



BSV Phase II - Environmental Commitments Record Legend

LEGEND	Blue Text	Indicates updates since last quarterly report	
	-	Indicates N/A or no update is applicable to this quarterly report	
	"gray row"	Indicates mitigation measure complete or N/A	
	Acronyms		
	AEOC	Arena Entertainment and Operations Committee	
	ARTP	Archaeological Resources Treatment Plan	
	BAAQMD	Bay Area Air Quality Management District	
	Caltrans	California Department of Transportation	
	CEOP	Construction Education and Outreach Plan	
	CHSRA	California High Speed Rail Authority	
	CMP	Containment Management Plan	
	COMP	Construction Outreach Management Program	
	CP	Consulting Parties	
	CTMP	Construction Transportation Management Plan	
	CWG	Community Working Groups	
	ESCP	Emergency Services Coordination	
	FHA	Federal Highway Administration	
	FRA	Federal Railroad Administration	
	FST	Floating Slab Track	
	FTA	Federal Transit Administration	
	ISA	Initial Site Assessment	
	IST	Isolated Slab Track	
	NA	Native American	
	PA	Programmatic Agreement	
	RAPs	Remedial Action Plans	
	ROD	Record of Decision	
	RWQCB	Regional Water Quality Control Board	
	SHPO	State Historic Preservation Officer	
	SJRRC	San Joaquin Regional Rail Commission	
	SJWC	San Jose Water Company	
	TCP	Traffic Control Plans	
	VTA	Santa Clara Valley Transportation Authority	
	Timeframe for Implementation letter codes:		
C	Construction		
D	Design		
P	Post Construction		
Responsible Party codes: VTA and/or C = Contractor			
Compliance Status letter codes:			
IC	In Compliance		
OU	Out of Compliance		
CC	Complete and Closed		
N/A	Non Applicable		

Source Document Abbreviations		
Santa Clara Valley Transportation Authority, Board of Directors		
BOD ATT-A	April 5, 2018, Board Memorandum. Attachment A-Recommended Project Description	
Supplemental Environmental Impact Statement (SEIS), Subsequent Environmental Impact Report (SEIR)		
Vol-1	Volume 1	
CH-1	Chapter 1	Executive Summary
CH-2	Chapter 2	Alternatives
CH-3	Chapter 3	NEPA and CEQA Transportation Operation Analysis
CH-4	Chapter 4	NEPA Alternatives Analysis of Operations
CH-5	Chapter 5	NEPA Alternatives Analysis of Construction
CH-6	Chapter 6	CEQA Alternatives Analysis of Construction and Operation
CH-7	Chapter 7	Other NEPA and CEQA Considerations
CH-8	Chapter 8	Section 4(f) of the Department of Transportation Act of 1966
CH-9	Chapter 9	Financial Considerations
CH-10	Chapter 10	Agency and Community Participation
Vol-2	Volume 2. Responses to Comments	
ROD	Federal Transit Administration Record of Decision	
VTA Sustainability Practices		
VTA-Green	VTA Green Building Policy 400.004	
VTA-Sust	VTA Sustainable Landscaping Policy CMA-CL-PL-7120	

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Transportation / Develop and Implement a Construction Education and Outreach Plan	1	-MMRP-TRA-CNST-A-01	Vol-1, ROD	<p>Develop and Implement a Construction Education and Outreach Plan: VTA will develop a Construction Education and Outreach Plan (CEOP) in coordination with the Cities of San Jose and Santa Clara to foster communication between VTA, various municipalities, and the public during construction. VTA will develop the CEOP after the environmental process is complete and implement it prior to construction. The CEOP will ensure that VTA coordinates construction activities with existing business operations and other development projects to minimize disruption and delays. The CEOP will also establish a process that will address the concerns of businesses and their customers, property owners, residents, and commuters. The CEOP will be incorporated into the plans and specifications of all contracts through which the BART Extension will be implemented.</p> <p>Critical components of the CEOP will include, but are not limited to, the following requirements (MMRP-TRA-CNST-A-02 through A-17).</p>	D	C		VTA	IC	<p>This is a summary mitigation measure. For individual components of the CEOP please refer to MMRP-TRA-CNST-A-02 through A-16, below.</p> <p>The CEOP was prepared in two parts, as follows: Part A: Planning Phase Part B: Construction</p> <p>VTA finalized the drafts A and B of the CEOP during the first quarter of 2021.</p>
Transportation / Develop and Implement a Construction Education and Outreach Plan	2	-MMRP-TRA-CNST-A-02	Vol-1, ROD	<p>Develop and Implement a Construction Education and Outreach Plan: Establish field office(s) accessible to the public with dedicated community outreach staff and defined hours.</p>	D	C		VTA	IC	-
Transportation / Develop and Implement a Construction Education and Outreach Plan	3	-MMRP-TRA-CNS+9:27T-A-03	Vol-1, ROD	<p>Develop and Implement a Construction Education and Outreach Plan: Provide and maintain a 24-hour/7-day a week project hotline for emergencies.</p>	D	C		VTA	IC	<p>VTA maintained the public outreach phone number and email for project inquiries (English, Spanish, Tagalog, Chinese, Vietnamese, Korean & Portuguese: 408-321-2300. TTY: 408-321-2330 and vtbart@vtabsv.com).</p>

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Transportation / Develop and Implement a Construction Education and Outreach Plan	4	-MMRP-TRA-CNST-A-04	Vol-1, ROD	Develop and Implement a Construction Education and Outreach Plan: Conduct preconstruction operational surveys of businesses located adjacent to construction areas to ascertain hours of operation, access, deliveries, customer base, special circumstances, and key contacts.	D	C		VTA	CC	MITIGATION COMPLETE - See Q4 2020
Transportation / Develop and Implement a Construction Education and Outreach Plan	5	-MMRP-TRA-CNST-A-05	Vol-1, ROD	Develop and Implement a Construction Education and Outreach Plan: Coordinate with cities to obtain information about upcoming adjacent construction projects to minimize disruptions and delays.	D	C		VTA	IC	In Q1 and Q2 2021, VTA attended the monthly meetings with the City of San Jose's Arena Entertainment and Operations Committee (AEOC) and Office of Economic Development.
Transportation / Develop and Implement a Construction Education and Outreach Plan	6	-MMRP-TRA-CNST-A-06	Vol-1, ROD	Develop and Implement a Construction Education and Outreach Plan: Inform and engage partner agencies, stakeholders, including VTA's BART Silicon Valley Phase II Community Working Groups, business organizations, business owners, tenants, the media, and the public on a regular and frequent basis.	D	C		VTA	IC	In Q1 2021, VTA held three CWG meetings on 2/9, 2/10, 2/11 and three CWG orientation meetings. VTA also held 20 other meetings with various key stakeholder groups.
Transportation / Develop and Implement a Construction Education and Outreach Plan	7	-MMRP-TRA-CNST-A-07	Vol-1, ROD	Develop and Implement a Construction Education and Outreach Plan: Conduct public workshops, meetings, or webinars for community members. Hold regular meetings with the surrounding businesses and residents throughout the course of construction.	D	C		VTA	IC	For Q1 and Q2 2021, VTA did not attend or present at any workshops, meetings, or webinars.
Transportation / Develop and Implement a Construction Education and Outreach Plan	8	-MMRP-TRA-CNST-A-08	Vol-1, ROD	Develop and Implement a Construction Education and Outreach Plan: Distribute and post project information and advanced construction notification via the project website, social and traditional media, signage, face-to-face visits, flyers, mailers, emails, and other communication methods as appropriate.	D	C		VTA	IC	For Q1 2021: <ul style="list-style-type: none"> • no construction notices were issued. • 4 Facebook and 4 Twitter posts were shared. • VTA also provided one updated fact sheet and one new brochure.

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Transportation / Develop and Implement a Construction Education and Outreach Plan	9	-MMRP-TRA-CNST-A-09	Vol-1, ROD	Develop and Implement a Construction Education and Outreach Plan: Develop a project signage program identifying project corridor, station areas, construction timeline, and funding.	D	C		VTA	IC	In Q2 2021, VTA created signage specifications for the Contract Package RFPs including language requiring project identification, project corridor, and field office signage.
Transportation / Develop and Implement a Construction Education and Outreach Plan	10	-MMRP-TRA-CNST-A-10	Vol-1, ROD	Develop and Implement a Construction Education and Outreach Plan: Display maps and construction schedule information in project field office(s) and around the construction area.	D	C		VTA	IC	-
Transportation / Develop and Implement a Construction Education and Outreach Plan	11	-MMRP-TRA-CNST-A-11	Vol-1, ROD	Develop and Implement a Construction Education and Outreach Plan: Increase visibility of alternative parking and access via signage, website postings, and other communication methods.	D	C		VTA	IC	-
Transportation / Develop and Implement a Construction Education and Outreach Plan	12	-MMRP-TRA-CNST-A-12	Vol-1, ROD	Develop and Implement a Construction Education and Outreach Plan: Maintain media relations (i.e., news releases, news articles, and interviews).	D	C		VTA	IC	In Q1 2021, the media covered the project 7 times. VTA wrote 1 blog and 1 newsletter. In Q2 2021, the media covered the project 10 times. VTA wrote 1 blog.
Transportation / Develop and Implement a Construction Education and Outreach Plan	13	-MMRP-TRA-CNST-A-13	Vol-1, ROD	Develop and Implement a Construction Education and Outreach Plan: Designate community outreach personnel available on site for the duration of the construction project.	D	C		VTA	IC	-

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Transportation / Develop and Implement a Construction Education and Outreach Plan	14	-MMRP-TRA-CNST-A-14	Vol-1, ROD	Develop and Implement a Construction Education and Outreach Plan: Work with property owners and business owners in the station areas to promote access to businesses during construction, including enhanced signage.	D	C		VTA	IC	-
Transportation / Develop and Implement a Construction Education and Outreach Plan	15	-MMRP-TRA-CNST-A-15	Vol-1, ROD	Develop and Implement a Construction Education and Outreach Plan: Provide marketing assistance, technical business support, and cross-promotional efforts to businesses within the area impacted by construction to encourage customers to shop at businesses during construction.	D	C		VTA	IC	In Q1 2021, VTA did not hold any Small Business meetings due to project stage. In Q2 2021, VTA held the Small Business Task Force meeting #3 on 6/29.
Transportation / Develop and Implement a Construction Education and Outreach Plan	16	-MMRP-TRA-CNST-A-16	Vol-1, ROD	Develop and Implement a Construction Education and Outreach Plan: Establish outreach to stakeholders to provide advanced notice of scheduled utility outages.	D	C		VTA	IC	-
Transportation / Develop and Implement a Construction Education and Outreach Plan	17	-MMRP-TRA-CNST-A-17	Vol-1, ROD	Develop and Implement a Construction Education and Outreach Plan: Throughout development and implementation, the education and outreach activities will be comprehensive, seeking widespread involvement; proactive, with efforts geared toward obtaining input, as well as disseminating information; responsive to various needs, including multiple languages and alternative formats; and timely, accurate, and results-oriented.	D	C		VTA	IC	This is a summary mitigation measure. For individual components of the Construction Education and Outreach Plan (CEOP) please refer to MMRP-TRA-CNST-A-02 through A-16, above.

