Appendix E

Mitigation Monitoring and Reporting Program

Transportation

Note:

1. *All transportation mitigation measures from the FEIR and SEIR-1 have been replaced with mitigation measures in the SEIR-2.*

Environmental Issue	Measure #	Mitigation Measure	Timeframe for Implementation	Responsibility for Implementation	Oversight for Implementation
Milpitas Station	TR-1	**Great Mall Parkway and Montague Expressway**. No other cost-effective feasible improvements can be made at this intersection beyond those identified under the 2030 No Project conditions. Since Phase 1 would contribute to the need for improvements at this intersection, Phase 1 would contribute a "fair share" amount toward the implementation of traffic improvements.	Implemented as warranted by demand	VTA, County of Santa Clara, City of Milpitas	VTA Environmental Planning
Milpitas Station	TR-2	**Milpitas Boulevard and Montague Expressway.** There are no cost effective feasible improvements that can be made to mitigate Phase 1 impacts at this intersection. Should a feasible improvement be determined, a "fair share" contribution would be evaluated at that time.	Implemented as warranted by demand	VTA, County of Santa Clara, City of Milpitas	VTA Environmental Planning
Milpitas Station	TR-3	**Park Victoria Drive and Yosemite Drive.** The necessary improvement to mitigate the significant impacts under Phase 1 at this intersection consists of the addition of a second northbound left-turn lane. Since Phase 1 would contribute to the need for improvements at this intersection, Phase 1 would contribute a "fair share" amount toward the implementation of the traffic improvement. The implementation of this improvement would improve intersection level of service to an acceptable LOS D during the AM peak hour.	Implemented as warranted by demand	VTA, City of Milpitas	VTA Environmental Planning
Milpitas Station	TR-4	**Old Oakland/Main Street and Montague Expressway.** No other cost-effective feasible improvements can be made at this intersection beyond those identified under the 2030 No Project conditions. Since Phase 1 would contribute to the need for improvements at this intersection, Phase 1 would contribute a "fair share" amount toward the implementation of traffic improvements.	Implemented as warranted by demand	VTA, County of Santa Clara, City of Milpitas	VTA Environmental Planning

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Environmental Issue	Measure #	Mitigation Measure	Timeframe for Implementation	Responsibility for Implementation	Oversight for Implementation
Milpitas Station	TR-5	**Trade Zone Boulevard and Montague Expressway.** No other cost-effective feasible improvements can be made at this intersection beyond those identified under the 2030 No Project conditions. Since Phase 1 would contribute to the need for improvements at this intersection, Phase 1 would contribute a "fair share" amount toward the implementation of traffic improvements.	Implemented as warranted by demand	VTA, County of Santa Clara, City of Milpitas	VTA Environmental Planning
Berryessa Station	TR-6	**Flicklinger Avenue and Berryessa Road.** No other cost-effective feasible improvements can be made at this intersection beyond those identified under the 2030 No Project conditions. Since Phase 1 would contribute to the need for improvements at this intersection, Phase 1 would contribute a "fair share" amount toward the implementation of traffic improvements.	Implemented as warranted by demand	VTA, City of San Jose	VTA Environmental Planning
Berryessa Station	TR-7	**Lundy Avenue and Berryessa Road.** No other cost-effective feasible improvements can be made at this intersection beyond those identified under the 2030 No Project conditions. Since Phase 1 would contribute to the need for improvements at this intersection, Phase 1 would contribute a "fair share" amount toward the implementation of traffic improvements.	Implemented as warranted by demand	VTA, City of San Jose	VTA Environmental Planning
Berryessa Station	TR-8	**King Road and Mabury Road.** The necessary improvement to mitigate the significant impact resulting from Phase 1 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, City of San Jose	VTA Environmental Planning
Berryessa Station	TR-9	**US 101 and Julian Street.** 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 of San Jose list of Protected Intersections and adhere to the Protected Intersection Policy.	Implemented as warranted by demand	VTA, City of San Jose	VTA Environmental Planning

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Environmental Issue	Measure #	Mitigation Measure	Timeframe for Implementation	Responsibility for Implementation	Oversight for Implementation
Berryessa Station	TR-10	**King Road and McKee Road.** No other cost-effective feasible improvements can be made at this intersection beyond those identified under the 2030 No Project conditions. Since Phase 1 would contribute to the need for improvements at this intersection, Phase 1 would contribute a "fair share" amount toward the implementation of traffic improvements.	Implemented as warranted by demand	VTA, City of San Jose	VTA Environmental Planning
Berryessa Station	TR-11	**Capitol Avenue and McKee Road.** No other cost-effective feasible improvements can be made at this intersection beyond those identified under the 2030 No Project conditions. Since Phase 1 would contribute to the need for improvements at this intersection, Phase 1 would comply with the Protected Intersection Policy as required and contribute a "fair share" amount toward the implementation of offsetting Transportation System improvements that enhance pedestrian, bicycle and transit facilities to the community near this Protected Intersection.	Implemented as warranted by demand	VTA, City of San Jose	VTA Environmental Planning
Berryessa Station	TR-13	**King Road and Story Road.** No other cost-effective feasible improvements can be made at this intersection beyond those identified under the 2030 No Project conditions. Since Phase 1 would contribute to the need for improvements at this intersection, Phase 1 would contribute a "fair share" amount toward the implementation of traffic improvements.	Implemented as warranted by demand	VTA, City of San Jose	VTA Environmental Planning
Berryessa Station	TR-14	**Capitol Expressway and Capitol Avenue.** No other cost-effective feasible improvements can be made at this intersection beyond those identified under the 2030 No Project conditions. Since Phase 1 would contribute to the need for improvements at this intersection, Phase 1 would comply with the Protected Intersection Policy as required and contribute a "fair share" amount toward the implementation of offsetting Transportation System improvements that enhance pedestrian, bicycle and transit facilities to the community near this Protected Intersection.	Implemented as warranted by demand	VTA, County of Santa Clara, City of San Jose	VTA Environmental Planning

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Air Quality

Environmental Issue	Measure #	Mitigation Measure	Timeframe for Implementation	Responsibility for Implementation	Oversight for Implementation
		No mitigation is required.			

