meet the noise limits developed for construction equipment as shown below. **Noise Emission Limits for Construction Equipment** **Equipment Type and Typical Lmax Sound Level at 50 ft dBA** Excavators 82 Dump trucks 81 Front end loaders 82 Dozers 82 Concrete trucks 77 Graders 81 Cranes 79 Backhoes 75 Compactors 77 Compactor roller 81 Concrete pumping trucks 77 Tamper/Aligner 81 Water trucks 77 Large and small diameter auger drill-rigs 81 Diesel generators 69*a* Flat-bed semi-trucks 81 Compressed-air construction tools 81 Air compressors 70*a* Welding equipment 73 *a – Assumed acoustically treated* The final limits to be applied will be re-examined and developed during final design. Construction equipment will be retested at six-month intervals while in use onsite. Any equipment used during construction may be subject to confirmatory noise level testing by the contractor at the request of the Resident Engineer.	Prior to and During Construction	VTA Construction	VTA Environmental Planning

Environmental Issue	Mitigation Measure #	Mitigation Measure	Implementation		
			Timeframe	Responsible Party(ies)	Oversight
Construction Noise/Vibration (continued)	**CNST-NV-23**	The contractor is required to initially perform vibration monitoring at the nearest residence or commercial structure within 100 feet of pile driving operation. If the measured vibration data during the first two days is in compliance with the vibration limits, vibration monitoring may be discontinued at the site, assuming that piling operation occurs close to the nearest receptor. Vibration measurements will be measured in the vertical direction on ground surface or building floor and measured during a pile driving operation.	During Construction	VTA Construction	VTA Environmental Planning

Appendix F

Final Programmatic Agreement

PROGRAMMATIC AGREEMENT
BETWEEN THE
FEDERAL TRANSIT ADMINISTRATION AND THE
CALIFORNIA STATE HISTORIC PRESERVATION OFFICER
REGARDING THE BERRYESSA EXTENSION PROJECT ALTERNATIVE
OF THE SILICON VALLEY RAPID TRANSIT CORRIDOR PROJECT IN
ALAMEDA AND SANTA CLARA COUNTIES, CALIFORNIA

WHEREAS, the Santa Clara Valley Transportation Authority (VTA) is proposing a Silicon Valley Rapid Transit Corridor Project and is seeking financial assistance from the U.S. Department of Transportation Federal Transit Administration (FTA) for the proposed 9.9-mile extension of the Bay Area Rapid Transit's (BART) system from Alameda County, California, to Santa Clara County, California (Undertaking); and

WHEREAS, The FTA has determined that the project would constitute an Undertaking under 36 CFR 800.16(y), which requires compliance with Section 106 of the National Historic Preservation Act (16 USC 470f); and

WHEREAS, FTA has defined the undertaking's area of potential effect (APE) as described in Attachment A; and

WHEREAS, the Undertaking's APE is known to include nine recorded archaeological sites or locations where archaeological remains are likely to be found, including:

Nicora farm (CA-SCL-438H)
"The Dumps"
Harrisburg Station (HR-1)
Castello Farm (HR-2)
Murasky Farm (HR-4)
Stocklin Farm (HR-5)
Possible slaughterhouses (HR-8)
King Farm (HR-9)
Albright Residence Park (HR-10)

and;

WHEREAS, many of these sites have not been evaluated for their eligibility for the National Register of Historic Places (NRHP) or the California Register of Historical Resources; and

WHEREAS, the FTA, in consultation with the California State Historic Preservation Officer (SHPO), has determined that the Undertaking may adversely affect archeological sites listed in or eligible for listing in the NRHP, but effects cannot be fully assessed prior to the approval of FTA financial assistance; and

WHEREAS, portions of the Undertaking's APE include paved and built-over areas and areas of private land not accessible for cultural resources inventory, and areas with high potential for buried archaeological deposits that cannot be accurately located prior to construction; and

WHEREAS, the project vicinity is known to contain Native American human remains, and