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Transportation/ Develop and Implement a Construction Transportation Management Plan	18	-MMRP- TRA- CNST-	B-01	Vol-1, ROD	D	C		VTA	IC	<p>In Q1 and Q2 2021, VTA prepared the Draft CTMP in coordination with the Cities of San Jose and Santa Clara. Six meetings with the cities were held on the development of the Draft CTMP.</p> <p>VTA also engaged with the Cities of San Jose and Santa Clara to develop Cooperative Agreement #1, which includes requirements for work on City facilities, affirms construction impact mitigation through VTA's Construction Outreach Management Program, and outlines reimbursement of City services supporting pre-RFP activities.</p>

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Transportation/ Develop and Implement a Construction Transportation Management Plan	19	-MMRP- TRA- CNST-	B-02	Vol-1, ROD	Develop and Implement a Construction Transportation Management Plan: After the CTMP has been approved, individual Traffic Control Plans (TCPs) will be developed for specific design elements at each of the ten major project elements and throughout the 8-year duration of construction. The TCPs will address all modes including automobiles, trucks, and construction vehicles, bicyclists, pedestrians, and public transportation such as buses and light rail. The TCPs will be prepared by the contractor and approved by VTA and the applicable city prior to construction of the specific design element.	D	C		VTA	IC	-
Transportation/ Develop and Implement a Construction Transportation Management Plan	20	-MMRP- TRA- CNST-	B-03	Vol-1, ROD	Develop and Implement a Construction Transportation Management Plan: The TCPs will include site-specific requirements such as the following. <ul style="list-style-type: none"> Alternative access routes where practicable and wayfinding signage for all detours affecting roadway users, including vehicular traffic, trucks and construction vehicles, bicyclists, and pedestrians. Early signage of potential construction delays for all roadway users to choose alternate routes. Minimum requirements for pedestrians and bicyclists to provide safe travel corridors within and through construction areas or provide detour routes. Coordination between VTA and transit providers as necessary prior to construction to ensure that any necessary re-routing of bus routes and temporary relocation of bus stops during construction is done to minimize impacts on bus riders. Early signage of potential transit delays for transit riders to plan trips accordingly. Notification of the Cities of San Jose and Santa Clara, business owners, residents, and key stakeholders regarding lane and road closures that would affect parking, including both off-street and on-street parking. Maps of all publicly available off-street and on-street parking that will be removed during construction. Schedule of removal of each parking area. Requirement that construction workers must park in construction staging areas or other designated areas. In addition, in coordination with city partners, VTA will work with its contractors and the cities to restore parking as construction nears completion to the extent feasible. 	D	C		VTA	IC	-

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Transportation / Implement an Emergency Services Coordination Plan (ESCP)	21	-MMRP-TRA-CNST-C	-	Vol-1, ROD	<p>Prepare and Implement an Emergency Services Coordination Plan: After the environmental process is complete and prior to beginning any construction activity, VTA will work with the Cities of San Jose and Santa Clara to develop Master Cooperative Agreements that will direct all coordination and partnering efforts between VTA and the cities prior to and during construction of the BART Extension. One element of the Master Cooperative Agreements with the cities will be the COMP. One of the three parts of the COMP is the Emergency Services Coordination (ESCP).</p> <p>As local emergency service routes and response times could be affected by construction activities, VTA will coordinate with local fire and police services to develop the ESCP to minimize this impact. The ESCP will be incorporated into the plans and specifications of all contracts through which the BART Extension will be implemented.</p> <p>Critical components of coordination are as follows.</p> <ul style="list-style-type: none"> • VTA will inform the local fire and police departments of the construction schedule, and potential lane and road closures. • VTA will work with emergency providers to ensure emergency access to residents and businesses and to maintain the cities' emergency service response times. • VTA will work with the local fire and police departments on the detour routes. • VTA will provide road signage for detours and provide manual traffic control on detour routes as necessary. 	D	C		VTA	IC	In Q1 and Q2 2021, VTA in coordination with City of San Jose and City of Santa Clara drafted the ESCP.
Transportation / Provide Temporary Replacement Parking at Diridon Station NEPA ONLY MITIGATION MEASURE	22	-MMRP-TRA-CNST-D	-	Vol-1, ROD	<p>Provide Temporary Replacement Parking at Diridon (Diridon Station Only, NEPA ONLY MITIGATION MEASURE): VTA will provide 450 temporary replacement off-street parking spaces during construction to mitigate for parking impacts caused by the BART Extension construction. The temporary replacement parking will be provided prior to the removal of existing parking spaces.</p>		C		VTA	IC	Continued negotiating agreement with third-party agency for lease of property to provide replacement parking. Expected timeframe of completion is September 2022.

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Transportation/ Implement Intersection Improvements at Coleman Avenue and Brokaw Road (for TOJD)	23	-MMRP-TRA-A	-	Vol-1, ROD	Implement Intersection Improvements at Coleman Avenue and Brokaw Road (for TOJD): Change the signal control for Brokaw Road (the east and west legs of this intersection) from Protected Left-Turn phasing to Split Phase. Add a shared through/left-turn lane to the east and west approaches within the existing right-of-way. Change the existing shared through/right-turn lanes to right-turn only lanes on the east and west approaches, and change the eastbound right-turn coding from Include to Overlap, indicating that many eastbound right turns would be able to turn right on red.	C		VTA	IC	-
Transportation/ Implement Intersection Improvements at Lafayette Street and Lewis Street (for TOJD)	24	-MMRP-TRA-B	-	Vol-1, ROD	Implement Intersection Improvements at Lafayette Street and Lewis Street (for TOJD): Shift the westbound approach lanes on Lewis Street to the south to allow for the current through/right-turn lane to operate as a separate right-turn lane and a separate through lane. A shift of approximately 2 feet would increase the current through/right-turn lane width to 20 feet, which would allow adequate room for right-turning vehicles to proceed past vehicles traveling straight through the intersection and make the right turn onto northbound Lafayette Street. The westbound approach and receiving lanes would be slightly offset as a result, which can be addressed with dashed pavement markings across the intersection.	C	P	VTA	IC	-
Transportation/ Implement Intersection Improvements at the Intersection of Coleman Avenue and I880 Southbound Ramps (for TOJD)	25	-MMRP-TRA-C	-	Vol-1, ROD	Implement Intersection Improvements at the Intersection of Coleman Avenue and I880 Southbound Ramps (for TOJD): Convert the second (center) left-turn lane on the I-880 off-ramp (the intersection's westbound approach) to a shared left/right-turn lane. Replace the lane control signs and the pavement markings on the off-ramp to reflect the new lane usage.	C	P	VTA	IC	-

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Air Quality/ Implement Dust Control Measures	26	-MMRP-AQ-CNST-A-01	Vol-1, ROD	Implement Dust Control Measures: VTA will require construction contractors to implement basic construction mitigation measures and additional construction mitigation measures recommended by Bay Area Air Quality Management District (BAAQMD) to reduce fugitive dust emissions. Emission reduction measures will include the following applicable measures (<i>MMRP-AQ-CNST-A-02 through A-15, below</i>) or similar performing measures (additional measures may be identified by BAAQMD or the contractor, as appropriate).	C		VTA /C	IC	In Q1 and Q2 2021, VTA began drafting contract specifications that include this mitigation measure for all four Contract Packages (CP-1 Systems, CP-2 Tunnel and Trackwork, CP-3 Newhall Yard/Santa Clara Station and CP-4 Stations).	
Air Quality/ Implement Dust Control Measures	27	-MMRP-AQ-CNST-A-02	Vol-1, ROD	Implement Dust Control Measures: The contractor will water all exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, unpaved access roads) two times per day or as needed to control dust. In times of drought, an effective combination of dust controls may be used in lieu of watering, such as soil binders/stabilizers, or watering may be used to form a crust on undisturbed areas.	C		VTA /C	IC	In Q1 and Q2 2021, VTA began drafting contract specifications that include this mitigation measure for all four Contract Packages (CP-1 Systems, CP-2 Tunnel and Trackwork, CP-3 Newhall Yard/Santa Clara Station and CP-4 Stations).	

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Air Quality/ Implement Dust Control Measures	28	-MMRP-AQ-CNST-A-03	Vol-1, ROD	Implement Dust Control Measures: The contractor will water all exposed surfaces at a frequency that will maintain a minimum soil moisture content of 12 percent. Moisture content can be verified by lab samples or a moisture probe, although such verification is typically visual. No visible dust emissions are permitted to leave the construction area.	C		VTA /C	IC	In Q1 and Q2 2021, VTA began drafting contract specifications that include this mitigation measure for all four Contract Packages (CP-1 Systems, CP-2 Tunnel and Trackwork, CP-3 Newhall Yard/Santa Clara Station and CP-4 Stations).	
Air Quality/ Implement Dust Control Measures	29	-MMRP-AQ-CNST-A-04	Vol-1, ROD	Implement Dust Control Measures: The contractor will cover or moisten all haul trucks that transport soil, sand, or other loose material offsite such that there are no dust emissions.	C		VTA /C	IC	In Q1 and Q2 2021, VTA began drafting contract specifications that include this mitigation measure for all four Contract Packages (CP-1 Systems, CP-2 Tunnel and Trackwork, CP-3 Newhall Yard/Santa Clara Station and CP-4 Stations).	