Biological Resources and Wetlands

Notes:

1. *The text of mitigation measure B-3 from the SEIR-1 was replaced with text from mitigation measure BIO-1 from the SEIR-2.*

Environmental Issue	Measure #	Mitigation Measure	Timeframe for Implementation	Responsibility for Implementation	Oversight for Implementation
Congdon's tarplant	B-1(a)	VTA will design all facilities to avoid temporary and permanent impacts 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 Phase 1 area during the initial blooming period (August) that 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 impacts to Congdon's tarplant, as described in mitigation measures B-1(b) through B-1(f).	Prior to and following construction	VTA Design	VTA Environmental Planning
Congdon's tarplant	B-1(b)	To replace plants, seeds from plants within the area of impact 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 lessen or avoid a temporal loss before Phase 1 work and reseeding occurs.	Prior to Construction	VTA Environmental Planning	VTA Environmental Planning

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Environmental Issue	Measure #	Mitigation Measure	Timeframe for Implementation	Responsibility for Implementation	Oversight for Implementation
Congdon's tarplant	B-1(c)	The seed will be applied as a component of the revegetation mix within the impact area for any temporary impacts and within a proposed replacement area for permanent impacts. The replacement area will be determined in consultation with resource agency personnel. Revegetation should be accomplished by hydroseeding prior to the start of the rainy season in areas.	During Construction	VTA Construction	VTA Environmental Planning
Congdon's tarplant	B-1(d)	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.	Following Construction	VTA Environmental Planning	VTA Environmental Planning
Congdon's tarplant	B-1(e)	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.	Following Construction	VTA Environmental Planning	VTA Environmental Planning
Congdon's tarplant	B-1(f)	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.	Following Construction	VTA Environmental Planning	VTA Environmental Planning

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Environmental Issue	Measure #	Mitigation Measure	Timeframe for Implementation	Responsibility for Implementation	Oversight for Implementation
Wetlands and waters of the U.S.	B-2	VTA will design all Phase 1 facilities to avoid temporary and permanent impacts to wetlands and waters of the United States to the maximum extent practicable. If avoidance is not feasible, VTA will mitigate the 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 impacts to waters of the United States will be mitigated at minimum 1:1 ratio, or at a higher ratio determined in consultation with resource agency personnel. 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 impacted watershed, if possible. A qualified biologist, in coordination with resource agency personnel, will prepare a mitigation and monitoring plan for impacts to wetlands and waters of the United States due to Phase 1. Alternatively, VTA may purchase credits in an approved mitigation bank.	Prior to and following construction	VTA Design	VTA Environmental Planning
Riparian habitat	B-3	VTA will design all Phase 1 facilities to avoid temporary and permanent adverse impacts to riparian habitat to the maximum extent practicable. If avoidance is not feasible, permanent impacts to the riparian habitat will be mitigated at a ratio of 3:1. Mitigation will be in-kind, except that non native species will be replaced with native species common to the planting area and will be planted onsite to the maximum extent practicable. If mitigation cannot be accommodated entirely onsite, 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 impacts to riparian habitat resulting from Phase 1. 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. Temporary impacts will be mitigated by restoring the habitat onsite.	Prior to and following construction	VTA Design	VTA Environmental Planning

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Environmental Issue	Measure #	Mitigation Measure	Timeframe for Implementation	Responsibility for Implementation	Oversight for Implementation
Riparian habitat	B-4	Any permanent loss of riparian or aquatic habitat in the Guadalupe River, Coyote Creek, Upper Penitencia Creek, or Lower Silver Creek will be compensated through protection or enhancement of degraded riparian and aquatic habitat either at an on-site or an off-site location. The location and total amount of the compensation habitat will be determined in consultation with U.S. Fish and Wildlife Service (USFWS).	Prior to and following construction	VTA Environmental Planning	VTA Environmental Planning, USFWS
Riparian habitat	B-5	VTA will mitigate the impacts of temporary disturbance to Central Coast cottonwood-sycamore riparian forest at a ratio determined by the California Department of Fish and Game (CDFG).	Prior to and following construction	VTA Environmental Planning	VTA Environmental Planning, CDFG
Riparian habitat	B-6	Where riparian vegetation will be affected unavoidably, habitat quality will be assessed and confirmed with regulatory agencies. The size of the area and the quality of the resources that will be affected will be included in a mitigation and monitoring plan (M&MP) to develop the details of the compensatory mitigation to be carried out. The site-specific M&MP will assure replacement or enhancement of habitat values such as the density of the overstory vegetation, reintroduction of native species, and development of complex vegetation structure, to the maximum extent practicable.	Prior to construction	VTA Environmental Planning	VTA Environmental Planning
Riparian habitat	B-7	A detailed Riparian Restoration Plan will also be prepared to provide for the replacement of lost acreage, as well as values and functions of riparian habitat including shaded riverine aquatic habitat. The plan will identify locations of restoration opportunities and detail a technical approach to create high-quality riparian and shaded riverine aquatic habitat.	Prior to construction	VTA Environmental Planning	VTA Environmental Planning

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Environmental Issue	Measure #	Mitigation Measure	Timeframe for Implementation	Responsibility for Implementation	Oversight for Implementation
Southwestern Pond Turtle	B-8	A qualified biologist will conduct pre-construction surveys for southwestern pond turtles 300 feet upstream and downstream of applicable project areas 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 work area. If individuals are relocated, the contractor will install barrier fencing along each side of the work area to prevent individual turtles from re-entering the site. If barrier fencing is installed, a qualified biologist will conduct relocation surveys for three subsequent, consecutive days to ensure that all animals are removed from the work area.	Prior to construction	VTA Environmental Planning	VTA Environmental Planning
Special status animal species – general	B-9	Areas occupied by Western burrowing owls or other special status species will be avoided to the maximum extent practicable.	During construction	VTA Construction	VTA Environmental Planning
Nesting raptors	B-10	No mitigation is required if construction activities occur during the non-breeding season of nesting raptors (generally September through January).	During construction	VTA Construction	VTA Environmental Planning
Nesting raptors	B-11	During the breeding season (generally February through August), pre-construction surveys for nesting raptors will be conducted by a qualified biologist to ensure that raptor nests will not be disturbed by construction activities. During each survey, all trees and suitable grassland habitat within 250 feet of the construction site will be inspected. If no nesting raptors are observed in the area surveyed, no further mitigation is required.	Prior to construction	VTA Environmental Planning	VTA Environmental Planning
Nesting raptors	B-12	If an active raptor nest were found close enough to the construction site to be disturbed, a qualified biologist, in consultation with USFWS and CDFG, would determine the extent of a construction-free buffer zone (typically 250 feet) to be established around the nest. VTA will require that no grading or other construction activities be allowed within this buffer during the nesting season or until the young have fledged, except as approved by USFWS or CDFG.	Prior to and during construction	VTA Environmental Planning, VTA Construction	VTA Environmental Planning, USFWS, CDFG

