BART SILICON VALLEY BERRYESSA EXTENSION PROJECT

Environmental Compliance Matrix (Appendix A - Environmental Compliance Plan)

Sheet Identification: VTA - MMRP

LEGEND

Blue Text	Indicates updates since last quarterly report
(No fill)	State Env. Clearance/CEQA ONLY (i.e., SVBX FEIR/SEIR-1/SEIR-2 and/or Upper Penitencia (P-MND)
	Federal Env. Clearance (NEPA FEIS) and/or EIRs (FEIR/SEIR-1/SEIR-2) and/or Upper Penitencia (P-MND)
	Applies to Stations/Campus Contract (C720)
	Mitigation Measure Complete with date (or reference to quarterly report with information)
~~strikeout~~	Mitigation Measure no longer applies to the project.
USFWS	U.S. Fish and Wildlife Service Letter of Concurrence (FWS LOC), Reference No. 81420-2009-1-1296-1
NMFS	National Marine Fisheries Service Biological Opinion (NMFS BO), Reference No. 2011105478
USACE	U.S. Army Corps of Engineers Section 404 Permit (404), File Number 28924S
FTA	Federal Transit Administration
FRA	Federal Railroad Administration
FHWA	Federal Highway Administration
CDFG	California Department of Fish and Game Lake and Streambed Alteration Agreement (LSAA), Notification No. 1600-2011-0303-R3
CDT	California Department of Transportation
RWQCB	Regional Water Quality Control Board Section 401 Water Quality Certification, Site No.: 02-43-C0654 (bkw); CIWQS Place ID No. 769794

C	Construction	Timeframe Instructions: Type letter for desired timeframe and cell will automatically color code. C (for construction), D (for Design), P (for post construction)
D	Design	
P	Post Construction	
F	Full	Completion Status Instructions: Type letter for desired status and cell will automatically color code. F (for Fully Complete), IP (for In Progress), NA (for Non Applicable)
IP	In Progress	
NA	Non Applicable	

BART Silicon Valley - Berryessa Extension Project

Chrono. #	Env. Issue	Source Document	Meas. #	Mitigation Monitoring and Reporting Program (MMRP)	Implementation: Timeframe: Design (D), Const (C), Post-Const (P)	Implementation: Responsible Party (VTA, Contractor)*	Verification: 4Q 2017 Notes	Verification: Date Mitigation Completed
Biological Resources and Wetlands								
MMRP1	Congdon's tarplant	SEIR-2	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).	C	VTA	COMPLETE	**3Q 2011** **Refer to B-1d and B-1e for monitoring**
MMRP2	Congdon's tarplant	SEIR-2	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.	C	VTA	COMPLETE	**3Q 2011** **Refer to B-1d and B-1e for monitoring**
MMRP3	Congdon's tarplant	SEIR-2	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 hydro seeding prior to the start of the rainy season in areas.	C	VTA	COMPLETE	**3Q 2011** **Refer to B-1d and B-1e for monitoring**

MMRP4	Congdon's tarplant	SEIR-2	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.	P	VTA	COMPLETE	**4Q 2012**
MMRP5	Congdon's tarplant	SEIR-2	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.	P	VTA	COMPLETE	**4Q 2013**
MMRP6	Congdon's tarplant	SEIR-2	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.	P	VTA	COMPLETE	**4Q 2013**
MMRP7	Wetlands and waters of the U.S.	SEIR-2	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 the Phase 1 . Alternatively, VTA may purchase credits in an approved mitigation bank.	D	VTA	COMPLETE	**3Q 2011**
MMRP8	Wetlands and waters of the U.S.	FEIS	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.	D	Contractor	COMPLETE	**3Q 2011**
MMRP9	Wetlands and waters of the U.S.	FEIS	BIO-4-1	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.	D	VTA	COMPLETE	**3Q 2011**

MMRP9			BIO-4-2	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.	D	VTA	COMPLETE	**3Q 2011** **Monitoring reports will be submitted in accordance with approved Mitigation and Monitoring Plan**
MMRP10	Riparian habitat	SEIR-2	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.	D	Contractor for design/ construction. VTA for mitigation and monitoring plan.	COMPLETE	**3Q 2011**
MMRP11	Riparian habitat	SEIR-2	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).	D	VTA	COMPLETE	**3Q 2011**
MMRP12	Riparian habitat	SEIR-2	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).	D	VTA	COMPLETE	**3Q 2011**
MMRP13	Riparian habitat	SEIR-2	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.	D	VTA	COMPLETE	**3Q 2011**
MMRP14	Riparian habitat	SEIR-2	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.	D	VTA	COMPLETE	**3Q 2011**
MMRP15	Riparian habitat	FEIS	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.	D	Contractor	COMPLETE	**3Q 2011**
MMRP16	Riparian habitat	FEIS	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.	D	VTA	COMPLETE	**3Q 2011**