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Air Quality/ Implement Dust Control Measures	30	-MMRP-AQ-CNST-A-05	Vol-1, ROD	Implement Dust Control Measures: The contractor will remove all visible mud or dirt track-out onto adjacent public roads using wet power vacuum street sweepers at least once per day, or more frequently if needed to control track-out during active soil hauling operations. The use of dry power sweeping is prohibited.	C		VTA /C	IC	In Q1 and Q2 2021, VTA began drafting contract specifications that include this mitigation measure for all four Contract Packages (CP-1 Systems, CP-2 Tunnel and Trackwork, CP-3 Newhall Yard/Santa Clara Station and CP-4 Stations).	
Air Quality/ Implement Dust Control Measures	31	-MMRP-AQ-CNST-A-06	Vol-1, ROD	Implement Dust Control Measures: The contractor will limit all vehicle speeds on unpaved roads to 15 mph.	C		VTA /C	IC	In Q1 and Q2 2021, VTA began drafting contract specifications that include this mitigation measure for all four Contract Packages (CP-1 Systems, CP-2 Tunnel and Trackwork, CP-3 Newhall Yard/Santa Clara Station and CP-4 Stations).	

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Air Quality/ Implement Dust Control Measures	32	-MMRP-AQ-CNST-A-07	Vol-1, ROD	Implement Dust Control Measures: The contractor will complete all paving operations on roadways, driveways, and sidewalks as soon as possible. The contractor will also lay building pads as soon as possible after grading, unless seeding or a soil binder is used.	C		VTA /C	IC	In Q1 and Q2 2021, VTA began drafting contract specifications that include this mitigation measure for all four Contract Packages (CP-1 Systems, CP-2 Tunnel and Trackwork, CP-3 Newhall Yard/Santa Clara Station and CP-4 Stations).	
Air Quality/ Implement Dust Control Measures	33	-MMRP-AQ-CNST-A-08	Vol-1, ROD	Implement Dust Control Measures: The contractor will post a publicly visible sign that includes the telephone number and name of the person to contact at VTA regarding dust complaints. This person will respond and take corrective action within 48 hours. The BAAQMD phone number will also be visible to ensure compliance with applicable regulations.	C		VTA /C	IC	In Q1 and Q2 2021, VTA began drafting contract specifications that include this mitigation measure for all four Contract Packages (CP-1 Systems, CP-2 Tunnel and Trackwork, CP-3 Newhall Yard/Santa Clara Station and CP-4 Stations).	

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Air Quality/ Implement Dust Control Measures	34	-MMRP-AQ-CNST-A-09	Vol-1, ROD	Implement Dust Control Measures: The contractor will suspend all excavation, grading, and/or demolition activities when average wind speeds exceed 20 mph.	C		VTA /C	IC	In Q1 and Q2 2021, VTA began drafting contract specifications that include this mitigation measure for all four Contract Packages (CP-1 Systems, CP-2 Tunnel and Trackwork, CP-3 Newhall Yard/Santa Clara Station and CP-4 Stations).	
Air Quality/ Implement Dust Control Measures	35	-MMRP-AQ-CNST-A-10	Vol-1, ROD	Implement Dust Control Measures: The contractor will install windbreaks (e.g., fences with screening) on the windward side(s) of disturbed construction areas where feasible. Windbreaks should have 50 percent (maximum) air porosity.	C		VTA /C	IC	In Q1 and Q2 2021, VTA began drafting contract specifications that include this mitigation measure for all four Contract Packages (CP-1 Systems, CP-2 Tunnel and Trackwork, CP-3 Newhall Yard/Santa Clara Station and CP-4 Stations).	

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Air Quality/ Implement Dust Control Measures	36	-MMRP-AQ-CNST-A-11	Vol-1, ROD	Implement Dust Control Measures: The contractor will plant vegetative ground cover (e.g., fast-germinating native grass seed) in disturbed areas as soon as possible and water appropriately until vegetation is established.	C		VTA /C	IC	In Q1 and Q2 2021, VTA began drafting contract specifications that include this mitigation measure for all four Contract Packages (CP-1 Systems, CP-2 Tunnel and Trackwork, CP-3 Newhall Yard/Santa Clara Station and CP-4 Stations).	
Air Quality/ Implement Dust Control Measures	37	-MMRP-AQ-CNST-A-12	Vol-1, ROD	Implement Dust Control Measures: The contractor will limit the simultaneous occurrence of excavation, grading, and ground-disturbing construction activities in the same area. The contractor will phase activities to reduce the amount of disturbed surfaces at any one time.	C		VTA /C	IC	In Q1 and Q2 2021, VTA began drafting contract specifications that include this mitigation measure for all four Contract Packages (CP-1 Systems, CP-2 Tunnel and Trackwork, CP-3 Newhall Yard/Santa Clara Station and CP-4 Stations).	

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Air Quality/ Implement Dust Control Measures	38	-MMRP-AQ-CNST-A-13	Vol-1, ROD	Implement Dust Control Measures: All trucks and equipment, including their tires, will use designated construction entrances/exits that have been constructed with rock, rumble strips, or other features to remove dirt from tires.	C		VTA /C	IC	In Q1 and Q2 2021, VTA began drafting contract specifications that include this mitigation measure for all four Contract Packages (CP-1 Systems, CP-2 Tunnel and Trackwork, CP-3 Newhall Yard/Santa Clara Station and CP-4 Stations).	
Air Quality/ Implement Dust Control Measures	39	-MMRP-AQ-CNST-A-14	Vol-1, ROD	Implement Dust Control Measures: The contractor will install sediment and erosion control devices on sites with a slope greater than 1 percent to prevent silt runoff from entering public roadways.	C		VTA /C	IC	In Q1 and Q2 2021, VTA began drafting contract specifications that include this mitigation measure for all four Contract Packages (CP-1 Systems, CP-2 Tunnel and Trackwork, CP-3 Newhall Yard/Santa Clara Station and CP-4 Stations).	

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										Status Updates/Notes
Air Quality/ Implement Dust Control Measures	40	-MMRP-AQ-CNST-A-15	Vol-1, ROD	<p>Implement Dust Control Measures: The contractor will include the following control measures as consistent with BAAQMD permitting requirements during the operation of concrete batch plants:</p> <ul style="list-style-type: none"> o The construction contractor will ensure that the outlet PM10 grain loading for the baghouse will not exceed 0.01 grains per dry standard cubic foot. o The construction contractor will properly maintain the baghouse and keep the baghouse in good operating condition at all times. The construction contractor will equip the baghouse with a device for measuring the pressure drop across the baghouse. o The construction contractor will not discharge an air contaminant into the atmosphere for a period or periods aggregating more than 3 minutes in any hour, which is as dark or darker than a Ringelmann 1.0. o The construction contractor will abate stockpiles, conveyors and unpaved roads as necessary with water sprays to maintain compliance with BAAQMD rules and regulations. 	C		VTA /C	IC	In Q1 and Q2 2021, VTA began drafting contract specifications that include this mitigation measure for all four Contract Packages (CP-1 Systems, CP-2 Tunnel and Trackwork, CP-3 Newhall Yard/Santa Clara Station and CP-4 Stations).	
Air Quality/ Use U.S. Environmental Protection Agency (EPA) Tier 4 or cleaner engines	41	-MMRP-AQ-CNST-B	Vol-1, ROD	<p>Use U.S. Environmental Protection Agency (EPA) Tier 4 or cleaner engines: VTA will ensure that all construction contracts stipulate that all off-road, diesel-powered equipment used during construction will be equipped with EPA Tier 4 or cleaner engines, except for specialized construction equipment for which an EPA Tier 4 engine is not available. This mitigation measure assumes emission reductions compared with emissions from an average fleet-wide Tier 2 engine.</p>	C		VTA /C	IC	In Q1 and Q2 2021, VTA began drafting contract specifications that include this mitigation measure for all four Contract Packages (CP-1 Systems, CP-2 Tunnel and Trackwork, CP-3 Newhall Yard/Santa Clara Station and CP-4 Stations).	

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	Chrono #	Measure #			Timeframe: Design (D)	Timeframe: Construction (C)	Timeframe: Post-construction (P)	Responsible Party	Compliance Status	Q1,Q2
										Status Updates/Notes
Air Quality/ Maintain Construction Equipment	42	-MMRP-AQ-CNST-C	-	Vol-1, ROD		C		VTA /C	IC	In Q1 and Q2 2021, VTA began drafting contract specifications that include this mitigation measure for all four Contract Packages (CP-1 Systems, CP-2 Tunnel and Trackwork, CP-3 Newhall Yard/Santa Clara Station and CP-4 Stations).
Air Quality/ Minimize Idling Times	43	-MMRP-AQ-CNST-D	-	Vol-1, ROD		C		VTA /C	IC	In Q1 and Q2 2021, VTA began drafting contract specifications that include this mitigation measure for all four Contract Packages (CP-1 Systems, CP-2 Tunnel and Trackwork, CP-3 Newhall Yard/Santa Clara Station and CP-4 Stations).

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										Status Updates/Notes
Air Quality/ Use Equipment Meeting ARB Certification Standards	44	-MMRP-AQ-CNST-E	-	Vol-1, ROD		C		VTA /C	IC	In Q1 and Q2 2021, VTA began drafting contract specifications that include this mitigation measure for all four Contract Packages (CP-1 Systems, CP-2 Tunnel and Trackwork, CP-3 Newhall Yard/Santa Clara Station and CP-4 Stations).
Air Quality/ Ensure Heavy-Duty Diesel Trucks Will Comply with EPA Emissions Standards	45	-MMRP-AQ-CNST-F	-	Vol-1, ROD		C		VTA /C	IC	In Q1 and Q2 2021, VTA began drafting contract specifications that include this mitigation measure for all four Contract Packages (CP-1 Systems, CP-2 Tunnel and Trackwork, CP-3 Newhall Yard/Santa Clara Station and CP-4 Stations).