WHEREAS, at such time as any unevaluated cultural resources may be discovered during the Undertaking, it may require archaeological evaluation, data recovery, Native American

consultation, and/or other historic preservation activities, in compliance with Section 106 and concurrent with active construction; and

WHEREAS, design of the Undertaking is not completed and the locations of all potential impacts have not been determined; and

WHEREAS, the FTA has consulted with the SHPO in accordance with regulations implementing Section 106 of the National Historic Preservation Act; and

WHEREAS, the FTA has consulted with the Native American Heritage Commission (NAHC) and the local Native American community regarding the cultural sensitivity of the Undertaking's project area; and

WHEREAS, the FTA has chosen to prepare this Programmatic Agreement (PA) to complete the final identification and evaluation of potential historic properties pursuant to 36 CFR 800.4(b)(2), and provide for a phased resolution of any adverse effects on historic properties within the Undertaking's APE subsequent to the approval of the Undertaking; and

WHEREAS, this PA was developed with public involvement pursuant to 36 CFR 800.2(d) and 800.6(a), and the public was provided opportunities to comment on the Undertaking and its adverse effects; and

WHEREAS, the FTA shall make the terms and conditions of this PA part of the conditions of any permissions and permits issued by the FTA for this Undertaking; and

WHEREAS, in accordance with 36 C.F.R. § 800.6(a)(1), the FTA has notified the Advisory Council on Historic Preservation (ACHP) of its potential adverse effect determination with specified documentation and the ACHP has chosen not to participate in the consultation pursuant to 36 CFR § 800.6(a)(1)(iii); and

WHEREAS, VTA is an Invited Signatory to this PA, and

NOW, THEREFORE, the FTA, the SHPO, and VTA agree that the Undertaking shall be implemented in accordance with the following stipulations to take into account the effects of the Undertaking on historic properties and further agree that these stipulations shall govern the Undertaking and all of its parts until this PA expires or is terminated.

STIPULATIONS

The FTA will ensure that the terms of this PA are carried out and will require, as a condition of any approval of Federal funding for the Undertaking, adherence to the stipulations set forth herein.

I. ROLES AND RESPONSIBILITIES

As a condition of FTA project approvals, VTA shall act on behalf of FTA and coordinate all activities described in the PA to carry out the stipulations below. VTA will consult with the FTA and SHPO, as appropriate, in planning and implementing the stipulations of this PA. VTA shall submit all plans and documents required by this PA in a timely and accurate manner to the FTA and SHPO, as stipulated, for review. VTA

shall also ensure that all treatment measures developed by VTA as a result of consultation are compliant with government-wide policies and regulations.

II. AREA OF POTENTIAL EFFECTS

The Undertaking's area of potential effects (APE) is depicted in Attachment A of this PA. The APE set forth hereunder may be amended through consultation among the PA parties without amending the PA proper.

III. IDENTIFICATION AND TREATMENT OF HISTORIC PROPERTIES

A. The FTA and VTA have chosen, pursuant to 36 CFR 800.4(b)(2) and 800.14(b), to complete the final identification and evaluation of historic properties in the Undertaking's APE subsequent to the FTA's signing of the Record of Decision and prior to construction of the Undertaking. The FTA and VTA chose to implement this phased identification, evaluation, and application of the criteria of adverse effect because of consideration for access constraints posed by urban overlay of the APE and because exact locations of direct impact areas are only generally known; and because the full nature, type, and extent of buried archaeological deposits and features are unknown.

B. Upon FTA's decision to sign a Record of Decision for and prior to construction of the Undertaking, VTA shall, on behalf of FTA, complete the fieldwork to identify, evaluate, and apply the criteria of adverse effect to historic properties within the APE in accordance with 36 CFR 800.4(b)(1), 800.4(c)-(d), and 800.5(a)(1).

C. As outlined in the *Archaeological Research Design and Treatment Plan for the Berryessa Extension Project, Fremont, Milpitas, and San Jose, California* (Treatment Plan) (Attachment B to this PA), completion of the identification of historic properties within the APE will include the following:

1. VTA shall, on behalf of FTA, conduct a cultural resources survey in areas previously not accessible once access has been granted and before construction begins;

2. In those areas covered with pavement or other obstructions, VTA shall, on behalf of FTA, have a qualified archaeologist monitor removal of the obstruction (and any underlying base, foundations, etc.) and inspect the ground for cultural materials.