MMRP17	Protection of special status species – Southwestern Pond Turtle	SEIR-2	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. (Also see Mitigation Measures C-14 and C-15.)	C	Contractor for construction fencing, VTA for biological surveys and species relocation.	COMPLETE	**2Q 2011**
MMRP18	Protection of special status animal species – general	SEIR-2	B-9	Areas occupied by Western burrowing owls or other special status species will be avoided to the maximum extent practicable.	C	Contractor	COMPLETE	**3Q 2011**
MMRP19	Protection of special status species – nesting raptors	SEIR-2	B-10	No mitigation is required if construction activities occur during the non-breeding season of nesting raptors (generally September through January).	C	Contractor	COMPLETE	**4Q 2012**
MMRP20	Protection of special status species – nesting raptors	SEIR-2	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. (Also see Mitigation Measure C-17.)	C	VTA	COMPLETE	**4Q 2012**
MMRP21	Protection of special status species – nesting raptors	SEIR-2	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. (Also see Mitigation Measure C-18.)	C	VTA	COMPLETE	**4Q 2012**
MMRP22	Protection of special status species – nesting swallows and other migratory birds	SEIR-2	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. (Also see Mitigation Measures C-19 to C-22.)	C	VTA	**4Q 2017 is outside the nesting season, and no swallows were disturbed.**	
MMRP23	Protection of special status species – roosting bats	SEIR-2	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. (Also see Mitigation Measures C-21 and C-22.)	C	VTA for preconstruction survey, Contractor for modifications to construction time & method	**During 4Q 2017, no surveys were necessary since it is outside the nesting season,**	

Community Services and Facilities								
MMRP24	City of Milpitas parkland	FEIR	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.	P	VTA	COMPLETE	**4Q 2013**
Cultural and Historic Resources								
MMRP25	Archaeological resources	FEIR	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 Agreement, if determined appropriate) and supporting Cultural Resources Treatment Plan (CRTP). (Also see Mitigation Measure C-23.)	D	VTA	COMPLETE	**1Q 2010**
MMRP26	Archaeological resources	FEIR	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. (Also see Mitigation Measure C-23.)	D	VTA	COMPLETE	**1Q 2010**
MMRP27	Archaeological resources	FEIR	CR-3-1	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).	D	VTA	**No discoveries were encountered during 4Q 2017.**	
MMRP28	Archaeological resources	FEIR P-MND	CR-4-1 CUL-1	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; · 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. (Also see Mitigation Measure C-23.)	D	VTA	See MMRP27	

MMRP29	Historic Archaeological properties	FEIS	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).	D	VTA	See MMRP27	
Hazardous Materials								
MMRP30	Soil and groundwater contamination	FEIS	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.	D	VTA	COMPLETE	**4Q 2014**
MMRP31	Soil and groundwater contamination	FEIS	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 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.	D	VTA	COMPLETE	**4Q 2014**
MMRP32	Soil and groundwater contamination	FEIS	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.	D	VTA	COMPLETE	**4Q 2014**
MMRP33	Soil and groundwater contamination	FEIS	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.	D	VTA	COMPLETE	**4Q 2014**

Noise and Vibration								
MMRP34	Noise along the alignment	SEIR-2	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.	D	Contractor	All soundwalls along the C700 alignment have been completed except Milpitas Station wall located at the Crossings complex. **The C650 contract will complete the Crossings soundwall by the end of 1Q2018.**	
MMRP35	Noise from Hostetter Road to Sierra Road	SEIR-2	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.	D	Contractor	COMPLETE	**2Q 2017**
~~MMRP36~~	~~Noise along the alignment~~	~~SEIR-2~~	~~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.~~	~~C~~	~~VTA~~	NOT APPLICABLE Noise studies were updated to reflect current design with ballast and tie tracks between STA 459+00 and STA 487+00 in April 2011. As a result, track level acoustic absorption is no longer required. Instead, noise requirements are met by applying spray acoustic absorption to the trench in this section.	**2Q 2011 for Noise Study update.**
MMRP37	Noise along the alignment	FEIS Section 5.15.2 FEIR Section 4.18.4.4	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.	D	VTA for work in private residences, Contractor for soundwall design	COMPLETE	**3Q2016**

MMRP38	Vibration along the alignment	SEIR-2	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.	D	Contractor	COMPLETE	**3Q2016**
MMRP39	Vibration along the alignment at the Vasona LRT Line	SEIR-2	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.	C	VTA	To be completed prior to revenue operations.	
MMRP40	Noise and Vibration	FEIS	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.	D	Contractor	COMPLETE	**1Q2017**
MMRP41	Noise and Vibration	FEIS	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,	D	Contractor	COMPLETE	**4Q2014**
MMRP42	Noise and Vibration	FEIS	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,	D	Contractor	COMPLETE	**4Q2014**
MMRP43	Noise and Vibration	FEIS	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,	D	Contractor	COMPLETE	**4Q2014**
MMRP44	Noise and Vibration	FEIS	NV-5	An 1250-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,	D	Contractor	COMPLETE	**2Q2016**
MMRP45	Noise and Vibration	FEIS	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,	D	Contractor	COMPLETE	**2Q2016**
MMRP46	Noise and Vibration	FEIS	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,	D	Contractor	COMPLETE	**2Q2016**
MMRP47	Noise and Vibration	FEIS	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,	D	Contractor	COMPLETE	**2Q2016**