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Environmental Issue	Measure #	Mitigation Measure	Timeframe for Implementation	Responsibility for Implementation	Oversight for Implementation
Nesting swallows and other migratory birds	B-13	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 construction. If active nests are identified in close proximity to construction work, a biological monitor will monitor the nests when work begins. If the biological monitor, in consultation with 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 the biological monitor, in consultation with CDFG, determines that construction occurring in proximity to active nests is not disturbing adults or young, then construction activities can continue. Nests that have been determined to be inactive (with no eggs or young) can be removed with CDFG approval.	Prior to and during construction	VTA Environmental Planning, VTA Construction	VTA Environmental Planning, CDFG
Roosting bats	B-14	A qualified biologist will conduct pre-construction surveys in suitable areas to determine the presence of roosting bats. If bats are roosting within the project area beneath a bridge, in a building, or in 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.	Prior to and during construction	VTA Environmental Planning, VTA Construction	VTA Environmental Planning

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Community Services and Facilities

Note:

1. *CS-1 is from the FEIR. There are no new mitigation measures from the SEIR-1 or SEIR-2.*

Environmental Issue	Measure #	Mitigation Measure	Timeframe for Implementation	Responsibility for Implementation	Oversight for Implementation
City of Milpitas parkland	CS-1	Some combination of the following measures will be implemented through coordination between VTA and the City of Milpitas to address parkland impact: acquire replacement park property immediately adjacent to the parkland site; expand a nearby park; provide additional amenities at the affected parkland site; and/or assist in funding a pedestrian crossing over the railroad corridor that would link and facilitate access to the affected park, possibly at Curtis Avenue. As an alternative to the above measures, VTA would pay an in-lieu fee to the City of Milpitas equivalent to the cost of the development of a replacement park. This was suggested by the City of Milpitas in their comments on the Draft EIR.	Prior to construction	VTA Environmental Planning, City of Milpitas	VTA Environmental Planning

Cultural and Historic Resources

Notes:

1. *CR-1 though CR-4 are retained from the FEIR. A Programmatic Agreement with supporting Treatment Plan was executed in March 2010 to satisfy mitigation requirements from the FEIR (mitigation measures CR-1 through CR-4) and is included as Appendix F in the SEIR-2. There are no new mitigation measures in the SEIR-1 or SEIR-2 applicable to archaeological resources.*
2. *CR-5 through CR-9 in the SEIR-1 no longer apply to Phase 1 as there are no historic architectural properties within the Phase 1 alignment. There are no new mitigation measures in the SEIR-2 applicable to historic architectural properties.*

Environmental Issue	Measure #	Mitigation Measure	Timeframe for Implementation	Responsibility for Implementation	Oversight for Implementation
Archaeological resources	CR-1	Because it is reasonable to conclude that cultural resources are likely to be discovered during implementation of the project, the process for addressing impacts and avoiding, minimizing, or mitigating adverse effects on historic properties will be developed in advance and included in a Memorandum of Agreement (MOA) (or Programmatic	Prior to construction	VTA Environmental Planning	VTA Environmental Planning, FTA, SHPO, ACHP

Environmental Issue	Measure #	Mitigation Measure	Timeframe for Implementation	Responsibility for Implementation	Oversight for Implementation
		Agreement, if determined appropriate) and supporting Cultural Resources Treatment Plan (CRTP).			
Archaeological resources	CR-2	The MOA and CRTP will be developed in consultation with the Native American community, Hispanic historical organizations, appropriate city and county historic preservation bodies, the State Historic Preservation Officer (SHPO), and Advisory Council on Historic Preservation (ACHP). The Federal Transit Administration (FTA), VTA, SHPO, and ACHP will be signatories to the agreement document.	Prior to construction	VTA Environmental Planning, interested stakeholders	VTA Environmental Planning, FTA, SHPO, ACHP
Archaeological resources	CR-3	The CRTP will: • Specify the National Register of Historic Properties 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. • Present 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. • Include a field investigation provision for areas within the Area of Potential Effect where potential resources have been identified, or that are designated as high or moderately sensitive. Field investigations will concentrate on, but will not be confined to, the area of direct impact. • Meet 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 construction	VTA Environmental Planning, interested stakeholders	VTA Environmental Planning, FTA, SHPO, ACHP
Archaeological resources	CR-4	VTA will comply with the terms of the MOA and CRTP. The particular mitigation measures to be written into the MOA and CRTP will be determined in consultation among the signatories and may include: • Conducting controlled subsurface excavations at prehistoric or historic archaeological resources sites;	Prior to, during, and after construction	VTA Environmental Planning, VTA Construction, interested stakeholders	VTA Environmental Planning, FTA, SHPO, ACHP

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Environmental Issue	Measure #	Mitigation Measure	Timeframe for Implementation	Responsibility for Implementation	Oversight for Implementation
		• Conducting subsurface exploratory trenching in large construction-element areas within high and moderately sensitive zones to determine the presence of buried deposits; • Undertaking detailed and focused archival research of particular historic archaeological resources; • Protecting sites or portions of sites from intrusion where practical and feasible, to minimize adverse effects; • Conducting on-site monitoring during surface-disturbing construction activities; • Following procedures established in the CRTP when human remains are encountered; • Completing detailed analyses of artifacts and organic remains consistent with the parameters detailed in the CRTP; • Preparing and distributing reports and results of the technical studies, as detailed in the CRTP; • Providing for the curation of archaeological materials recovered from project sites; • Adhering to the procedures detailed in the CRTP regarding how interested parties will be invited to participate; and • Providing for a public interpretation component in the technical archaeological studies.			

Electromagnetic Fields

Environmental Issue	Measure #	Mitigation Measure	Timeframe for Implementation	Responsibility for Implementation	Oversight for Implementation
		No mitigation is required.			

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Energy

Environmental Issue	Measure #	Mitigation Measure	Timeframe for Implementation	Responsibility for Implementation	Oversight for Implementation
		No mitigation is required.			

Geology, Soils, and Seismicity

Environmental Issue	Measure #	Mitigation Measure	Timeframe for Implementation	Responsibility for Implementation	Oversight for Implementation
		No mitigation is required.			

Greenhouse Gas Emissions

Environmental Issue	Measure #	Mitigation Measure	Timeframe for Implementation	Responsibility for Implementation	Oversight for Implementation
		No mitigation is required.			