3. When the final project design is completed, VTA shall, on behalf of FTA, have a qualified professional archaeologist review the design to ensure that all potential impacts to eligible or unevaluated cultural resources have been identified.

4. In those areas with "high" or "very high" potential for buried sites, VTA shall, on behalf of FTA, have a qualified geoarchaeologist conduct exploratory trenching or coring of areas where subsurface project disturbance is planned, prior to that disturbance.

5. VTA shall, on behalf of FTA, protect and evaluate any cultural resources discovered during exploratory trenching or coring. Evaluation and data recovery, if appropriate, will follow the research design and recommendations presented in the Treatment Plan. Where avoidance of impacts is not feasible, a qualified professional archaeologist will conduct limited sub-surface testing before any ground-disturbing project work is done within 50 meters of a known archaeological site. The objectives of the testing will be to delineate the extent and depth of the site within the Undertaking's APE; determine whether human remains are present within the APE; and assess the nature and potential significance of the archaeological deposit within the APE. The work will be guided by the Treatment Plan. All testing within a prehistoric or ethnographic site (including Mission-era sites) will include consultation with the local Native American community. If requested by the Native American community, VTA shall, on behalf of FTA, allow local Native American monitors to be present during prehistoric and ethnographic site testing.

6. The PA parties agree that any human remains and related items discovered during the implementation of the terms of this PA and of the Undertaking will be treated in accordance with the requirements of Section 7050.5(b) of the California Health and Safety Code. If, pursuant to Section 7050.5(c) of the California Health and Safety Code, the county coroner/medical examiner determines that the human remains are or may be of Native American origin, then the discovery shall be treated in accordance with the provisions of Section 5097.98(a)-(d) of the California Public Resources Code. VTA shall, on behalf of FTA, ensure that the remains are not damaged or disturbed further until all stipulations in Section 7050.5 and Section 5097.98 have been met. VTA shall notify signatories within 48 hours if human remains are found.

7. The VTA shall, on behalf of and in consultation with the FTA, ensure that historic, architectural, ethnographic, and archaeological work conducted pursuant to this PA is carried out by, or under the direct supervision of, persons meeting qualifications set forth in the Secretary of the Interior's Professional Qualification Standards (36 CFR 61).

IV. REPORTING REQUIREMENTS AND REVIEWS

A. Within one year of completion of all fieldwork, VTA shall, on behalf of FTA, provide a draft technical report on the methods and results of inventory, geoarchaeological exploration, evaluation, and/or data recovery to the FTA and SHPO for review.

B. The SHPO shall have 30 days to review the draft and comment on the level of effort, results, and eligibility recommendations; those comments shall be incorporated into the final technical report, as appropriate. Lack of response by the SHPO shall not preclude the FTA from authorizing the final technical report.

C. Within 30 days of receipt of comments on the draft technical report, VTA shall submit the final technical report to the FTA and the SHPO, the appropriate CHRIS Information Center, and the appropriate Native American contacts, and shall make it available to other interested persons who meet the confidentiality requirements. The technical report shall not be distributed to the general public, except in an abridged form that does not include sensitive information about site locations of human remains.

D. All reports generated as a result of this PA and attachments shall be consistent with contemporary professional standards and the Secretary of the Interior's guidelines.

V. NATIVE AMERICAN CONSULTATION

The FTA and VTA have consulted with the Native American Heritage Commission (NAHC) and with individuals and groups identified by the NAHC regarding the proposed Undertaking and its effects on historic properties. The FTA and VTA will continue to consult with these individuals and groups and will afford them, should they so desire, the opportunity to participate in the implementation of the PA and of the Undertaking.