MMRP48	Noise and Vibration	FEIS	NV-9	A 620-foot long, 8-foot high sound wall shall be installed along the east (S2) side of the track from STA 186+00 to STA 192+20,	D	Contractor	COMPLETE	**2Q2016**
MMRP49	Noise and Vibration	FEIS	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,	D	Contractor	COMPLETE	**1Q2017**
MMRP50	Noise and Vibration	FEIS	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,	D	Contractor	COMPLETE	**1Q2017**
MMRP51	Noise and Vibration	FEIS	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, Actual is 11.33ft. High	D	Contractor	COMPLETE	**2Q2016**
MMRP52	Noise and Vibration	FEIS	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,	D	Contractor	COMPLETE	**2Q2016**
MMRP53	Noise and Vibration	FEIS	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,	D	Contractor	COMPLETE	**2Q2016**
MMRP54	Noise and Vibration	FEIS	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,	D	Contractor	COMPLETE	**2Q2016**
MMRP55	Noise and Vibration	FEIS	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,	D	Contractor	COMPLETE	**2Q2016**
MMRP56	Noise and Vibration	FEIS	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,	D	Contractor	COMPLETE	**2Q2016**
MMRP57	Noise and Vibration	FEIS	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,	D	Contractor	COMPLETE	**2Q2016**
MMRP58	Noise and Vibration	FEIS	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+50 to STA 521+00,	D	Contractor	COMPLETE	**2Q2016**
~~MMRP59~~	~~Noise and Vibration~~	~~FEIS~~	~~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**~~	~~D~~	~~Contractor~~	NOT APPLICABLE Noise studies were updated to reflect current design with ballast and tie tracks between STA 459+00 and STA 487+00 in April 2011. As a result, track level acoustic absorption is no longer required. Instead, noise requirements are met by applying spray acoustic absorption to the trench in this section.	**2Q 2011**

~~MMRP60~~	~~Noise and Vibration~~	~~FEIS~~	~~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.~~	~~P~~	~~VTA~~	NOT APPLICABLE Noise studies were updated to reflect current design with ballast and tie tracks between STA 459+00 and STA 487+00 in April 2011. As a result, track level acoustic absorption is no longer required. Instead, noise requirements are met by applying spray acoustic absorption to the trench in this section.	**2Q 2011**
MMRP61	Noise and Vibration	FEIS	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-19 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	D	Contractor, VTA	COMPLETE	**1Q2017**
MMRP62	Noise and Vibration	FEIS	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)	D	Contractor	COMPLETE	**3Q2016**
MMRP63	Noise and Vibration	FEIS	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)**	D	Contractor	COMPLETE	**2Q2016**
MMRP64	Noise and Vibration	FEIS	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.**	D	Contractor	COMPLETE	**2Q2016**
MMRP65	Noise and Vibration	FEIS	NV-26	Floating Slab Vibration Mitigation – install Hz floating slab from: STA 169+79 to 172+80 (extents of crossover) STA 266+30 to STA 287+00 STA 331+50 to STA 337+40 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)	D	Contractor	COMPLETE	**3Q2016**
MMRP66	Noise and Vibration	FEIS	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	P	VTA	To be completed during the project start-up phase and prior to revenue operations by VTA.	

MMRP67	Noise and Vibration	FEIS	NV-28	Additional Sound Walls. In addition to those included in the table [5.10-6], a 12-ft. high soundwall will be designed at The Crossings at Montague apartments to ensure that FTA noise criteria will be achieved.	D	Contractor	**The Milpitas Station Crossings wall section is scheduled to be constructed by C650 1Q 2018.**	
MMRP68	Noise and Vibration	FEIS	NV-28	Additional Sound Walls. In addition to those included in the table [5.10-6], electrical facilities south of Trade Zone Blvd. may need a sound barrier of no higher than 8 ft. (depending on final design) to achieve FTA noise criteria.	D	Contractor	COMPLETE.	**4Q2017**
MMRP69	Noise and Vibration	FEIS	NV-29	Community Wall at Berryessa Station. 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 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.	D	Contractor	COMPLETE.	**3Q2016**
Visual Quality and Aesthetics								
MMRP70	Visual quality - tree replacement	FEIS	VIS-1	Replacement of Trees at Station Areas. Removed trees will be replaced at a 1:1 ratio within the relevant visual analysis area.	D	VTA	Contractor is documenting all trees removed and these trees will be replaced in public street landscaping areas and station campus landscaping areas at a 1:1 ratio. Where tree replacement is not feasible, a city-required in lieu fee may apply. Final documentation of total trees removed and replaced is ongoing. The following predecessor contracts to C700 removed and planted trees in the City of Fremont: • CI0l - Mission/Warren Overcrossing - Project removed a total of 33 trees while planting 52 trees, for a net increase of 19 trees. • C222 - Kato Road Overcrossing - Project removed a total of 68 trees while planting 74 trees, for a net increase of 6 trees. • C792 - Environmental Mitigation - Project removed a total of 76 trees while planting 82 trees, for a net increase of 6 trees. • C741 Started planting in 3Q 2017 (754 4Q2017) 7 trees were removed from C640 and 12 trees were planted by C700 in 2Q 2017 Totals Removed to date: Fremont: 25 Milpitas: 112 San Jose: 596 (UPC creek work 61) Totals Planted to date: Fremont: 31 (SVBX predecessor contracts) Milpitas: 0 San Jose: 763 (UPC: 204 container trees, 2,343 cutting type trees, UPC creek work 125 cutting type)	

Water Resources, Water Quality, and Floodplains								
MMRP71	Flood-proof structures	SEIR-2	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.	D	Contractor	THIS MITIGATION IS COMPLETE.	3Q2016
Construction: Education and Outreach Plan								
MMRP72	Construction Outreach and Education Plan	FEIS & SEIR-2	CNST-1	Construction Outreach and Education Plan. 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. 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.	D	VTA	**During 4Q 2017 Community Outreach staff continued to provide traffic advisories, construction notices and in-person project updates for activities including the South Milpitas Boulevard/Montague Expressway Improvement Project in Milpitas, Piper Drive Road closures and parking restrictions, utility relocation work and traffic control improvements being constructed at multiple intersections, installation of glass canopy at the Montague Lightrail Station, and reconstruction of sidewalks at Pecten and Watson Courts.** **Continued the effort on developing the EMBARK! Plan (marketing of Phase I opening), including holding coordination meetings with the City of San Jose and internal VTA departments. Continued to respond to and track public inquiries initiated through email and phone calls. Provided tours and site visits to SPUR, Santa Clara County Sheriff Department, and VTA Employee Advisory Committee. Continuously updated the project website with additional and updated information.**	