Hazardous Materials

Environmental Issue	Measure #	Mitigation Measure	Timeframe for Implementation	Responsibility for Implementation	Oversight for Implementation
		No mitigation is required.			

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Land Use

Environmental Issue	Measure #	Mitigation Measure	Timeframe for Implementation	Responsibility for Implementation	Oversight for Implementation
		No mitigation is required.			

Noise and Vibration

Note:

1. *All noise and vibration mitigation measures from the FEIR and SEIR-1 have been replaced with mitigation measures in the SEIR-2.*

Environmental Issue	Measure #	Mitigation Measure	Timeframe for Implementation	Responsibility for Implementation	Oversight for Implementation
Noise along the alignment	NV-1	Noise mitigation includes sound walls, absorptive sound walls, absorptive acoustical materials for retaining walls, and track absorption. Table 4.13-5 in the SEIR-2 indicates the location of noise mitigation measures. At one location (STA 459+50 to STA 487+00), there is an option for either track level sound absorption panels or a middle sound barrier that would be placed between the two BART alignment tracks. Approximately 13,000 to 15,000 linear feet of sound walls would be needed, depending on the mitigation option selected. Typically, the location of a sound wall is either 10 or 13 feet from the track centerline, depending on the track profile (10 feet for the retained open cut track portions and the aerial guideway, and 13 feet for the at grade and embankment track portions of the Phase 1 alignment). In areas where a sound wall is recommended on both sides of the alignment, absorptive sound walls are the recommended noise mitigation. The locations of the noise mitigation are depicted in Figures 4.13-3A through 4.13-3K in the SEIR-2. Figures 4.13-3H and Figures 4.13-3I show the location of the track level sound absorption panel noise mitigation option and Figures 4.13-3H(a) and 4.13-3I(a) shows the location of the middle sound barrier noise mitigation option.	During Construction	VTA Construction	VTA Environmental Planning

Environmental Issue	Measure #	Mitigation Measure	Timeframe for Implementation	Responsibility for Implementation	Oversight for Implementation
Noise from Hostetter Road to Sierra Road	NV-2	Approximately 2,500 feet of slab track acoustical absorption at track level shall be used to reduce adverse noise effects in the area of the alignment between Hostetter Road and Sierra Road. This mitigation shall occur between STA 459+50 and 486+50 as indicated in Table 4.13-6. Alternatively, a middle sound barrier could be installed between STA 459+50 and 486+50 and designed to achieve a similar reduction in noise levels. A two-sided, absorptive sound barrier in the middle of S1 and S2 tracks with a minimum height of 5 feet above the top of rail is an alternative to track level absorptive panels. In addition to the middle sound barrier, sound absorptive material would be required on both retaining walls of the retained cut. The sound absorptive material on the retaining walls would be placed as low as possible and cover a minimum of four feet in vertical extent. The material should possess a minimum noise reduction coefficient of 0.65 and a minimum absorption coefficient of 0.60 at 500 Hz. Should an alternative noise mitigation measure be evaluated and selected, that mitigation measure would be required to provide a comparable noise reduction. Figures 4.13-3H and 4.13-3H(a) and 4.13-3I and 4.13-I(a) in the SEIR-2 show the location of the noise mitigation options between Hostetter Road and Sierra Road.	During Construction	VTA Construction	VTA Environmental Planning
Noise along the alignment	NV-3	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 the FTA on the results of the testing. The testing will also serve to inform the need for additional wayside residential noise mitigation mentioned in Mitigation Measures NV-1 and NV-4.	During project start-up, prior to revenue operations	VTA Design and Construction	VTA Environmental Planning

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Environmental Issue	Measure #	Mitigation Measure	Timeframe for Implementation	Responsibility for Implementation	Oversight for Implementation
Noise along the alignment	NV-4	Noise insulation and other measures shall be provided for residences with second floors or higher that are exposed to noise levels in excess of the 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 in 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, potentially significant noise impacts could result in noise levels in excess of the FTA criteria. Table 4.13-7 identifies the location and length of recommended sound wall absorptive material that would be necessary in addition to the absorptive sound wall specified in Table 4.13-5 in the SEIR-2, as required by Mitigation Measure NV-1. Figures 4.13-3A through 4.13-3K of the SEIR-2 show the locations of the noise mitigation.	During Construction	VTA Construction	VTA Environmental Planning
Vibration along the alignment	NV-5	Table 4.13-9 in the SEIR-2 summarizes the vibration mitigation necessary to achieve the FTA criteria. The proposed mitigation is tire derived aggregate and 8-Hz FST. The locations of the vibration mitigation are depicted on Figures 4.13-A through 4.13-3K in the SEIR-2.	During construction	VTA Construction	VTA Environmental Planning
Vibration along the alignment at the Vasona LRT Line	NV-6	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 presented to the FTA in 2009. The technical evaluation will then be presented to the FTA for review and comment.	Following construction	VTA Construction	VTA Environmental Planning

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Security and System Safety

Environmental Issue	Measure #	Mitigation Measure	Timeframe for Implementation	Responsibility for Implementation	Oversight for Implementation
		No mitigation is required.			

Socioeconomics

Environmental Issue	Measure #	Mitigation Measure	Timeframe for Implementation	Responsibility for Implementation	Oversight for Implementation
		No mitigation is required.			

Utilities

Environmental Issue	Measure #	Mitigation Measure	Timeframe for Implementation	Responsibility for Implementation	Oversight for Implementation
		No mitigation is required.			

Visual Quality and Aesthetics

Environmental Issue	Measure #	Mitigation Measure	Timeframe for Implementation	Responsibility for Implementation	Oversight for Implementation
Removal of trees	VIS-1	Removal of trees will be replaced at a 1:1 ratio within the relevant visual analysis area.	During Construction	VTA Construction	VTA Environmental Planning

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Water Resources, Water Quality, and Floodplains

Notes:

1. *Mitigation Measure WR-1 from the FEIR has been updated in the SEIR-2.*

Environmental Issue	Measure #	Mitigation Measure	Timeframe for Implementation	Responsibility for Implementation	Oversight for Implementation
Flood-proof structures	WR-1	Retained cut sections, retained fill sections, station entrances, and access points should maintain 6 inches to 1 foot of freeboard above the base 100-year flood elevation, as required.	During Construction	VTA Construction	VTA Environmental Planning

Construction: Transportation

Environmental Issue	Measure #	Mitigation Measure	Timeframe for Implementation	Responsibility for Implementation	Oversight for Implementation
		No mitigation is required.			