VI. MITIGATION MONITORING AND REPORTING PLAN

During final design, VTA, in cooperation with its contractors, the FTA, and the SHPO, will develop a Mitigation Monitoring and Reporting Plan (MMRP) for the Undertaking. The MMRP will include provisions to protect archeological properties from any inadvertent damage. The MMRP will be finalized prior to the start of construction. This MMRP will reference the PA and include it as an appendix.

VII. LATE DISCOVERIES AND UNANTICIPATED EFFECTS

If either the FTA or VTA determines, during implementation of the Treatment Plan or after construction of the Undertaking has commenced, that either the implementation of the Treatment Plan or the Undertaking will affect a previously unidentified property that may be eligible for the National Register of Historic Places, or affect a known historic property in an unanticipated manner, they will address the discovery or unanticipated effect in accordance with the Treatment Plan.

VIII. ADMINISTRATIVE PROVISIONS

A. STANDARDS

1. Definitions. The definitions provided at 36 CFR 800.16 are applicable throughout this PA.

2. Professional Qualifications. VTA shall, on behalf of FTA, ensure that only individuals meeting the Secretary of the Interior's Professional Qualification Standards (PQS) (48 FR 4473839) in the relevant field of study carry out or review appropriateness and quality of the actions and products required by this PA. However, nothing in this stipulation may be interpreted to preclude the FTA or any agent or contractor thereof from using the properly supervised services of persons who do not meet the PQS.

3. Documentation Standards. Written documentation of activities prescribed by Stipulation II of this PA shall conform to the *Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation* (48 FR 44716-44740), as well as to applicable standards and guidelines established by the SHPO.

4. Curation Standards. VTA shall, on behalf of FTA, ensure that, to the extent permitted under Sections 5097.98 and 5097.991 of the California Public Resources Code, the materials and records resulting from the activities prescribed by this PA are curated in accordance with 36 CFR Part 79.

B. CONFIDENTIALITY

The PA parties acknowledge that the historic properties covered by this PA are subject to the provisions of Section 304 of the National Historic Preservation Act and Section 6254.10 of the California Government Code (Public Records Act), relating to the disclosure of archaeological site information and, having so acknowledged, will ensure that all actions and documentation prescribed by this PA are consistent with said sections.

C. RESOLVING OBJECTIONS

1. Should any party to this PA object at any time in writing to the manner in which the terms of this PA are implemented, to any action carried out or proposed with respect to implementation of the PA (other than the Undertaking itself), or to any documentation prepared in accordance with and subject to the terms of this PA, the FTA shall immediately notify the other PA parties of the objection, request their comments on the objection within 15 days following receipt of the FTA's notification, and proceed to consult with the objecting party for no more than 30 days to resolve the objection. The FTA will honor the request of the other parties to participate in the consultation and will take any comments provided by those parties into account.

2. If the objection is resolved during the 30-day consultation period, the FTA may proceed with the disputed action in accordance with the terms of such resolution.

3. If at the end of the 30-day consultation period, the SHPO determines that the objection cannot be resolved through such consultation, then the SHPO shall forward all documentation relevant to the objection to the ACHP, including the FTA's proposed response to the objection, with the expectation that the ACHP will, within 30 days after receipt of such documentation, do the following:

    a. Advise the SHPO that the ACHP concurs in the FTA's proposed response to the objection, whereupon the FTA will respond to the objection accordingly. The objection shall thereby be resolved; or

b. Provide the SHPO with recommendations, which the FTA will take into account in reaching a final decision regarding its response to the objection. The objection shall thereby be resolved; or

c. Notify the FTA that the objection will be referred for comment pursuant to 36 CFR 800.7(c) and proceed to refer the objection and comment. The FTA shall take the resulting comments into account in accordance with 36 CFR 800.7(c)(4) and Section 110(1) of the National Historic Preservation Act. The objection shall thereby be resolved.

4. Should the ACHP not exercise one of the above options within 30 days after receipt of all pertinent documentation, the FTA and the SHPO may assume the ACHP's concurrence in the proposed response to the objection, and the FTA may proceed to implement that response. The objection shall thereby be resolved.