Construction: Air Quality								
MMRP73	Construction Emissions	SEIR-2 P-MND	CNST-AQ-1 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.	C	Contractor	Dust control, construction emissions and the SWPPP guidelines have been followed and implemented. All SWPPP dust control requirements were maintained throughout **4Q2017, with weekly walks of the South of Dixon portion of the project.**	
MMRP74	Construction Emissions	SEIR-2 P-MND	CNST-AQ-1(1) AQ-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.	C	Contractor	See MMRP 73	
MMRP75	Construction Emissions	SEIR-2 P-MND	CNST-AQ-1(2) AQ-1	2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.	C	Contractor	See MMRP 73	
MMRP76	Construction Emissions	SEIR-2 P-MND	CNST-AQ-1(3) AQ-1	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.	C	Contractor	See MMRP 73	
MMRP77	Construction Emissions	SEIR-2 P-MND	CNST-AQ-1(4) AQ-1	4. All vehicle speeds on unpaved roads shall be limited to 15 mph.	C	Contractor	See MMRP 73 Site wide speed limits were enforced through **4Q 2017** to reduce mud trackout and dust.	
MMRP78	Construction Emissions	SEIR-2 P-MND	CNST-AQ-1(5) AQ-1	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.	C	Contractor	See MMRP 73	
MMRP79	Construction Emissions	SEIR-2 P-MND	CNST-AQ-1(6) AQ-1	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.	C	Contractor	See MMRP73 Idling times and throttle controls remain in place throughout **4Q 2017**	
MMRP80	Construction Emissions	SEIR-2 P-MND	CNST-AQ-1(7) AQ-1	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.	C	Contractor	See MMRP73 Equipment maintenance and mechanic works continues throughout **4Q 2017**	
MMRP81	Construction Emissions	SEIR-2 P-MND	CNST-AQ-1(8) AQ-2	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.	C	Contractor	See MMRP73 Signage remains throughout the site for dust complaints. No complaints received during **4Q 2017**	
MMRP82	Construction Emissions	SEIR-2	CNST-AQ-2	Additional Construction Mitigation Measures. The following measures are recommended for projects with construction emissions above the threshold.	C	Contractor	See MMRP 73	
MMRP83	Construction Emissions	SEIR-2	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.	C	Contractor	See MMRP 73	
MMRP84	Construction Emissions	SEIR-2	CNST-AQ-2(2)	2. All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph.	C	Contractor	See MMRP 73	

MMRP85	Construction Emissions	SEIR-2	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.	C	Contractor	See MMRP 73	
MMRP86	Construction Emissions	SEIR-2	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.	C	Contractor	See MMRP 73	
MMRP87	Construction Emissions	SEIR-2	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.	C	Contractor	See MMRP 73	
MMRP88	Construction Emissions	SEIR-2	CNST-AQ-2(6)	6. All trucks and equipment, including their tires, shall be washed off prior to leaving the site.	C	Contractor	See MMRP 73	
MMRP89	Construction Emissions	SEIR-2	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.	C	Contractor	See MMRP 73/88	
MMRP90	Construction Emissions	SEIR-2	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.	C	Contractor	See MMRP 73/88	
MMRP91	Construction Emissions	SEIR-2	CNST-AQ-2(9)	9. Minimizing the idling time of diesel powered construction equipment to two minutes.	C	Contractor	See MMRP 73	
MMRP92	Construction Emissions	SEIR-2 P-MND	CNST-AQ-2(10) AQ-1	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. For the Upper Penitencia Creek improvements (only), all diesel powered construction equipment shall install diesel particulate filters to achieve a 75% reduction in PM emissions, compared to the state-wide fleet average, on all construction equipment.	C	Contractor	See MMRP 73	
MMRP93	Construction Emissions	SEIR-2	CNST-AQ-2(11)	11. Use low VOC (i.e., ROG) coatings beyond the local requirements (i.e., Regulation 8, Rule 3: Architectural Coatings).	C	Contractor	Sustainability Plan implementation in progress. Item is addressed in Sustainability Matrix Mandatory Item 107. Painting continued at Milpitas, and Berryessa stations **in 4Q 2017**, using low VOC paints.	
MMRP94	Construction Emissions	SEIR-2	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.	C	Contractor	See MMRP73 and MMRP92 Visual confirmation continued during **4Q 2017**	
MMRP95	Construction Emissions	SEIR-2	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.	C	Contractor	See MMRP73 and MMRP92 Visual confirmation continued during **4Q 2017**	

Construction: Biological Resources								
MMRP96	Biological resources - Nesting swallows and migratory birds	FEIS SEIR-2	CNST-BIO-9-1 CNST-BIO-1	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.	C	VTA	See MMRP 22.	
MMRP97	Biological resources - Nesting swallows and migratory birds	FEIS SEIR-2	CNST-BIO-10 CNST-BIO-2	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.	C	VTA for biological monitor and coordination, Contractor for avoidance of buffer zone(s)	See MMRP 22.	
MMRP98	Biological resources - Roosting bats	FEIS SEIR-2	CNST-BIO-11 CNST-BIO-3	Preconstruction Survey for Roosting Bats. A qualified biologist will conduct pre-construction surveys in suitable habitat determine the presence of roosting bats. If no roosting bats are found, then no further mitigation is warranted.	C	VTA	See MMRP 22.	
MMRP99	Biological resources - Roosting bats	FEIS SEIR-2	CNST-BIO-12 CNST-BIO-4	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.	C	Contractor	See MMRP24	
MMRP100	Biological resources - anadromous fish	FEIS SEIR-2	CNST-BIO-13 CNST-BIO-5	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.	D	Contractor	The outfall into East Penitencia Creek was installed.	
MMRP101	Biological resources - anadromous fish	FEIS SEIR-2	CNST-BIO-14 CNST-BIO-6	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.	D	Contractor	COMPLETE	