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Construction: Air Quality

Environmental Issue	Measure #	Mitigation Measure	Timeframe for Implementation	Responsibility for Implementation	Oversight for Implementation
Construction Emissions	CNST-AQ-1	Construction contractors shall implement the BAAQMD Basic Construction Mitigation Measures listed below and the applicable measures in the Additional Construction Mitigation Measures, also listed below. This includes Measure 10 in the Additional Construction Mitigation Measures. **Basic Construction Mitigation Measures** The following controls should be implemented at all construction sites:	During construction	VTA Construction	VTA Environmental Planning
Construction Emissions	CNST-AQ-1(1)	1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.	During construction	VTA Construction	VTA Environmental Planning
Construction Emissions	CNST-AQ-1(2)	2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.	During construction	VTA Construction	VTA Environmental Planning
Construction Emissions	CNST-AQ-1(3)	3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.	During construction	VTA Construction	VTA Environmental Planning
Construction Emissions	CNST-AQ-1(4)	4. All vehicle speeds on unpaved roads shall be limited to 15 mph.	During construction	VTA Construction	VTA Environmental Planning
Construction Emissions	CNST-AQ-1(5)	5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.	During construction	VTA Construction	VTA Environmental Planning
Construction Emissions	CNST-AQ-1(6)	6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.	During construction	VTA Construction	VTA Environmental Planning

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Environmental Issue	Measure #	Mitigation Measure	Timeframe for Implementation	Responsibility for Implementation	Oversight for Implementation
Construction Emissions	CNST-AQ-1(7)	7. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.	During construction	VTA Construction	VTA Environmental Planning
Construction Emissions	CNST-AQ-1(8)	8. Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.	During construction	VTA Construction	VTA Environmental Planning
Construction Emissions	CNST-AQ-2	Additional Construction Mitigation Measures. The following measures are recommended for projects with construction emissions above the threshold.	During construction	VTA Construction	VTA Environmental Planning
Construction Emissions	CNST-AQ-2(1)	1. All exposed surfaces shall be watered at a frequency adequate to maintain minimum soil moisture of 12 percent. Moisture content can be verified by lab samples or moisture probe.	During construction	VTA Construction	VTA Environmental Planning
Construction Emissions	CNST-AQ-2(2)	2. All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph.	During construction	VTA Construction	VTA Environmental Planning
Construction Emissions	CNST-AQ-2(3)	3. Wind breaks (e.g., trees, fences) shall be installed on the windward side(s) of actively disturbed areas of construction. Wind breaks should have at maximum 50 percent air porosity.	During construction	VTA Construction	VTA Environmental Planning
Construction Emissions	CNST-AQ-2(4)	4. Vegetative ground cover (e.g., fast-germinating native grass seed) shall be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established.	During construction	VTA Construction	VTA Environmental Planning
Construction Emissions	CNST-AQ-2(5)	5. The simultaneous occurrence of excavation, grading, and ground-disturbing construction activities on the same area at any one time shall be limited. Activities shall be phased to reduce the amount of disturbed surfaces at any one time.	During construction	VTA Construction	VTA Environmental Planning
Construction Emissions	CNST-AQ-2(6)	6. All trucks and equipment, including their tires, shall be washed off prior to leaving the site.	During construction	VTA Construction	VTA Environmental Planning

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Environmental Issue	Measure #	Mitigation Measure	Timeframe for Implementation	Responsibility for Implementation	Oversight for Implementation
Construction Emissions	CNST-AQ-2(7)	7. Site accesses to a distance of 100 feet from the paved road shall be treated with a 6 to 12 inch compacted layer of wood chips, mulch, or gravel.	During construction	VTA Construction	VTA Environmental Planning
Construction Emissions	CNST-AQ-2(8)	8. Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways from sites with a slope greater than one percent.	During construction	VTA Construction	VTA Environmental Planning
Construction Emissions	CNST-AQ-2(9)	9. Minimizing the idling time of diesel powered construction equipment to two minutes.	During construction	VTA Construction	VTA Environmental Planning
Construction Emissions	CNST-AQ-2(10)	10. Phase 1 shall develop a plan demonstrating that the off-road equipment (more than 50 horsepower) to be used in the construction project (i.e., owned, leased, and subcontractor vehicles) would achieve a project wide fleet-average 20 percent NOX reduction and 45 percent PM reduction compared to the most recent ARB fleet average. Acceptable options for reducing emissions include the use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other options as such become available.	During construction	VTA Construction	VTA Environmental Planning
Construction Emissions	CNST-AQ-2(11)	11. Use low VOC (i.e., ROG) coatings beyond the local requirements (i.e., Regulation 8, Rule 3: Architectural Coatings).	During construction	VTA Construction	VTA Environmental Planning
Construction Emissions	CNST-AQ-2(12)	12. Requiring that all construction equipment, diesel trucks, and generators be equipped with Best Available Control Technology for emission reductions of NOx and PM.	During construction	VTA Construction	VTA Environmental Planning
Construction Emissions	CNST-AQ-2(13)	13. Requiring all contractors use equipment that meets CARB's most recent certification standard for off-road heavy duty diesel engines.	During construction	VTA Construction	VTA Environmental Planning

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Construction: Biological Resources

Notes:

1. *In general, all the mitigation measures in the FEIR and SEIR-1 have been renumbered in the SEIR-2.*
2. *Mitigation measures CNST-BIO-1 through CNST-BIO-9 are all new mitigation measures in the SEIR-2 to supplement the mitigation measures in the FEIR and SEIR-1.*

Environmental Issue	Measure #	Mitigation Measure	Timeframe for Implementation	Responsibility for Implementation	Oversight for Implementation
Nesting swallows and migratory birds	CNST-BIO-1	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
Nesting swallows	CNST-BIO-2	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.	Prior to construction and during construction	VTA Environmental Planning, VTA Construction	VTA Environmental Planning
Roosting bats	CNST-BIO-3	A qualified biologist will conduct preconstruction surveys in suitable habitat determine the presence of roosting bats. If no roosting bats are found, then no further mitigation is warranted.	Prior to construction	VTA Environmental Planning, VTA Construction	VTA Environmental Planning