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										Status Updates/Notes
Air Quality/ Use Low-Sulfur Fuel	46	-MMRP-AQ-CNST-G	-	Vol-1, ROD		C		VTA /C	IC	In Q1 and Q2 2021, VTA began drafting contract specifications that include this mitigation measure for all four Contract Packages (CP-1 Systems, CP-2 Tunnel and Trackwork, CP-3 Newhall Yard/Santa Clara Station and CP-4 Stations).
Air Quality/ Locate Construction Areas Away from Sensitive Receptors	47	-MMRP-AQ-CNST-H	-	Vol-1, ROD		C		VTA /C	IC	In Q1 and Q2 2021, VTA began drafting contract specifications that include this mitigation measure for all four Contract Packages (CP-1 Systems, CP-2 Tunnel and Trackwork, CP-3 Newhall Yard/Santa Clara Station and CP-4 Stations).

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										Status Updates/Notes
Air Quality/ Use Low-Volatile Organic Compound (VOC) Coatings	48	-MMRP-AQ-CNST-I	-	Vol-1, ROD		C		VTA /C	IC	In Q1 and Q2 2021, VTA began drafting contract specifications that include this mitigation measure for all four Contract Packages (CP-1 Systems, CP-2 Tunnel and Trackwork, CP-3 Newhall Yard/Santa Clara Station and CP-4 Stations).
Biological Resources and Wetlands/ Avoid Nesting Bird Season	49	-MMRP-BIO-CNST-A	-	Vol-1, ROD		C		VTA /C	IC	In Q1 and Q2 2021, VTA began drafting contract specifications that include this mitigation measure for all four Contract Packages (CP-1 Systems, CP-2 Tunnel and Trackwork, CP-3 Newhall Yard/Santa Clara Station and CP-4 Stations).

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										Status Updates/Notes	
Biological Resources and Wetlands/ Conduct Preconstruction/Pre disturbance Surveys for Nesting Birds	50	-MMRP-BIO-CNST-B	-	Vol-1, ROD	Conduct Preconstruction/Predisturbance Surveys for Nesting Birds: If it is not possible to schedule construction activities that involve tree removal or pruning between September 1 and January 1, then a qualified biologist will conduct preconstruction/predisturbance surveys for nesting birds to ensure that no nests will be disturbed during construction activities. These surveys will be conducted no more than 48 hours prior to the initiation of construction. During each survey, a qualified biologist will inspect all potential nesting habitats (e.g., trees, shrubs, grasslands, and buildings) in accessible areas within 300 feet of impact areas for raptor nests and within 100 feet of impact areas for nests of non-raptors. If an active nest (i.e., a nest with eggs or young, or any completed raptor nest) is found sufficiently close to work areas to be disturbed by these activities, the biologist, in consultation with the California Department of Fish and Wildlife (CDFW), will determine the extent of a disturbance-free buffer zone to be established around the nest (typically 300 feet for raptors and 50 to 100 feet for other species), to ensure that no nests of species protected by the MBTA and California Fish and Game Code will be disturbed as a result of construction activities.	D	C		VTA /C	IC	In Q1 and Q2 2021, VTA began drafting contract specifications that include this mitigation measure for all four Contract Packages (CP-1 Systems, CP-2 Tunnel and Trackwork, CP-3 Newhall Yard/Santa Clara Station and CP-4 Stations).
Biological Resources and Wetlands/ Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Trees	51	-MMRP-BIO-CNST	C-01	Vol-1, ROD	Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Trees: If tree removal or trimming cannot be conducted between September 15 and October 30, qualified biologists will examine trees for suitable bat-roosting habitat before tree removal or trimming. The biologists will identify high-quality habitat features (e.g., large tree cavities, basal hollows, loose or peeling bark, larger snags, palm trees with intact thatch) and search the area around these features for bats and bat signs (e.g., guano, culled insect parts, staining). Riparian woodland, orchards, and stands of mature broadleaf trees are considered potential habitat for solitary foliage-roosting bat species. Because signs of bat use are not easily found, and trees cannot be completely surveyed for bat roosts, VTA will implement the protective measures listed below (in MMRP-BIO-CNST-C-02 through C-06) for trees containing high-quality habitat features.	D	C		VTA /C	IC	In Q1 and Q2 2021, VTA began drafting contract specifications that include this mitigation measure for all four Contract Packages (CP-1 Systems, CP-2 Tunnel and Trackwork, CP-3 Newhall Yard/Santa Clara Station and CP-4 Stations).

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	Chrono #	Measure #			Timeframe: Design (D)	Timeframe: Construction (C)	Timeframe: Post-construction (P)	Responsible Party	Compliance Status	Q1,Q2
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Biological Resources and Wetlands/ Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Trees	52	-MMRP- BIO- CNST C-02	Vol-1, ROD	Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Trees: The contractor will not remove or disturb trees providing bat roosting habitat between April 1 and September 15 (the maternity period) to avoid effects on pregnant females and active maternity roosts (whether colonial or solitary).	D	C		VTA /C	IC	In Q1 and Q2 2021, VTA began drafting contract specifications that include this mitigation measure for all four Contract Packages (CP-1 Systems, CP-2 Tunnel and Trackwork, CP-3 Newhall Yard/Santa Clara Station and CP-4 Stations).
Biological Resources and Wetlands/ Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Trees	53	-MMRP- BIO- CNST C-03	Vol-1, ROD	Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Trees: The contractor will limit the removal of trees that provide bat roosting habitat to between September 15 and October 30, which corresponds to when bats have not yet entered torpor or would be caring for nonvolant young (i.e., young that are unable to fly).	D	C		VTA /C	IC	In Q1 and Q2 2021, VTA began drafting contract specifications that include this mitigation measure for all four Contract Packages (CP-1 Systems, CP-2 Tunnel and Trackwork, CP-3 Newhall Yard/Santa Clara Station and CP-4 Stations).

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										Status Updates/Notes
Biological Resources and Wetlands/ Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Trees	54	-MMRP- BIO- CNST C-04	Vol-1, ROD	Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Trees: The contractor will remove trees in pieces rather than felling an entire tree.	D	C		VTA /C	IC	In Q1 and Q2 2021, VTA began drafting contract specifications that include this mitigation measure for all four Contract Packages (CP-1 Systems, CP-2 Tunnel and Trackwork, CP-3 Newhall Yard/Santa Clara Station and CP-4 Stations).
Biological Resources and Wetlands/ Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Trees	55	-MMRP- BIO- CNST C-05	Vol-1, ROD	Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Trees: If a maternity roost is found, whether solitary or colonial, the contractor will ensure that roost remains undisturbed until September 15 or until a qualified biologist has determined the roost is no longer active.	D	C		VTA /C	IC	In Q1 and Q2 2021, VTA began drafting contract specifications that include this mitigation measure for all four Contract Packages (CP-1 Systems, CP-2 Tunnel and Trackwork, CP-3 Newhall Yard/Santa Clara Station and CP-4 Stations).

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										Status Updates/Notes
Biological Resources and Wetlands/ Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Trees	56	-MMRP-BIO-CNST C-06	Vol-1, ROD	<p>Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Trees: If avoidance of non-maternity roost trees is not possible, and tree removal or trimming must occur between October 30 and August 31, qualified biologists will monitor tree trimming/removal of the habitat. If possible, tree trimming or removal should occur in the late afternoon or evening when it is closer to the time that bats would normally arouse. Prior to trimming or removal of trees providing suitable roosting habitat, the contractor will shake each tree gently and allow several minutes to pass before felling trees or removing limbs to allow bats time to arouse and leave the tree. Biologists should search downed vegetation for dead and injured bats. The contractor will report the presence of dead or injured bats that are species of special concern to CDFW. The biologist will prepare a biological monitoring report, which will be provided to VTA and CDFW.</p>	D	C		VTA /C	IC	In Q1 and Q2 2021, VTA began drafting contract specifications that include this mitigation measure for all four Contract Packages (CP-1 Systems, CP-2 Tunnel and Trackwork, CP-3 Newhall Yard/Santa Clara Station and CP-4 Stations).
Biological Resources and Wetlands/ Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Buildings	57	-MMRP-BIO-CNST C-07	Vol-1, ROD	<p>Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Buildings: Prior to the building removal or demolition, qualified biologists will conduct daytime surveys to assess the building(s) for potential bat roosting habitat, and to look for bats and bat sign. Qualified biologists will have knowledge of the natural history of the species that could occur and sufficient experience determining bat occupancy in buildings and bat survey techniques. The biologists will examine both the inside and outside of the buildings for potential roosting habitat, as well as routes of entry to the buildings. The biologists will note and map on drawings of the buildings the locations of any roosting bats, signs of bat use, and entry and exit points. The biologists will also photograph roost sites as feasible. The habitat assessment surveys should be conducted as far in advance of demolition as possible to allow time for planning and coordinating with CDFW, should bats be found.</p> <p>Depending on the results of the habitat assessment, VTA and its representatives will take the following steps (MMRP-BIO-CNST-C-08 through C-18).</p>	D	C		VTA /C	IC	In Q1 and Q2 2021, VTA began drafting contract specifications that include this mitigation measure for all four Contract Packages (CP-1 Systems, CP-2 Tunnel and Trackwork, CP-3 Newhall Yard/Santa Clara Station and CP-4 Stations).