MMRP102	Biological resources - California red-legged frog	FEIS SEIR-2	CNST-BIO-15 CNST-BIO-7(1) CNST-BIO-7(2) CNST-BIO-7(3) CNST-BIO-7(4)	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. - 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.	C	Contractor	COMPLETE	
MMRP103	Biological resources - California red-legged frog	FEIS SEIR-2 P-MND SEIR-2 P-MND	CNST-BIO-16-1 BIO-1 CNST-BIO-8(1) BIO-1 CNST-BIO-8(2) BIO-2	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 [for purposes of this mitigation measure] 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.	C	VTA for Preconstruction survey, Contractor for all other measures	**The Wildlife Exclusion Fencing was removed by contract C741 during 4Q 2017, as all work close to Upper Penitencia Creek near red legged frog and Tiger salamander habitat is complete and fencing is no longer required.** **THIS MITIGATION IS COMPLETE.**	**4Q2017**
MMRP103		FEIS SEIR-2 P-MND SEIR-2 P-MND SEIR-2	CNST-BIO-16-2CNST-BIO-8(3) CNST-BIO-8(4) BIO-3 CNST-BIO-8(5) BIO-4 CNST-BIO-8(6)	- 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. 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 FWS immediately by telephone. - If suitable red-legged frog or tiger salamander habitat 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 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.	C	VTA for Preconstruction survey, Contractor for all other measures	Continuation of above: **THIS MITIGATION IS COMPLETE.**	**4Q2017**

MMRP104	Biological resources - Western pond turtle	FEIS SEIR-2 P-MND	CNST-BIO-17 CNST-BIO-9 BIO-1	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.	C	VTA for preconstruction survey and turtle relocation, Contractor for fencing	COMPLETE	**4Q 2012**
MMRP105	Biological resources – general	SEIR-2	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.	D	VTA	COMPLETE	**3Q 2011**
MMRP106	Biological resources - Water education	SEIR-2	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.	C	Contractor	WEAP Training takes place **on an as-needed basis** for any new SSH-JV employees, subcontractors, and anyone needing refresher training.	
MMRP107	Biological resources - Special status plant species	FEIS SEIR-2	CNST-BIO-5-1 CNST-BIO-12 CNST-BIO-13	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. 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. 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 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.	D	VTA	COMPLETE	**3Q 2011** **Refer to B-1d and B-1e for monitoring and B-1f for mowing**

MMRP107				- 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.			COMPLETE	**3Q 2011** **Refer to B-1d and B-1e for monitoring and B-1f for mowing**
MMRP108	Biological resources - Special status plant species	SEIR-2	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.	C	VTA	COMPLETE	**4Q 2012**
MMRP109	Biological resources – riparian and/or wetland habitat	SEIR-2	CNST-BIO-15	A riparian corridor buffer zone will be provided along the banks of creeks.	D	Contractor	COMPLETE	**3Q 2011**
MMRP110	Biological resources - wetlands and waters of the U.S.	SEIR-2	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.	C	Contractor	COMPLETE	**3Q2016**
MMRP111	Biological resources - In-channel construction	SEIR-2	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.	C	Contractor	**Work in the Berryessa Creek channel under the C640 contract was on hold during 3Q 2017. This work will resume for the next Phase in May of 2018.** **The C650 finished Toroges creek work early 4Q 2017. C700 also finished the outfall at the East Penitencia Creek Siphon.** **A new C700 outfall may be needed based on a field design change at Wrigley Creek requiring rip rap RSP. An RFI will be processed for the outfall, and it will be placed pending regulatory approval.**	
MMRP112	Biological resources – California red-legged frog	SEIR-2 P-MND	CNST-BIO-18 BIO-1	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.	C	VTA	**All work close to these creeks near red legged frog habitat is complete.** **THIS MITIGATION IS COMPLETE.**	**4Q2017**
MMRP113	Biological resources – California red-legged frog	SEIR-2	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.	C	VTA for frog relocation, Contractor for fencing	**All work close to these creeks near red legged frog habitat is complete.** **THIS MITIGATION IS COMPLETE.**	**4Q2017**