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Environmental Issue	Measure #	Mitigation Measure	Timeframe for Implementation	Responsibility for Implementation	Oversight for Implementation
Roosting bat habitat	CNST-BIO-4	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 impacted prior to the onset of construction activities.	Prior to and during construction	VTA Environmental Planning, VTA Construction	VTA Environmental Planning, CDFG
Fish and other in-stream species	CNST-BIO-5	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 impacts to riparian habitat and steelhead and Chinook salmon fisheries.	During construction	VTA Construction	VTA Environmental Planning
Special status aquatic species - general	CNST-BIO-6	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 impacts 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.	Prior to and during construction	VTA Construction	VTA Environmental Planning
Special status aquatic species – general	CNST-BIO-7	The following recommendations by CDFG will be followed to address water quality impacts:	During construction	VTA Construction	VTA Environmental Planning
Special status aquatic species – general	CNST-BIO-7(1)	No equipment will be operated in the live stream channel.	During construction	VTA Construction	VTA Environmental Planning
Special status aquatic species – general	CNST-BIO-7(2)	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
Special status aquatic species – general	CNST-BIO-7(3)	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.	During construction	VTA Construction	VTA Environmental Planning

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Environmental Issue	Measure #	Mitigation Measure	Timeframe for Implementation	Responsibility for Implementation	Oversight for Implementation
Special status aquatic species – general	CNST-BIO-7(4)	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.	Prior to and during construction	VTA Construction	VTA Environmental Planning
California red-legged frog or California tiger salamanders	CNST-BIO-8	The following mitigation measures will be followed to avoid or minimize take of California red-legged frogs or California tiger salamanders:	Prior to, during, and following construction	VTA Environmental Planning	VTA Environmental Planning
California red-legged frog or California tiger salamanders	CNST-BIO-8(1)	A qualified biologist will conduct pre-construction surveys for California red-legged frog and California 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.	Prior to construction	VTA Environmental Planning	VTA Environmental Planning
California red-legged frog or California tiger salamanders	CNST-BIO-8(2)	No activities will occur in suitable frog or 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 (USFWS). The rainy season is defined as a frontal system that results in depositing 0.25 inches or more of precipitation in one event.	During construction	VTA Construction	VTA Environmental Planning, USFWS
California red-legged frog or California tiger salamanders	CNST-BIO-8(3)	Vehicles to and from the project site will be confined to existing roadways and defined access routes to minimize disturbance of California red-legged frog and California tiger salamander habitat.	During construction	VTA Construction	VTA Environmental Planning
California red-legged frog or California tiger salamanders	CNST-BIO-8(4)	If a California red-legged frog or California tiger salamander is encountered during excavations, or any project activities, activities will cease until the frog or salamander is removed and relocated by a USFWS-permitted biologist. Exclusionary fencing will be installed to prevent red-legged frogs or tiger salamanders from re-entering the work area. Any incidental take will be reported to the USFWS immediately by telephone.	During construction	VTA Construction	VTA Environmental Planning, USFWS

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Environmental Issue	Measure #	Mitigation Measure	Timeframe for Implementation	Responsibility for Implementation	Oversight for Implementation
California red-legged frog or California tiger salamanders	CNST-BIO-8(5)	If suitable red-legged frog habitat or tiger salamander is disturbed or 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 USFWS.	During and following construction	VTA Construction	VTA Environmental Planning
California red-legged frog or California tiger salamanders	CNST-BIO-8(6)	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 USFWS	During and following construction	VTA Construction	VTA Environmental Planning, USFWS
Aquatic habitat	CNST-BIO-9	A qualified biologist will conduct a preconstruction 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 Environmental Planning
General	CNST-BIO-10	Construction phase mitigation measures will be included in a Mitigation Monitoring and Reporting Program that will be incorporated in the project's plans and specifications. Furthermore, USFWS, National Oceanic and Atmospheric Administration (NOAA) Fisheries, ACOE, and CDFG will be consulted regarding potential impacts and appropriate construction-phase mitigation measures.	Prior to construction	VTA Environmental Planning, VTA Construction	VTA Environmental Planning, USFWS, NOAA Fisheries, ACOE, CDFG
Worker education	CNST-BIO-11	Construction workers will be educated regarding the sensitive plant and wildlife species in the project vicinity, including methods to avoid or minimize impacts to biological resources.	Prior to and during construction	VTA Construction	VTA Environmental Planning

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Environmental Issue	Measure #	Mitigation Measure	Timeframe for Implementation	Responsibility for Implementation	Oversight for Implementation
Special status plant species	CNST-BIO-12	Areas occupied by Congdon's tarplant or other special status species plants will be avoided to the maximum extent practicable. (Also see Mitigation Measure B-1(a) through B-1(f).	During construction	VTA Construction	VTA Environmental Planning
Special status plant species	CNST-BIO-13	Pre-construction surveys for Congdon's tarplant will be conducted during the June to November flowering periods. Any identified areas will be marked as ESAs and protected with orange fencing until after seed-set to prevent accidental intrusion by construction workers/equipment. Coordination of specific compensatory mitigation measures will be carried out with CDFG to address any unavoidable impacts.	Prior to and during construction	VTA Environmental Planning, VTA Construction	VTA Environmental Planning, CDFG
Special status plant species	CNST-BIO-14	Pre-construction surveys will be conducted for alkali milkvetch and diamond-petaled California poppy during their bloom period (March to June and March to April, respectively). If any plants are found, they will be marked as ESAs and protected by orange safety fencing. Compensatory measures will be coordinated with CDFG to address any unavoidable impacts.	Prior to and during construction	VTA Environmental Planning, VTA Construction	VTA Environmental Planning, CDFG
Riparian habitat	CNST-BIO-15	A riparian corridor buffer zone will be provided along the banks of creeks.	Prior to and during construction	VTA Construction	VTA Environmental Planning
Wetlands and waters of the U.S.	CNST-BIO-16	For impacts to wetland and waters of the U.S., VTA will comply with the U.S. Army Corp of Engineers Section 404 nationwide permit conditions including pre-construction notification, compensatory mitigation, and restoration plans.	Prior to and during construction	VTA Environmental Planning, VTA Construction	VTA Environmental Planning
In-channel construction	CNST-BIO-17	Construction within the channels that cross the Project alignment, 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.	Prior to and during construction	VTA Construction	VTA Environmental Planning
California red-legged frog	CNST-BIO-18	Pre-construction surveys will be conducted for California red-legged frogs prior to any construction activities occurring at Guadalupe River, Coyote Creek, Upper Penitencia Creek, and Lower Silver Creek.	Prior to construction	VTA Environmental Planning, VTA Construction	VTA Environmental Planning