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Biological Resources and Wetlands/ Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Buildings	58	-MMRP- BIO- CNST C-08	Vol-1, ROD	Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Buildings: If the building(s) can be adequately assessed (i.e., all areas of the building can be examined) and no habitat or limited habitat for roosting bats is present and no signs of bat use are present, qualified biologists will conduct a preconstruction survey of the interior and exterior of the building(s) within 24 hours of demolition. If bats are found roosting during the preconstruction survey, biologists will contact CDFW for direction on how to proceed.	D	C		VTA /C	IC	In Q1 and Q2 2021, VTA began drafting contract specifications that include this mitigation measure for all four Contract Packages (CP-1 Systems, CP-2 Tunnel and Trackwork, CP-3 Newhall Yard/Santa Clara Station and CP-4 Stations).
Biological Resources and Wetlands/ Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Buildings	59	-MMRP- BIO- CNST C-09	Vol-1, ROD	Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Buildings: If moderate or high potential habitat is present but there are no signs of bat use, VTA will implement measures under the guidance of a qualified bat biologist to exclude bats from using the building(s) as a roost site, such as sealing off entry points. Prior to installing exclusion measures, qualified biologists will re-survey the building(s) to ensure that no bats are present. Additionally, biologists will conduct a preconstruction survey of the interior and exterior of the building(s) within 24 hours of demolition to confirm that no bats are present. If bats are found roosting during the preconstruction survey, biologists will contact CDFW for direction on how to proceed.	D	C		VTA /C	IC	In Q1 and Q2 2021, VTA began drafting contract specifications that include this mitigation measure for all four Contract Packages (CP-1 Systems, CP-2 Tunnel and Trackwork, CP-3 Newhall Yard/Santa Clara Station and CP-4 Stations).

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Biological Resources and Wetlands/ Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Buildings	60	-MMRP-BIO-CNST C-10	Vol-1, ROD	Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Buildings: If moderate or high potential habitat is present and bats or bat sign are observed, or if exclusion measures are not installed as described above, or the building(s) provides suitable habitat but could not be adequately assessed, VTA will implement the following protective measures (MMRP-BIO-CNST-C-11 through C-13).	D	C		VTA /C	IC	In Q1 and Q2 2021, VTA began drafting contract specifications that include this mitigation measure for all four Contract Packages (CP-1 Systems, CP-2 Tunnel and Trackwork, CP-3 Newhall Yard/Santa Clara Station and CP-4 Stations).
Biological Resources and Wetlands/ Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Buildings	61	-MMRP-BIO-CNST C-11	Vol-1, ROD	Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Buildings: Biologists will conduct follow-up surveys to determine if bats are still present. If species identification is required by CDFW, biologists will use night vision goggles and active acoustic monitoring using full spectrum bat detectors during the surveys. VTA will determine a survey plan (number, timing, and type of surveys) in coordination with CDFW.	D	C		VTA /C	IC	In Q1 and Q2 2021, VTA began drafting contract specifications that include this mitigation measure for all four Contract Packages (CP-1 Systems, CP-2 Tunnel and Trackwork, CP-3 Newhall Yard/Santa Clara Station and CP-4 Stations).

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Biological Resources and Wetlands/ Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Buildings	62	-MMRP- BIO- CNST C-12	Vol-1, ROD	Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Buildings: Based on the timing of demolition, the extent of bat sign or occupied habitat, and the species present (if determined), the qualified biologists will work with VTA and CDFW to develop a plan to discourage or exclude bat use prior to demolition. The plan may include installing exclusion measures or using light or other means to deter bats from using the building to roost.	D	C		VTA /C	IC	In Q1 and Q2 2021, VTA began drafting contract specifications that include this mitigation measure for all four Contract Packages (CP-1 Systems, CP-2 Tunnel and Trackwork, CP-3 Newhall Yard/Santa Clara Station and CP-4 Stations).
Biological Resources and Wetlands/ Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Buildings	63	-MMRP- BIO- CNST C-13	Vol-1, ROD	Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Buildings: Biologists will conduct a preconstruction survey of the interior and exterior of the building within 24 hours of demolition.	D	C		VTA /C	IC	In Q1 and Q2 2021, VTA began drafting contract specifications that include this mitigation measure for all four Contract Packages (CP-1 Systems, CP-2 Tunnel and Trackwork, CP-3 Newhall Yard/Santa Clara Station and CP-4 Stations).

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Biological Resources and Wetlands/ Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Buildings	64	-MMRP- BIO- CNST C-14	Vol-1, ROD	Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Buildings: Depending on the species of bats present, size of the bat roost, and timing of the demolition, additional protective measures may be necessary. VTA will determine appropriate measures in coordination with CDFW. These measures may include those listed below (MMRP-BIO-CNST-C-15 through C-17).	D	C		VTA /C	IC	In Q1 and Q2 2021, VTA began drafting contract specifications that include this mitigation measure for all four Contract Packages (CP-1 Systems, CP-2 Tunnel and Trackwork, CP-3 Newhall Yard/Santa Clara Station and CP-4 Stations).
Biological Resources and Wetlands/ Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Buildings	65	-MMRP- BIO- CNST C-15	Vol-1, ROD	Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Buildings: To avoid effects on maternity colonies or hibernating bats, the contractor will not demolish a building while bats are present, generally between April 1 and September 15 (maternity season) and from October 30 to March 1 (hibernation).	D	C		VTA /C	IC	In Q1 and Q2 2021, VTA began drafting contract specifications that include this mitigation measure for all four Contract Packages (CP-1 Systems, CP-2 Tunnel and Trackwork, CP-3 Newhall Yard/Santa Clara Station and CP-4 Stations).

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										Status Updates/Notes
Biological Resources and Wetlands/ Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Buildings	66	-MMRP- BIO- CNST C-16	Vol-1, ROD	Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Buildings: The contractor will remove only roosting habitat following the maternity season and prior to hibernation, generally between September 15 and October 30, unless the contractor first installs exclusionary devices (as described below). The contractor may use other measures, such as using lights to deter bat roosting, if developed in coordination with and approved by CDFW.	D	C		VTA /C	IC	In Q1 and Q2 2021, VTA began drafting contract specifications that include this mitigation measure for all four Contract Packages (CP-1 Systems, CP-2 Tunnel and Trackwork, CP-3 Newhall Yard/Santa Clara Station and CP-4 Stations).
Biological Resources and Wetlands/ Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Buildings	67	-MMRP- BIO- CNST C-17	Vol-1, ROD	Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Buildings: The contractor will install exclusion devices before the maternity season and prior to hibernation, generally from March 1–30 or September 15–October 30 to preclude bats from occupying a roost site during demolition. Exclusionary devices will only be installed by or under the supervision of an experienced bat biologist.	D	C		VTA /C	IC	In Q1 and Q2 2021, VTA began drafting contract specifications that include this mitigation measure for all four Contract Packages (CP-1 Systems, CP-2 Tunnel and Trackwork, CP-3 Newhall Yard/Santa Clara Station and CP-4 Stations).

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Biological Resources and Wetlands/ Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Buildings	68	-MMRP- BIO- CNST	C-18	Vol-1, ROD	Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Buildings: CDFW may require compensatory mitigation for the loss of roosting habitat depending on the species present and size of the bat roost. Compensation, if required, will be determined in consultation with CDFW, and may include construction and monitoring of suitable replacement habitat on or near the BART Extension site.	D	C		VTA /C	IC	In Q1 and Q2 2021, VTA began drafting contract specifications that include this mitigation measure for all four Contract Packages (CP-1 Systems, CP-2 Tunnel and Trackwork, CP-3 Newhall Yard/Santa Clara Station and CP-4 Stations).
Biological Resources and Wetlands/ Protect Riparian Habitat	69	-MMRP- BIO- CNST-D	-	Vol-1, ROD	Protect Riparian Habitat: VTA will design all BART Extension facilities to avoid temporary and permanent adverse effects on riparian habitat. VTA will signify as environmentally sensitive areas on plans all riparian forest areas identified along the Guadalupe River and Los Gatos Creek and will ensure such habitat is marked with protective orange fencing or flagging during construction to avoid disturbance or accidental intrusion by workers or equipment. Contractors will not use night lighting for construction activities and staging in the riparian area.		C		VTA /C	IC	In Q1 and Q2 2021, VTA began drafting contract specifications that include this mitigation measure for all four Contract Packages (CP-1 Systems, CP-2 Tunnel and Trackwork, CP-3 Newhall Yard/Santa Clara Station and CP-4 Stations).

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Biological Resources and Wetlands/ Conduct Preconstruction Tricolored Blackbird Nesting Surveys and Determine Appropriate Action	70	-MMRP-BIO-CNST-E	-	Vol-1, ROD	N/A	N/A	N/A	N/A	N/A	N/A - See 2018 for Documentation
Biological Resources and Wetlands/ Conduct Preconstruction Burrowing Owl Surveys and Determine Appropriate Action (for Newhall Maintenance Facility)	71	-MMRP-BIO-CNST-	F-01	Vol-1, ROD	D	C		VTA /C	IC	This is a summary mitigation measure; please refer to the following measures MMRP-BIO-CNST-F-02 to F-15 related to burrowing owls for details on each requirement. Note that these measures only apply at the Newhall Maintenance Facility, which is the only area on the project with burrowing owl habitat.