MMRP114	Biological resources – southwestern pond turtle	SEIR-2 P-MND	CNST-BIO-20 BIO-1	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.	C	VTA	**COMPLETE - See MMRP17**	**2Q2011**
MMRP115	Biological resources – southwestern pond turtle	SEIR-2	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.	C	VTA for preconstruction survey and turtle relocation, Contractor for fencing	**COMPLETE - See MMRP17**	**2Q2011**
MMRP116	Biological Resources - Burrowing Owls	FEIS SEIR-2	CNST-BIO-1-1 CNST-BIO-22	Burrowing Owl Survey. 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.	C	VTA	COMPLETE	**3Q 2012**
MMRP117	Biological Resources - Burrowing Owls	FEIS SEIR-2	CNST-BIO-2-1 CNST-BIO-23	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/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).	C	Contractor	COMPLETE	**3Q 2012**
MMRP118	Biological Resources - Burrowing Owls	FEIS SEIR-2	CNST-BIO-3-1 CNST-BIO-24	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.	C	VTA	COMPLETE	**3Q 2012**
MMRP119	Biological Resources - Burrowing Owls	FEIS SEIR-2	CNST-BIO-4 CNST-BIO-25	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.	C	VTA	COMPLETE	**3Q 2012**
MMRP120	Biological resources - Nesting Raptors	FEIS SEIR-2	CNST-BIO-6 CNST-BIO-26(a)	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.	C	Contractor	See MMRP22	
MMRP121	Biological resources - Nesting Raptors	FEIS SEIR-2	CNST-BIO-7 CNST-BIO-26(b)	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.	C	VTA	COMPLETE	**3Q 2012**
MMRP122	Biological resources - Nesting Raptors	FEIS SEIR-2	CNST-BIO-8 CNST-BIO-26(b)	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.	C	VTA for buffer establishment, Contractor for fencing and avoiding area	COMPLETE	**3Q 2012**

MMRP123	Biological resources –nesting swallows	SEIR-2	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).	C	VTA	See MMRP22	
MMRP124	Biological resources –nesting swallows	SEIR-2	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.	C	Contractor	See MMRP22	
MMRP125	Biological resources –nesting migratory birds	SEIR-2	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.	C	VTA	**No surveys were needed during 4Q 2017**	
MMRP126	Biological resources –nesting migratory birds and non-game mammals	SEIR-2	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.	C	Contractor	See MMRP22, MMRP23	
Construction: Greenhouse Gas Emissions								
MMRP127	Greenhouse Gas Construction Emissions	SEIR-2	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.	C	Contractor	Contractor's Construction Waste Management (TS 01 74 21) and Sustainability Plans (TS 01 35 74) are being implemented by the contractor, and include this requirement. Waste management is ongoing through **4Q 2017** with separate waste bins available for metal, concrete, and drywall.	
Construction: Hazardous Materials								
MMRP128	Hazardous Waste	FEIS SEIR-2	CNST-HAZ-1 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. VTA shall ensure that mitigation measures identified in the Contaminant Management Plan are implemented during the construction of Phase 1.	C	Contractor	Implementation of the Contractor's Contaminant Management and Disposal Plan approved by VTA on 6/28/2012 is being monitored by VTA to ensure compliance with this requirement. The CMDP and a variance for modifications to contaminated soil handling procedures were approved. The Contaminant Management Plan is still being followed site wide.	
MMRP129	Hazardous Waste	FEIS SEIR-2	CNST-HAZ-2 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 VTA shall ensure that mitigation measures included/identified 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 of Phase 1 at the Great Mall. These documents include measures 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.	C	Contractor	COMPLETE	**3Q 2014**
MMRP130	Hazardous Waste	FEIS SEIR-2	CNST-HAZ-3 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 of Phase 1.	C	Contractor	COMPLETE	**3Q 2012**
Construction: Noise and Vibration								
MMRP131	Construction Noise/Vibration	FEIS SEIR-2	CNST-NV-1 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.	D	VTA	COMPLETE	**1Q 2012**
MMRP132	Noise and vibration – public notification program	SEIR-2	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.	C	VTA	See MMRP 72.	

MMRP133	Construction Noise/Vibration	FEIS SEIR-2 P-MND	CNST-NV-2 CNST-NOISE-3 N-1	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.	C	Contractor	See MMRP151	
MMRP134	Construction Noise/Vibration	FEIS SEIR-2 P-MND	CNST-NV-2 CNST-NOISE-4 N-1	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. SEE FEIS TABLE 6-7 FOR LOCATONS OF TEMPORARY NOISE BARRIER/NOISE CONTROL CURTAINS AND RESTRICTED WORK HOURS.	C	Contractor	See MMRP151	
MMRP135	Construction Noise/Vibration	FEIS SEIR-2 P-MND	CNST-NV-4, CNST-NOISE-5, NV-1	When feasible, the following equipment will be used: electric powered equipment instead of diesel-powered equipment, hydraulic tools instead of pneumatic impact tools and electric driven saws instead of air- or gasoline driven saws.	C	Contractor	See MMRP151, Electric equipment was used at most locations Portable hand held electric generators are used as practicable. Ongoing through **4Q 2017**	
MMRP136	Construction Noise/Vibration	FEIS SEIR-2	CNST-NV-5 CNST-NOISE-6	A resonant-free vibratory pile driver or augering drill-rig will be used for setting piles in lieu of impact pile drivers where feasible.	C	Contractor	COMPLETE	**2Q2016**
MMRP137	Construction Noise/Vibration	FEIS SEIR-2 P-MND	CNST-NV-14 CNST-NOISE-7 N-1	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.	C	Contractor	See MMRP151	
MMRP138	Noise – nighttime construction	SEIR-2	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.	C	Contractor	See MMRP151	
MMRP139	Construction Noise/Vibration	FEIS SEIR-2 P-MND	CNST-NV-6, CNST-NOISE-9, NV-1	Turn off idling equipment, whenever possible.	C	Contractor	See MMRP151, See MMRP79	
MMRP140	Construction Noise/Vibration	FEIS SEIR-2	CNST-NV-7 CNST-NOISE-10	Line or cover hoppers, conveyor transfer points, storage bins, and chutes with sound-deadening material.	C	Contractor	See MMRP151, VTA and SSH have determined that truck bed lining is not anticipated to be required to meet noise thresholds on this project.	
MMRP141	Construction Noise/Vibration	FEIS SEIR-2	CNST-NV-11 CNST-NOISE-10	Line haul truck beds with rubber or sand to reduce noise, if needed and requested by the Resident Engineer.	C	Contractor	See MMRP151, VTA and SSH have determined that truck bed lining is not anticipated to be required to meet noise thresholds on this project.	
MMRP142	Construction Noise/Vibration	FEIS SEIR-2 P-MND	CNST-NV-8, CNST-NOISE-11, NV-1	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.	C	Contractor	See MMRP151	
MMRP143	Construction Noise/Vibration	FEIS SEIR-2 P-MND	CNST-NV-9, CNST-NOISE-12, NV-	Use back-up alarms that are less intrusive in noise-sensitive areas.	C	Contractor	See MMRP151	