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Environmental Issue	Measure #	Mitigation Measure	Timeframe for Implementation	Responsibility for Implementation	Oversight for Implementation
California red-legged frog	CNST-BIO-19	A USFWS-permitted biologist will relocate California red-legged frogs encountered in the work area and exclusionary fencing will be installed to prevent California red-legged frogs from re-entering the work area.	Prior to and during construction	VTA Environmental Planning, VTA Construction	VTA Environmental Planning
Southwestern pond turtle	CNST-BIO-20	Pre-construction surveys will be conducted for southwestern pond turtles prior to any construction activities occurring at Guadalupe River, Coyote Creek, Upper Penitencia Creek, and Lower Silver Creek.	Prior to construction	VTA Environmental Planning, VTA Construction	VTA Environmental Planning
Southwestern pond turtle	CNST-BIO-21	A qualified biologist will relocate southwestern pond turtles encountered from the work area and exclusionary fencing will be installed to prevent southwestern pond turtles from re-entering the work area.	Prior to and during construction	VTA Environmental Planning, VTA Construction	VTA Environmental Planning
Western burrowing owl	CNST-BIO-22	A preconstruction survey of suitable habitat within 250 feet of construction areas (access permitting) will be conducted per California Department of Fish and Game (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. If burrowing owls are found, additional mitigation will be implemented, as described in mitigation measures CNST-BIO-23 through CNST-BIO-25.	Prior to and during construction	VTA Environmental Planning, VTA Construction	VTA Environmental Planning
Western burrowing owl	CNST-BIO-23	If burrowing owls are determined to be present, avoidance of occupied burrows is the preferred method of addressing potential impacts. 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

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Environmental Issue	Measure #	Mitigation Measure	Timeframe for Implementation	Responsibility for Implementation	Oversight for Implementation
Western burrowing owl	CNST-BIO-24	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
Western burrowing owl	CNST-BIO-25	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.	During construction	VTA Environmental Planning, VTA Construction	VTA Environmental Planning
Nesting raptors	CNST-BIO-26(a)	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
Nesting raptors	CNST-BIO-26(b)	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 impact area for raptor nests. 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 Construction	VTA Environmental Planning

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Environmental Issue	Measure #	Mitigation Measure	Timeframe for Implementation	Responsibility for Implementation	Oversight for Implementation
Nesting swallows	CNST-BIO-27	Pre-construction surveys will be conducted for nesting swallows under bridge structures and in riparian habitat located within the project area during the nesting season (generally March through August).	Prior to construction	VTA Environmental Planning, VTA Construction	VTA Environmental Planning
Nesting swallows	CNST-BIO-28	Construction activities will be delayed within specified distances from occupied swallow nests if it is determined that construction would disrupt nesting behavior and until swallows are no longer nesting or the fledglings are self-sufficient.	During construction	VTA Construction	VTA Environmental Planning
Nesting migratory birds and non-game mammals	CNST-BIO-29	Vegetation and structures that could support nests or roosts of species such as migratory songbirds and non-game mammals, such as bats, will be surveyed prior to the onset of construction activities.	Prior to construction	VTA Environmental Planning, VTA Construction	VTA Environmental Planning
Nesting migratory birds and non-game mammals	CNST-BIO-30	A combination of avoidance, installation of exclusion devices, and monitoring will be implemented to assure protection of migratory birds and non-game mammals.	During construction	VTA Environmental Planning, VTA Construction	VTA Environmental Planning

Construction: Greenhouse Gas Emissions

Environmental Issue	Measure #	Mitigation Measure	Timeframe for Implementation	Responsibility for Implementation	Oversight for Implementation
Greenhouse Gas Construction Emissions	CNST-GHG-1	VTA shall ensure that construction waste and demolition materials are recycled and that 50 percent of the construction waste is diverted from landfill, in accordance with the BAAQMD recommended guidance for reducing GHG emissions during construction.	During construction	VTA Construction	VTA Environmental Planning

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Construction: Hazardous Materials

Note:

1. *The following mitigation measures are new from the SEIR-2.*

Environmental Issue	Measure #	Mitigation Measure	Timeframe for Implementation	Responsibility for Implementation	Oversight for Implementation
Soil and groundwater quality	CNST-HAZ-1	VTA shall ensure that mitigation measures identified in the Contaminant Management Plan are implemented during the construction of Phase 1.	During construction	VTA Construction	VTA Environmental Planning
Soil and groundwater contamination	CNST-HAZ-2	VTA shall ensure that mitigation measures identified in the "Site Management Plan – Former Ford Automobile Assembly Plant Formerly 1100 South Main Street, Milpitas, California" are implemented during construction of Phase 1 at the Great Mall.	Prior to and during construction	VTA Construction	VTA Environmental Planning
Exposure of hazardous materials	CNST-HAZ-3	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 by VTA, certified by CERCLA, and implemented during construction of Phase 1.	During construction	VTA Construction	VTA Environmental Planning, RWQCB

Construction: Noise and Vibration

Note:

1. *The following mitigation measures from the FEIR and SEIR-1 have been renumbered. The SEIR-2 did not identify any new construction noise and vibration mitigation measures.*

Environmental Issue	Measure #	Mitigation Measure	Timeframe for Implementation	Responsibility for Implementation	Oversight for Implementation
Noise and vibration – contract specification	CNST-NOISE-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

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Environmental Issue	Measure #	Mitigation Measure	Timeframe for Implementation	Responsibility for Implementation	Oversight for Implementation
Noise and vibration – public notification program	CNST-NOISE-2	A public notification program will be implemented by VTA to alert residents and institutions well in advance of particular disruptive construction activities. A complaint resolution procedure will also be put in place by VTA to rapidly address any noise and vibration problems that may develop during construction.	During construction	VTA Community Outreach	VTA Environmental Planning
Noise and vibration– siting of stationary equipment	CNST-NOISE-3	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
Noise – temporary noise barriers	CNST-NOISE-4	Temporary noise barriers or noise control curtains will be constructed in areas between noisy activities and noise-sensitive receptors, where practical and effective. 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 criteria, retrofitting existing windows and doors with new acoustically rated units may be considered for the residential structures.	During construction	VTA Construction	VTA Environmental Planning
Noise – type of equipment	CNST-NOISE-5	When feasible, the following equipment will be used: electric powered equipment instead of diesel-powered equipment; hydraulic tools instead of pneumatic impact tools; electric driven saws instead of air- or gasoline-driven saws.	During construction	VTA Construction	VTA Environmental Planning
Noise – pile driving	CNST-NOISE-6	A resonant-free vibratory pile driver or an augering drill-rig will be used for setting piles in lieu of impact pile drivers where feasible.	During construction	VTA Construction	VTA Environmental Planning