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	Chrono #	Measure #			Timeframe: Design (D)	Timeframe: Construction (C)	Timeframe: Post-construction (P)	Responsible Party	Compliance Status	Q1,Q2
										Status Updates/Notes
Biological Resources and Wetlands/ Conduct Preconstruction Burrowing Owl Surveys and Determine Appropriate Action (for Newhall Maintenance Facility)	72	-MMRP- BIO- CNST-	F-02	Vol-1, ROD	D	C	VTA /C	IC	<p>In Q1 and Q2 2021, pre-activity BUOW Surveys were performed on 04/01/2021, 04/05/2020, 05/10/2021, 05/17/2021, 06/02/2021 and 06/07/2021 in advance of materials disposal disturbance on site. No owls were found.</p> <p>Three pallets of wood posts were delivered to the Newhall Yard on 06/16/21 and placed at the designated storage area.</p> <p>VTA began drafting contract specifications that include this mitigation measure for the applicable Contract Packages (CP-2 Tunnel and Trackwork and CP-3 Newhall Yard/Santa Clara Station).</p>	

Env Doc Chapter / Mitigation Topic	MMRP Code		Source Document	Mitigation Measure	Implementation					2021
	Chrono #	Measure #			Timeframe: Design (D)	Timeframe: Construction (C)	Timeframe: Post-construction (P)	Responsible Party	Compliance Status	Q1,Q2
										Status Updates/Notes
Biological Resources and Wetlands/ Conduct Preconstruction Burrowing Owl Surveys and Determine Appropriate Action (for Newhall Maintenance Facility): Avoidance Measures: Breeding Season (February 1–August 31)	73	-MMRP-BIO-CNST-F-03	Vol-1, ROD	<p>Conduct Preconstruction Burrowing Owl Surveys and Determine Appropriate Action (for Newhall Maintenance Facility): Avoidance Measures: Breeding Season (February 1–August 31) - In order to allow covered activities to go forward in burrowing owl habitat, VTA will employ avoidance measures described below to ensure that direct take does not occur.</p> <p>If evidence of burrowing owls is found during the breeding season (February 1–August 31), VTA will avoid all nest sites that could be disturbed by construction during the remainder of the breeding season or while the nest is occupied by adults or young (occupation includes individuals or family groups foraging on or near the site following fledging). Avoidance will include establishment of a 250-foot non-disturbance buffer zone around nests. Construction may occur outside of the 250-foot non-disturbance buffer zone.</p>	D	C		VTA /C	IC	In Q1 and Q2 2021, this measure did not apply because no owls were observed.
Biological Resources and Wetlands/ Conduct Preconstruction Burrowing Owl Surveys and Determine Appropriate Action (for Newhall Maintenance Facility): Avoidance Measures: Breeding Season (February 1–August 31)	74	-MMRP-BIO-CNST-F-04	Vol-1, ROD	<p>Conduct Preconstruction Burrowing Owl Surveys at Newhall Maintenance Facility and Determine Appropriate Action- Avoidance Measures: Breeding Season (February 1–August 31) - Construction may take place inside of the 250-foot non-disturbance buffer during the breeding season if the following occurs:</p> <ul style="list-style-type: none"> • The nest is not disturbed, and • VTA develops an avoidance, minimization, and monitoring plan that will be reviewed by CDFW, USFWS, and SCVHA prior to construction based on the following criteria (MMRP-BIO-CNST-F-05 through F-09): 	D	C		VTA /C	IC	In Q1 and Q2 2021, this measure did not apply because no owls were observed.

Env Doc Chapter / Mitigation Topic	MMRP Code		Source Document	Mitigation Measure	Implementation					2021
	Chrono #	Measure #			Timeframe: Design (D)	Timeframe: Construction (C)	Timeframe: Post-construction (P)	Responsible Party	Compliance Status	Q1, Q2
										Status Updates/Notes
Biological Resources and Wetlands/ Conduct Preconstruction Burrowing Owl Surveys and Determine Appropriate Action (for Newhall Maintenance Facility): Avoidance Measures: Breeding Season (February 1–August 31)	75	-MMRP-BIO-CNST-F-05	Vol-1, ROD	Conduct Preconstruction Burrowing Owl Surveys at Newhall Maintenance Facility and Determine Appropriate Action- Avoidance Measures: Breeding Season (February 1–August 31) CDFW, USFWS, and the SCVHA approves the avoidance and minimization plan provided by VTA. CDFW, USFWS, and SCVHA will have 21 calendar days to respond to a request from VTA to review the proposed construction monitoring plan. If these parties do not respond within 21 calendar days, it will be presumed that they concur with the proposal and work can commence.	D	C		VTA /C	IC	In Q1 and Q2 2021, this measure did not apply because no owls were observed.
Biological Resources and Wetlands/ Conduct Preconstruction Burrowing Owl Surveys and Determine Appropriate Action (for Newhall Maintenance Facility): Avoidance Measures: Breeding Season (February 1–August 31)	76	-MMRP-BIO-CNST-F-06	Vol-1, ROD	Conduct Preconstruction Burrowing Owl Surveys at Newhall Maintenance Facility and Determine Appropriate Action- Avoidance Measures: Breeding Season (February 1–August 31) A qualified biologist monitors the owls for at least 3 days prior to construction to determine baseline nesting and foraging behavior (i.e., behavior without construction).	D	C		VTA /C	IC	In Q1 and Q2 2021, this measure did not apply because no owls were observed.

Env Doc Chapter / Mitigation Topic	MMRP Code		Source Document	Mitigation Measure	Implementation					2021
	Chrono #	Measure #			Timeframe: Design (D)	Timeframe: Construction (C)	Timeframe: Post-construction (P)	Responsible Party	Compliance Status	Q1,Q2
										Status Updates/Notes
Biological Resources and Wetlands/ Conduct Preconstruction Burrowing Owl Surveys and Determine Appropriate Action (for Newhall Maintenance Facility): Avoidance Measures: Breeding Season (February 1–August 31)	77	-MMRP-BIO-CNST-F-07	Vol-1, ROD	Conduct Preconstruction Burrowing Owl Surveys at Newhall Maintenance Facility and Determine Appropriate Action-Avoidance Measures: Breeding Season (February 1–August 31) The same qualified biologist monitors the owls during construction and finds no change in owl nesting and foraging behavior in response to construction activities.	D	C		VTA /C	IC	In Q1 and Q2 2021, this measure did not apply because no owls were observed.
Biological Resources and Wetlands/ Conduct Preconstruction Burrowing Owl Surveys and Determine Appropriate Action (for Newhall Maintenance Facility): Avoidance Measures: Breeding Season (February 1–August 31)	78	-MMRP-BIO-CNST-F-08	Vol-1, ROD	Conduct Preconstruction Burrowing Owl Surveys at Newhall Maintenance Facility and Determine Appropriate Action-Avoidance Measures: Breeding Season (February 1–August 31) If there is any change in owl nesting and foraging behavior as a result of construction activities, these activities will cease within the 250-foot buffer. Construction cannot resume within the 250-foot buffer until the adults and juveniles from the occupied burrows have moved out of the construction area.	D	C		VTA /C	IC	In Q1 and Q2 2021, this measure did not apply because no owls were observed.

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	Chrono #	Measure #			Timeframe: Design (D)	Timeframe: Construction (C)	Timeframe: Post-construction (P)	Responsible Party	Compliance Status	Q1,Q2
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Biological Resources and Wetlands/ Conduct Preconstruction Burrowing Owl Surveys and Determine Appropriate Action (for Newhall Maintenance Facility): Avoidance Measures: Breeding Season (February 1–August 31)	79	-MMRP-BIO-CNST-F-09	Vol-1, ROD	<p>Conduct Preconstruction Burrowing Owl Surveys at Newhall Maintenance Facility and Determine Appropriate Action- Avoidance Measures: Breeding Season (February 1–August 31)</p> <p>If monitoring indicates that the nest is abandoned prior to the end of the nesting season and the burrow is no longer in use by owls, the non-disturbance buffer zone may be removed. The biologist will excavate the burrow to prevent reoccupation after receiving approval from CDFW, USFWS, and SCVHA.</p>	D	C		VTA /C	IC	In Q1 and Q2 2021, this measure did not apply because no owls were observed.
Biological Resources and Wetlands/ Conduct Preconstruction Burrowing Owl Surveys at Newhall Maintenance Facility and Determine Appropriate Action-Avoidance Measures: Non-Breeding Season (September 1–January 31)	80	-MMRP-BIO-CNST-F-10	Vol-1, ROD	<p>Conduct Preconstruction Burrowing Owl Surveys at Newhall Maintenance Facility and Determine Appropriate Action- Avoidance Measures: Non-Breeding Season (September 1–January 31)</p> <p>During the non-breeding season (September 1–January 31), VTA will establish a 250-foot non-disturbance buffer around occupied burrows as determined by a qualified biologist. Construction activities outside of this 250-foot buffer are allowed. Construction activities within the non-disturbance buffer are allowed if the following criteria (MMRP-BIO-CNST-F-11 through F-15) are met in order to prevent owls from abandoning important overwintering sites.</p>	D	C		VTA /C	IC	In Q1 and Q2 2021, this measure did not apply because no owls were observed.

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										Status Updates/Notes
Biological Resources and Wetlands/ Conduct Preconstruction Burrowing Owl Surveys at Newhall Maintenance Facility and Determine Appropriate Action-Avoidance Measures: Non-Breeding Season (September 1–January 31)	81	-MMRP-BIO-CNST-F-11	Vol-1, ROD	<p>Conduct Preconstruction Burrowing Owl Surveys at Newhall Maintenance Facility and Determine Appropriate Action- Avoidance Measures: Non-Breeding Season (September 1–January 31)</p> <p>A qualified biologist monitors the owls for at least 3 days prior to construction to determine baseline foraging behavior (i.e., behavior without construction).</p>	D	C		VTA /C	IC	In Q1 and Q2 2021, this measure did not apply because no owls were observed.
Biological Resources and Wetlands/ Conduct Preconstruction Burrowing Owl Surveys at Newhall Maintenance Facility and Determine Appropriate Action-Avoidance Measures: Non-Breeding Season (September 1–January 31)	82	-MMRP-BIO-CNST-F-12	Vol-1, ROD	<p>Conduct Preconstruction Burrowing Owl Surveys at Newhall Maintenance Facility and Determine Appropriate Action- Avoidance Measures: Non-Breeding Season (September 1–January 31)</p> <p>The same qualified biologist monitors the owls during construction and finds no change in owl foraging behavior in response to construction activities.</p> <p>Monitoring must continue as described here for the non-breeding season as long as the burrow remains active.</p>	D	C		VTA /C	IC	In Q1 and Q2 2021, this measure did not apply because no owls were observed.