5. The FTA shall take into account any of the ACHP's recommendations or comments provided in accordance with this stipulation with reference only to the subject of the objection.

6. The FTA's responsibility to carry out all actions under this PA that are not the subjects of the objection shall remain unchanged.

7. The FTA shall provide all parties to this PA and the ACHP, if the ACHP has commented, with a copy of its final written decision regarding any objection addressed pursuant to this stipulation.

8. The FTA may authorize any action subject to objection under this stipulation to proceed after the objection has been resolved in accordance with the terms of this stipulation.

D. AMENDMENTS

Any signatory or invited signatory party to this PA may propose that this PA be amended, whereupon all signatory and invited signatory parties shall consult for no more than 30 days to consider such amendment. The amendment will be effective on the date a copy signed by all of the original signatories is filed with the ACHP. If the signatories and invited signatories cannot agree to appropriate terms to amend the PA, any signatory may terminate the agreement in accordance with Section E of this stipulation.

E. TERMINATION

1. If this PA is not amended as provided for in Section D of this stipulation, or if any of the signatories or invited signatories propose termination of this PA for other reasons, the signatory or invited signatory party proposing termination shall, in writing, notify the other PA parties, explain the reasons for proposing termination, and consult with the other parties for at least 30 days to seek alternatives to termination. Such consultation shall not be

required if the FTA proposes termination because the Undertaking no longer meets the definition set forth in 36 CFR 800.16(y).

2. Should such consultation result in an agreement on an alternative to termination, the signatory and invited signatory parties shall proceed in accordance with the terms of that agreement.

3. Should such consultation fail, the signatory or invited signatory party proposing termination may terminate this PA by promptly notifying the other PA parties in writing. Termination hereunder shall render this PA without further force or effect.

4. If this PA is terminated hereunder, and if the FTA determines that the Undertaking will nonetheless proceed, then the FTA shall comply with the requirements of 36 CFR 800.3 through 800.6.

F. DURATION OF THE PA

1. Unless terminated pursuant to Section E of this stipulation or unless it is superseded by an amended PA, this PA will be in effect following execution by the signatory and invited signatory parties until the FTA, in consultation with the other signatory parties, determines that all of its stipulations have been satisfactorily fulfilled.

2. The terms of this PA shall be satisfactorily fulfilled within ten years following the date of execution by the signatory and invited signatory parties or until the completion of construction, whichever is later. If the FTA determines that this requirement cannot be met, the PA parties will consult to reconsider its terms. Reconsideration may include continuation of the PA as originally executed, amendment of the PA, or termination. In the event of termination, the FTA will comply with Section E.4 of this stipulation if it determines that the Undertaking will proceed notwithstanding termination of this PA.

G. EFFECTIVE DATE

This PA will take effect on the date that it has been executed by the FTA, VTA, and the SHPO.

H. EXECUTION

Execution of this PA by the FTA and the SHPO, its filing with the ACHP in accordance with 36 CFR 800.6(b)(1)(iv), and subsequent implementation of its terms, shall evidence, pursuant to 36 CFR 800.6(c), that this PA is an agreement with the ACHP for purposes of Section 110(1) of the National Historic Preservation Act, and shall further evidence that the FTA has afforded the ACHP an opportunity to comment on the Undertaking and its effects on historic properties, and that the FTA has taken into account the effects of the Undertaking on historic properties.

SIGNATORIES

We, as signatories of this Programmatic Agreement, concur with its provisions and will follow the procedures and stipulations outlined above.

Federal Transit Administration

By: _____ Date: 3-25-10

Leslie T. Rogers
Region IX Administrator

California State Historic Preservation Officer

By: _____ Date: 25 MAR 2010

Milford W. Donaldson
State Historic Preservation Officer

INVITED SIGNATORY

Santa Clara Valley Transportation Authority

By: _____ Date: 3-25-10

FOP

Michael T. Burns
General Manager

Attachment A: Area of Potential Effects for Archaeology and Historic Architecture
Attachment B: *Archaeological Research Design and Treatment Plan for the Berryessa Extension Project, Fremont, Milpitas, and San Jose, California*