MMRP144	Construction Noise/Vibration	FEIS SEIR-2 P-MND	CNST-NV-10, CNST-NOISE-12, NV-1	At nighttime and weekends, use strobe warning lights and/or back-up observers during any back-up operations, where permitted by the local jurisdiction.	C	Contractor	See MMRP151	
MMRP145	Construction Noise/Vibration	FEIS SEIR-2 P-MND	CNST-NV-12, CNST-NOISE-13, NV-1	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.	C	Contractor	See MMRP151	
MMRP146	Construction Noise/Vibration	FEIS SEIR-2 P-MND	CNST-NV-13, CNST-NOISE-14, NV-1	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.	C	Contractor	See MMRP151	
MMRP147	Construction Noise/Vibration	FEIS SEIR-2	CNST-NV-15 CNST-NOISE-15	The contractor is required to perform preconstruction ambient noise measurements at or near representative aboveground 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 along the alignment. These measurements will be performed continuously over a minimum of 10 days at the representative above locations.	C	Contractor	COMPLETE	**2Q 2013**
MMRP148	Construction Noise/Vibration	FEIS SEIR-2	CNST-NV-16 CNST-NOISE-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.	C	Contractor	See MMRP151	
MMRP149	Construction Noise/Vibration	FEIS SEIR-2	CNST-NV-17 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 VTA 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.	C	Contractor	See MMRP151	
MMRP150	Construction Noise/Vibration	FEIS SEIR-2	CNST-NV-18 CNST-NOISE-18	The contractor is required to perform preconstruction ambient noise measurements over a minimum of 10 days at the construction staging areas that include the east and west tunnel portal locations (Mabury Road/U.S. 101 construction staging area), station areas, and at the gap breaker station sites. This will serve to document the noise environment just prior to start of construction.	C	Contractor	COMPLETE	**2Q 2013**
MMRP151	Construction Noise/Vibration	FEIS SEIR-2	CNST-NV-19 CNST-NOISE-19 CNST-NOISE-20 CNST-NOISE-21	The contractor is required to submit to the VTA 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 VTA. 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 VTA will ensure that contractually required corrective measures are implemented.	C	Contractor	No known noise exceedances occurred in **4Q2017.** C640 will had no exceedances during pile driving in **4Q2017.**	

MMRP152	Construction Noise/Vibration	FEIS SEIR-2	CNST-NV-20 CNST-NOISE-19	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.	D	Contractor	See MMRP151	
MMRP153	Construction Noise/Vibration	FEIS SEIR-2	CNST-NV-21 CNST-NOISE-20&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.	C	Contractor	See MMRP151	
MMRP154	Construction Noise/Vibration	FEIS SEIR-2	CNST-NV-22 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 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 69a Flat-bed semi-trucks 81 Compressed-air construction tools 81 Air compressors 70a Welding equipment 73 a – Assumed acoustically treated	C	Contractor	See MMRP151	
MMRP155		FEIS	CNST-NV-22-2	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 VTA.	C	Contractor	See MMRP151	
MMRP156	Vibration - piling	SEIR-2	CNST-NOISE-23	Impact pile driving will be avoided near vibration-sensitive areas where possible. Drilled piles, or 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.	C	Contractor	COMPLETE	**2Q2016**
MMRP157	Construction Noise/Vibration	FEIS SEIR-2	CNST-NV-23 CNST-NOISE-24	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.	C	Contractor	COMPLETE	**2Q2016**
Construction: Visual Quality and Aesthetics								
MMRP158	Visual quality and aesthetics	SEIR-2	CNST-VIS-1	Visual screening will be erected at construction sites, as appropriate.	C	Contractor	THIS MITIGATION IS COMPLETE.	**2Q 2017**