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	Chrono #	Measure #			Timeframe: Design (D)	Timeframe: Construction (C)	Timeframe: Post-construction (P)	Responsible Party	Compliance Status	Q1,Q2
										Status Updates/Notes
Biological Resources and Wetlands/ Conduct Preconstruction Burrowing Owl Surveys at Newhall Maintenance Facility and Determine Appropriate Action-Avoidance Measures: Non-Breeding Season (September 1–January 31)	83	-MMRP-BIO-CNST-F-13	Vol-1, ROD	Conduct Preconstruction Burrowing Owl Surveys at Newhall Maintenance Facility and Determine Appropriate Action- Avoidance Measures: Non-Breeding Season (September 1–January 31) If there is any change in owl nesting and foraging behavior as a result of construction activities, these activities will cease within the 250-foot buffer.	D	C		VTA /C	IC	In Q1 and Q2 2021, this measure did not apply because no owls were observed.
Biological Resources and Wetlands/ Conduct Preconstruction Burrowing Owl Surveys at Newhall Maintenance Facility and Determine Appropriate Action-Avoidance Measures: Non-Breeding Season (September 1–January 31)	84	-MMRP-BIO-CNST-F-14	Vol-1, ROD	Conduct Preconstruction Burrowing Owl Surveys at Newhall Maintenance Facility and Determine Appropriate Action- Avoidance Measures: Non-Breeding Season (September 1–January 31) If the owls are gone for at least 1 week, VTA may request approval from CDFW, USFWS, and SCVHA for a qualified biologist to excavate usable burrows to prevent owls from re-occupying the site. After all usable burrows are excavated, the buffer zone will be removed and construction may continue. Monitoring must continue as described above for the non-breeding season as long as the burrow remains active.	D	C		VTA /C	IC	In Q1 and Q2 2021, this measure did not apply because no owls were observed.

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	Chrono #	Measure #			Timeframe: Design (D)	Timeframe: Construction (C)	Timeframe: Post-construction (P)	Responsible Party	Compliance Status	Q1, Q2
										Status Updates/Notes
Biological Resources and Wetlands/ Conduct Preconstruction Burrowing Owl Surveys at Newhall Maintenance Facility and Determine Appropriate Action-Avoidance Measures: Non-Breeding Season (September 1–January 31) Construction Monitoring	85	-MMRP-BIO-CNST-F-15	Vol-1, ROD	<p>Conduct Preconstruction Burrowing Owl Surveys at Newhall Maintenance Facility and Determine Appropriate Action- Avoidance Measures: Non-Breeding Season (September 1–January 31) Construction Monitoring</p> <p>Based on the avoidance, minimization, and monitoring plan developed (as required above), during construction, VTA will establish and maintain the non-disturbance buffer zones if applicable. A qualified biologist will monitor the site consistent with the requirements described above to ensure that buffers are enforced and owls are not disturbed.</p> <p>The biological monitor will also conduct training of construction personnel on the avoidance procedures, buffer zones, and protocols in the event that a burrowing owl flies into an active construction zone.</p>	D	C		VTA /C	IC	In Q1 and Q2 2021, this measure did not apply because no owls were observed.

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										Status Updates/Notes
Cultural Resources/ Implement Programmatic Agreement and Archaeological Resources Treatment Plan	86	-MMRP-CUL-CNST-A	-	Vol-1, ROD	D	C		VTA	IC	<p>VTA is implementing the Archaeological Resources Treatment Plan (ARTP). Archaeological investigations are ongoing as right-of-way is acquired for the project. Results will be reported to all Consulting Parties (CPs) to the Programmatic Agreement (PA).</p> <p>Because no comments or questions on the 2020 PA Annual Report were received, VTA sent a follow-up notice to Consulting Parties (CPs) on March 4, 2021 that the report was considered final as of February 2, 2021.</p> <p>VTA re-started archaeological field investigations in Q2 2021.</p>

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										Status Updates/Notes
Geology, Soils, and Seismicity/ Incorporate Design Specifications to Minimize Effects from Liquefaction Hazards	87	-MMRP- GEO- CNST- A-01	Vol-1, ROD	Incorporate Design Specifications to Minimize Effects from Liquefaction Hazards: If BART Extension stations, system facilities, or portions of the alignment are determined to be in areas exceeding pertinent codes and standards including the California Building Code and BART Facilities Standards Design Criteria for liquefaction, VTA will implement the following methods (MMRP-GEO-CNST-A-01 through A-06) during construction to minimize the potential impacts. VTA will determine the exact methods to reduce impacts from liquefaction during final engineering.	D	C	P	VTA /C	IC	In Q1 2021, VTA reviewed the MMRP and assigned this mitigation measure to the Design Criteria Manual. In Q2 2021, VTA incorporated this mitigation measure into Volume 4 Technical Requirements, in preparation for the CP2 RFP release.
Geology, Soils, and Seismicity/ Incorporate Design Specifications to Minimize Effects from Liquefaction Hazards	88	-MMRP- GEO- CNST- A-02	Vol-1, ROD	Incorporate Design Specifications to Minimize Effects from Liquefaction Hazards: <ul style="list-style-type: none"> VTA will use pile foundations as a means of ground densification as a cost-effective mitigation measure for the seismic liquefaction hazard. <i>(Also see MMRP-GEO-CNST-A-06).</i>	D	C	P	VTA /C	IC	In Q1 2021, VTA reviewed the MMRP and assigned this mitigation measure to the Design Criteria Manual. In Q2 2021, VTA incorporated this mitigation measure into Volume 4 Technical Requirements, in preparation for the CP2 RFP release.

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	Chrono #	Measure #			Timeframe: Design (D)	Timeframe: Construction (C)	Timeframe: Post-construction (P)	Responsible Party	Compliance Status	Q1,Q2
										Status Updates/Notes
Geology, Soils, and Seismicity/ Incorporate Design Specifications to Minimize Effects from Liquefaction Hazards	89	-MMRP- GEO- CNST- A-03	Vol-1, ROD	<p>Incorporate Design Specifications to Minimize Effects from Liquefaction Hazards:</p> <ul style="list-style-type: none"> VTA will support parking garages at the stations on piles. <p><i>(Also see MMRP-GEO-CNST-A-06).</i></p>	D	C	P	VTA /C	IC	<p>In Q1 2021, VTA reviewed the MMRP and assigned this mitigation measure to the Design Criteria Manual.</p> <p>In Q2 2021, VTA incorporated this mitigation measure into Volume 4 Technical Requirements, in preparation for the CP2 RFP release.</p>
Geology, Soils, and Seismicity/ Incorporate Design Specifications to Minimize Effects from Liquefaction Hazards	90	-MMRP- GEO- CNST- A-04	Vol-1, ROD	<p>Incorporate Design Specifications to Minimize Effects from Liquefaction Hazards:</p> <ul style="list-style-type: none"> For shallow foundations for other peripheral facilities around the stations and pavement and parking lot, VTA will implement the following if necessary. <ul style="list-style-type: none"> Use additional reinforcement, construction joints, and grade beams. Integrate subgrade improvements (using geotextile fabric and structural fill), and other methods to accommodate potential ground settlements. <p><i>(Also see MMRP-GEO-CNST-A-06).</i></p>	D	C	P	VTA /C	IC	<p>In Q1 2021, VTA reviewed the MMRP and assigned this mitigation measure to the Design Criteria Manual.</p> <p>In Q2 2021, VTA incorporated this mitigation measure into Volume 4 Technical Requirements, in preparation for the CP2 RFP release.</p>

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	Chrono #	Measure #			Timeframe: Design (D)	Timeframe: Construction (C)	Timeframe: Post-construction (P)	Responsible Party	Compliance Status	Q1,Q2
										Status Updates/Notes
Geology, Soils, and Seismicity/ Incorporate Design Specifications to Minimize Effects from Liquefaction Hazards	91	-MMRP- GEO- CNST- A-05	Vol-1, ROD	Incorporate Design Specifications to Minimize Effects from Liquefaction Hazards: To mitigate potential liquefaction-related uplift of the BART Extension's underground tunnels and stations situated below the water table in liquefiable soils, VTA will ensure that the construction contractor either applies anchors or designs the structures' concrete foundations and walls thick enough to make the total weight of the structures large enough to completely counteract the liquefaction-related uplift force. <i>(Also see MMRP-GEO-CNST-A-06).</i>	D	C	P	VTA /C	IC	In Q1 2021, VTA reviewed the MMRP and assigned this mitigation measure to the Design Criteria Manual. In Q2 2021, VTA incorporated this mitigation measure into Volume 4 Technical Requirements, in preparation for the CP2 RFP release.
Geology, Soils, and Seismicity/ Incorporate Design Specifications to Minimize Effects from Liquefaction Hazards	92	-MMRP- GEO- CNST- A-06	Vol-1, ROD	Incorporate Design Specifications to Minimize Effects from Liquefaction Hazards: Other liquefaction hazard mitigation measures used in previous BART projects that may be considered for the BART Extension are as follows. o In-situ treatment/densification with vibro-replacement stone columns. o Load transfer to underlying bearing layers, which are non-liquefiable with soil/cement columns. o Over-excavation and replacement of liquefaction prone soils with compacted engineered fill.	D	C	P	VTA /C	IC	In Q1 2021, VTA reviewed the MMRP and assigned this mitigation measure to the Design Criteria Manual. In Q2 2021, VTA incorporated this mitigation measure into Volume 4 Technical Requirements, in preparation for the CP2 RFP release.