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Environmental Issue	Measure #	Mitigation Measure	Timeframe for Implementation	Responsibility for Implementation	Oversight for Implementation
Noise – construction hours	CNST-NOISE-7	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 both VTA and local jurisdictions to reduce other related environmental impacts 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 impacting the nearby residents.	During construction	VTA Construction	VTA Environmental Planning
Noise – nighttime construction	CNST-NOISE-8	Operate equipment so as to minimize banging, clattering, buzzing, and other annoying types of noises, especially near residential areas during the nighttime hours.	During construction	VTA Construction	VTA Environmental Planning
Noise – idling	CNST-NOISE-9	Turn off idling equipment, whenever possible.	During construction	VTA Construction	VTA Environmental Planning
Noise – lining equipment	CNST-NOISE-10	Line or cover hoppers, conveyor transfer points, storage bins, and chutes with sound-deadening material. Line haul truck beds with rubber or sand to reduce impact noise, if needed and requested by the Resident Engineer.	During construction	VTA Construction	VTA Environmental Planning
Noise – haul routes	CNST-NOISE-11	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
Noise – back-up alarms	CNST-NOISE-12	Use back-up alarms that are less intrusive in noise-sensitive areas. 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
Noise – plates over trenches	CNST-NOISE-13	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

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Environmental Issue	Measure #	Mitigation Measure	Timeframe for Implementation	Responsibility for Implementation	Oversight for Implementation
Noise and vibration – BMPS	CNST-NOISE-14	The contractor will 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
Noise –noise measurements	CNST-NOISE-15	The contractor will perform pre-construction ambient noise measurements at or near noise-sensitive locations along the line portion of the alignment (Warm Springs to east tunnel portal). The locations of measurements by stationing number are 223+00, 478+00, and 484+000 on the Eastside of the tracks (S1 Tracks), and 190+00, 202+00, 267+00, 410+00, 435+00, 470+00, 507+00 on the Westside of the tracks (S2 Track). This will serve to document the noise environment just prior to start of construction at representative locations. These measurements will be performed continuously over a minimum of ten days.	Prior to construction	VTA Construction	VTA Environmental Planning
Noise – noise measurements	CNST-NOISE-16	The contractor will perform a 30-minute Leq noise sampling at representative noise sensitive locations within 250 feet of the construction site 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

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Environmental Issue	Measure #	Mitigation Measure	Timeframe for Implementation	Responsibility for Implementation	Oversight for Implementation
Noise – noise measurements	CNST-NOISE-17	Construction noise measurements will coincide with periods of maximum noise-generating activity, and will 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, and will include the location of and details about the construction activity, a sketch of noise monitoring location(s), the noise measurement details such as specifics about the time of day and duration of the measurements, weather conditions, the type of measurement equipment and dates of calibration, measurement results, and other factors pertinent to the data collection.	During construction	VTA Construction	VTA Environmental Planning
Noise –noise measurements	CNST-NOISE-18	The contractor will perform pre-construction ambient noise measurements at the construction staging areas that include the east and west tunnel portal locations (Mabury Road and US 101 CSA and I-880 CSA, respectively), at the station and vent shaft areas, and at the gap breaker station sites. This will serve to document the noise environment just prior to start of construction. These measurements will be performed over a minimum of ten days, except at the gap breaker sites, where measurements will be conducted for four days.	Prior to construction	VTA Construction	VTA Environmental Planning
Noise – Noise Control Plan and a Noise Monitoring Plan	CNST-NOISE-19	The contractor will 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 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.	Prior to construction	VTA Construction	VTA Environmental Planning

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Environmental Issue	Measure #	Mitigation Measure	Timeframe for Implementation	Responsibility for Implementation	Oversight for Implementation
Noise – Noise Control Plan	CNST-NOISE-20	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 contractor will not operate noise-generating equipment at the construction site prior to acceptance of the Noise Control Plan.	Prior to and during construction	VTA Construction	VTA Environmental Planning
Noise – Noise Monitoring Plan	CNST-NOISE-21	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. The contractor will not operate noise-generating equipment at the construction site prior to acceptance of the Noise Monitoring Plan.	Prior to and during construction	VTA Construction	VTA Environmental Planning
Noise – noise testing of equipment	CNST-NOISE-22	Major equipment to be used at the surface of the construction site for a total duration greater than five days will be 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 (see Table 4.18–9 in the Draft SEIR, page 282). 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.	During construction	VTA Construction	VTA Environmental Planning
Vibration – piling	CNST-NOISE-23	Impact pile driving will be avoided near vibration-sensitive areas, where possible. Drilled piles the use of a sonic or vibratory pile driver, or other "quiet piling" techniques are quieter alternatives and may be used where geological conditions permit.	During construction	VTA Construction	VTA Environmental Planning

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Environmental Issue	Measure #	Mitigation Measure	Timeframe for Implementation	Responsibility for Implementation	Oversight for Implementation
Vibration – monitoring during pile driving	CNST-NOISE-24	The contractor will initially perform vibration monitoring at the nearest residence or commercial structure within 100 feet of pile driving operations. 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 during pile driving operations.	During construction	VTA Construction	VTA Environmental Planning

Construction: Utilities

Note:

1. *The following measure is from the FEIR. There are no new mitigation measures from the SEIR-1 or SEIR-2.*

Environmental Issue	Measure #	Mitigation Measure	Timeframe for Implementation	Responsibility for Implementation	Oversight for Implementation
Utilities	CNST-UTIL-1	Underground utilities that do not need to be relocated either temporarily or permanently will be uncovered and reinforced, if necessary, and supported in place during construction by hanging from support beams spanning across the excavation.	During construction	VTA Construction	VTA Environmental Planning

Construction: Visual Quality and Aesthetics

Note:

2. *The following measure is from the FEIR. There are no new mitigation measures from the SEIR-1 or SEIR-2.*

Environmental Issue	Measure #	Mitigation Measure	Timeframe for Implementation	Responsibility for Implementation	Oversight for Implementation
Visual quality and aesthetics	CNST-VIS-1	Visual screening will be erected at construction sites by VTA, as appropriate.	During construction	VTA Construction	VTA Environmental Planning

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Construction Education and Outreach Plan

Environmental Issue	Measure #	Mitigation Measure	Timeframe for Implementation	Responsibility for Implementation	Oversight for Implementation
Construction education and outreach plan	CNST-1	A Construction Education and Outreach Plan will be developed by VTA prior to construction commencing 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.	During construction	VTA Outreach	VTA Environmental Planning

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