Transportation and TransitNote:1. All transportation and transit mitigation measures from the FEIR have been replaced with mitigation measures in the SEIR.								
~~MMRP159~~	~~Milpitas Station - Traffic~~	~~FEIS & SEIR-2~~	~~TR-1~~	**~~Great Mall Parkway and Montague Expressway- 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.~~**	~~D~~	~~VTA~~	Based on the revised 2013 Traffic Impact Analysis, the project no longer adversely impacts this intersection; therefore, no mitigation is warranted. MITIGATION N/A	
MMRP160	Milpitas Station - Traffic	FEIS & SEIR-2	TR-2	**Milpitas Boulevard and Montague Expressway- 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.**	D	VTA	Construction was ongoing on the C640 Montague Reconstruction/South Milpitas Boulevard Extension **in 4Q2017**. There is still only westbound turning from SMB onto Montague Expy. When work on the lanes is complete, it will be photo documented for this mitigation measure.	
~~MMRP161~~	~~Milpitas Station - Traffic~~	~~FEIS & SEIR-2~~	~~TR-3~~	**~~Park Victoria Drive and Yosemite Drive- 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. 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.~~**	~~D~~	~~VTA~~	Based on the revised 2013 Traffic Impact Analysis, the project no longer adversely impacts this intersection; therefore, no mitigation is warranted. MITIGATION N/A	
~~MMRP162~~	~~Milpitas Station - Traffic~~	~~FEIS & SEIR-2~~	~~TR-4~~	**~~Old Oakland/Main Street and Montague Expressway- There are no further feasible improvements beyond the planned Montague widening assumed under No Action conditions (i.e. those identified under the 2030 No Project 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.~~**	~~D~~	~~VTA~~	Based on the revised 2013 Traffic Impact Analysis, the project no longer adversely impacts this intersection; therefore, no mitigation is warranted. MITIGATION N/A	
MMRP163	Milpitas Station - Traffic	FEIS & SEIR-3	TR-5	**Trade Zone Boulevard and Montague Expressway- There are no further feasible improvements beyond the planned Montague widening assumed under No Action conditions (i.e. those identified under the 2030 No Project 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.**	D	VTA	COMPLETE	**4Q 2015**
~~MMRP164~~	~~Berryessa Station - Traffic~~	~~FEIS & SEIR-2~~	~~TR-6~~	**~~Flickinger Avenue and Berryessa Road- There are no other feasible improvements that can be made at this intersection beyond those described for 2030 No Action conditions (i.e. those identified under the 2030 No Project 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.~~**	~~D~~	~~VTA~~	Based on the revised 2013 Traffic Impact Analysis, the project no longer adversely impacts this intersection; therefore, no mitigation is warranted. MITIGATION N/A	
MMRP165	Berryessa Station - Traffic	FEIS & SEIR-2	TR-7	**Lundy Avenue and Berryessa Road- 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.**	D	VTA	COMPLETE	**4Q 2013**

MMRP166	Berryessa Station - Traffic	FEIS & SEIR-2	TR-8	**King Road and Mabury Road- 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.**	D	VTA	COMPLETE	**4Q 2013**
~~MMRP167~~	~~Berryessa Station - Traffic~~	~~FEIS & SEIR-2~~	~~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'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.**~~	~~D~~	~~VTA~~	~~Off-site traffic mitigation design to be included in C720 Station Campus Design specifications and plan sheets.~~	
MMRP168	Berryessa Station- Traffic	FEIS & SEIR-2	TR-10	**King Road and McKee Road- 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.**	D	VTA	COMPLETE	**2Q 2017**
MMRP169	Berryessa Station - Traffic	FEIS & SEIR-2	TR-11	~~**Capitol Avenue and McKee Road- 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.**~~	~~D~~	~~VTA~~	Based on the revised 2013 Traffic Impact Analysis, the project no longer adversely impacts this intersection; therefore, no mitigation is warranted. MITIGATION N/A	
~~MMRP170~~	~~Berryessa Station - Traffic~~	~~FEIS~~	~~TR-12~~	~~**McLaughlin Avenue and Story Road- 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 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.**~~	~~D~~	~~VTA~~	Based on the revised 2013 Traffic Impact Analysis, the project no longer adversely impacts this intersection; therefore, no mitigation is warranted. MITIGATION N/A	
~~MMRP171~~	~~Berryessa Station - Traffic~~	~~FEIS & SEIR-2~~	~~TR-13~~	~~**King Road and Story Road- 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.**~~	~~D~~	~~VTA~~	Based on the revised 2013 Traffic Impact Analysis, the project no longer adversely impacts this intersection; therefore, no mitigation is warranted. MITIGATION N/A	
~~MMRP172~~	~~Berryessa Station - Traffic~~	~~FEIS & SEIR-2~~	~~TR-14~~	~~**Capitol Expressway and Capitol Avenue- 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**~~	~~D~~	~~VTA~~	Based on the revised 2013 Traffic Impact Analysis, the project no longer adversely impacts this intersection; therefore, no mitigation is warranted. MITIGATION N/A	

*Note: Responsibility assignments are preliminary based on the C700 contract and are to be customized for each contract.								
MMRP173	Groundborne noise along the tunnel alignment	SEIR-1	NV-6	For residences and other sensitive uses impacted by groundborne noise along the tunnel alignment, mitigation includes approximately 5,500 linear feet of highly resilient direct fixation rail fasteners and 10,500 linear feet of rail suspension fasteners (RSF) to reduce groundborne noise impacts to meet FTA criteria.			N/A for SVBX, Applies to BSV / Tunnel.	
MMRP174	Noise – noise measurements	SEIR-1	C-53	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.			N/A for SVBX, Applies to BSV / Tunnel.	
~~MMRP175~~	~~Noise at Dixon Landing Road~~	~~SEIR-1~~	~~NV-3~~	~~For residences impacted by noise by the at grade alignment at Dixon Landing Road, approximately 720 linear feet of 7- to 8-foot-high sound walls and noise insulation for the second level and higher floors will be required to reduce noise impacts to meet FTA criteria.~~			N/A - the Dixon Landing Road BART in Retained Cut Option was selected.	
~~MMRP176+ 219:225218: 225217:225 216:225~~	~~Vibration at Dixon Landing Road~~	~~SEIR-1~~	~~NV-9~~	~~For residences impacted by vibration by the at grade alignment at Dixon Landing Road, approximately 560 feet of floating slab track with a design frequency of 8 Hz and 2,230 linear feet of tire-derived aggregate, or equivalent measures, will by required to reduce vibration impacts to meet FTA criteria.~~			N/A - the Dixon Landing Road BART in Retained Cut Option was selected.	