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										Status Updates/Notes
Geology, Soils, and Seismicity/ Implement Preconstruction and Post-construction Building Condition Surveys for Settlement	93	-MMRP- GEO- CNST- B-01	Vol-1, ROD	<p>Implement Preconstruction and Post-construction Building Condition Surveys for Settlement: VTA will conduct preconstruction building condition surveys of the interiors and exteriors of select structures, both historic and non-historic buildings, within the settlement trough along the tunnel alignment and within the limit of influence around the cut-and-cover excavations to assess the baseline condition of each property that could be affected by project-induced settlement. These surveys will include written and photographic (video and still) records, including written descriptions and photos of any cracks. VTA will also conduct post-construction building condition surveys of the same structures. VTA will compare the results of these surveys with the preconstruction condition surveys so that any construction-related effects of tunneling and cut-and-cover construction on structures can be assessed.</p> <p>For the cut-and-cover activities, surveys will be performed prior to any construction in the cut-and-cover work area to establish the baseline building condition. For construction of the tunnel via Tunnel Boring Machine (TBM), surveys will be performed as close to the planned dates of tunneling as possible so that the results are as current as possible. Therefore, surveys will be performed prior to passage of the TBMs, with some surveys conducted once tunneling has commenced.</p>	D	C	P	VTA /C	IC	-

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										Status Updates/Notes
Geology, Soils, and Seismicity/ Implement Preconstruction and Post-construction Building Condition Surveys for Settlement- Historic Buildings	94	-MMRP- GEO- CNST- B-02	Vol-1, ROD	<p>Implement Preconstruction and Post-construction Building Condition Surveys for Settlement- Historic Buildings: For historic structures, the Condition Assessment Report, in accordance with Section 106, will be prepared along with the preconstruction building condition surveys. Results will be used by a structural engineer in coordination with the historic Qualified Professional (QP) to identify structural settlement thresholds for each historic structure prior to construction. If anticipated maximum settlement due to tunneling or cut-and-cover activities would cause more than cosmetic damage, then ground treatment technologies outlined in Section 5.3.1.4, Ground Treatment, will be employed to further reduce settlement to within building-specific structural settlement thresholds. In the event of inadvertent, construction-related damage to historic buildings, repairs will be conducted in accordance with the Secretary of the Interior’s Standards for the Treatment of Historic Properties and consistent with 36 CFR 800.13(b). VTA and the historic QP will implement these repairs in consultation with FTA and SHPO.</p> <p>For historic structures, surveys prior to either cut-and-cover or tunneling will be performed enough in advance of the construction to allow adequate time for any necessary ground treatment that may be required to reduce settlement to be performed.</p>	D	C	P	VTA /C	IC	<p>In Q1 and Q2 2021, 6 of the remaining 9 pre-construction building condition assessments for historic buildings were completed.</p> <p>The Condition Assessment Reports were prepared along with the preconstruction building condition surveys.</p>
Geology, Soils, and Seismicity/ Monitor Ground Surface during Tunneling Activities	95	-MMRP- GEO- CNST-C	Vol-1, ROD	<p>Monitor Ground Surface during Tunneling Activities: The contractor will conduct ground surface monitoring prior to and after tunneling by licensed land surveyors. The contractor will mount survey monitoring points on potentially affected structures and representative historic buildings, including the most susceptible structures, select utilities susceptible to settlement, and in representative locations immediately adjacent to streams within the settlement trough along the tunnel alignment to monitor ground movements and effects of tunnel boring. The contractor must obtain approval from VTA and the historic QP to install any monitoring devices or crack gauges on or in historic buildings that require alteration of the building. The contractor will provide settlement monitoring data to VTA immediately upon completion of the field survey and use the data to assist in minimizing adverse effects along the tunnel alignment.</p>	D	C		VTA /C	IC	<p>This mitigation measure has been incorporated into the Volume 01 Division 01 Specifications.</p>

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										Status Updates/Notes	
Geology, Soils, and Seismicity/ Monitor Settlement Effects around Cut-and-Cover Excavations	96	-MMRP- GEO- CNST-D	-	Vol-1, ROD	<p>Monitor Settlement Effects around Cut-and-Cover Excavations: For the cut and cover activities, the contractor will perform building and ground surface monitoring prior to, during, and after construction to survey the effects of cut-and-cover activities on structures, historic buildings, and utilities. The contractor will mount survey monitoring points on all potentially affected structures and historic buildings, including the most susceptible structures, select utilities susceptible to settlement, and in representative locations within the limit of influence around the cut-and-cover excavations to monitor any effects of settlement. The contractor must obtain approval from VTA and the historic QP to install any monitoring devices or crack gauges on or in historic buildings that require alteration of the building. Survey monitoring points will be field surveyed by licensed land surveyors at a frequency determined by the preconstruction building survey or Condition Assessment Report (for historic buildings). The contractor will provide settlement field survey monitoring data to VTA immediately upon completion of the field survey. The data will be used to direct real-time modifications to shoring and ground treatment practices and procedures as appropriate to minimize adverse effects within the limit of influence around the cut-and-cover excavations.</p>	D	C		VTA /C	IC	This mitigation measure has been incorporated into the Volume 01 Division 01 Specifications.
Geology, Soils, and Seismicity/ Implement Preconstruction Condition Surveys for Utilities	97	-MMRP- GEO- CNST-E	-	Vol-1, ROD	<p>Implement Preconstruction Condition Surveys for Utilities: The contractor will conduct preconstruction condition surveys of utilities deemed to be potentially at risk due to surface settlement or ground movement at BART Extension and TOJD sites. The contractor will monitor major utilities deemed to be at risk during construction and will coordinate with utility providers prior to installation of utility monitoring points.</p>	D	C		VTA /C	IC	This mitigation measure has been incorporated into the Volume 01 Division 01 Specifications.

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										Status Updates/Notes	
Geology, Soils, and Seismicity/ Minimize Excavation Bottom Failure Impacts	98	-MMRP-GEO-CNST-F	-	Vol-1, ROD	<p>Minimize Excavation Bottom Failure Impacts: If excavation bottom fails due to bottom heave, piping, or blow-out, the contractor will implement the following measures.</p> <ul style="list-style-type: none"> Remove water found in the pervious sand layer via dewatering. Install deep sheeting. The sheet pile may also function as a cut-off to prevent sand boiling at the bottom of excavation due to excessive hydrostatic pressure within the loose soils. Based on the boring data, encountering of the loose soils at the foundation subgrade may be anticipated at isolated locations for excavation of the stations. Deeper shoring may be required to penetrate through the aquifer to prevent the occurrence of the sand boiling condition. Deep soil mixing may have to be considered under this condition if drivability of the shoring sheet pile through the dense to very dense sand at depths is a geotechnical concern due to the vibration and/or noise impact on the surrounding environment. 	D	C	P	VTA /C	IC	This mitigation measure has been incorporated into the Volume 01 Division 01 Specifications.
Geology, Soils, and Seismicity/ Minimize Disturbance of Sensitive Deposits at the Excavation Subgrade	99	-MMRP-GEO-CNST-G	-	Vol-1, ROD	<p>Minimize Disturbance of Sensitive Deposits at the Excavation Subgrade: In areas where clay and saturated sand deposits are sufficiently disturbed during construction activities at the bottom of an excavation and soft and loose saturated soil deposits are encountered, VTA will ensure that the contractor constructs a working platform as described below.</p> <ul style="list-style-type: none"> Over-excavate 18 inches below the native subgrade. Place a stabilizing geotextile fabric or a geogrid at the bottom of the over-excavation. Backfill the over-excavation with Class 2 Aggregate Base, Structural Backfill, or other bridging material. Overlap the ends of the geotextile fabric on top of the bridging material for a minimum distance of 2 feet. 		C		VTA /C	IC	This mitigation measure has been incorporated into the Volume 01 Division 01 Specifications.

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	Chrono #	Measure #			Timeframe: Design (D)	Timeframe: Construction (C)	Timeframe: Post-construction (P)	Responsible Party	Compliance Status	Q1,Q2	
										Status Updates/Notes	
Geology, Soils, and Seismicity/ Incorporate Design Specifications to Minimize Effects from Expansive Soils	100	-MMRP-GEO-CNST-H	-	Vol-1, ROD	<p>Incorporate Design Specifications to Minimize Effects from Expansive Soils: VTA will ensure that the following specifications are incorporated into the BART Extension’s final design when encountering expansive soils.</p> <ul style="list-style-type: none"> • Deepen foundations to below the zone of moisture fluctuation. • Use mat foundations that are designed to resist the deflections associated with expansive soil. • Design perimeter footings to a minimum depth of 24 inches below the lowest adjacent grade to reduce the impact from the uplift pressure in expansive soils. • For any expansive soil in the upper 18 inches of building pads, lime treat or replace with low to non-expansive soil with a Plasticity Index of 12 or less. • Use moisture barriers to minimize the variation of change in the moisture content within the expansive soil. 	D	C		VTA /C	IC	This mitigation measure has been incorporated into the Volume 01 Division 01 Specifications.
Geology, Soils, and Seismicity/ Stop Construction if Paleontological Resources are Discovered and Determine Appropriate Action	101	-MMRP-GEO-CNST-I	-	Vol-1, ROD	<p>Stop Construction if Paleontological Resources are Discovered and Determine Appropriate Action: If suspected paleontological resources are encountered during grading and site preparation activities, the contractor will halt all work in the immediate vicinity of the find until a qualified paleontologist can evaluate the find and make recommendations. Paleontological resource materials may include resources such as fossils, plant impressions, or animal tracks preserved in rock. If the qualified paleontologist determines that the discovery represents a potentially significant paleontological resource, additional investigations and fossil recovery may be required to mitigate adverse impacts from implementation of the BART Extension. Construction will not resume until the resource-appropriate measures are recommended or the materials are determined to be not significant.</p>	D	C		VTA /C	IC	This mitigation measure has been incorporated into the Volume 01 Division 01 Specifications.
Greenhouse Gas Emissions/ Implement Energy Efficiency Measures (for TOJD)	102	-MMRP-GHG-A	-	Vol-1, ROD	<p>Implement Energy Efficiency Measures (for TOJD): TOJD energy efficiency shall be 15 percent better than the 2013 Title 24, Part 11 requirements or shall meet the Title 24, Part 11 requirements that are applicable at the time of issuance of the building permits for individual phases, whichever is more stringent.</p>		C		VTA /C	IC	-

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	Chrono #	Measure #				Timeframe: Design (D)	Timeframe: Construction (C)	Timeframe: Post-construction (P)	Responsible Party	Compliance Status	Q1, Q2
											Status Updates/Notes
Greenhouse Gas Emissions/ Participate in Food Waste Programs (for TOJD)	103	-MMRP-GHG-B	-	Vol-1, ROD	Participate in Food Waste Programs (for TOJD): Restaurants shall be required to participate 100 percent in any extant City food waste programs. This mitigation measure shall be included as a mandatory performance standard for all agreements with developers of the TOJDs.			P	VTA /C	IC	-
Greenhouse Gas Emissions/ Utilize Electrical Landscaping Equipment (for TOJD)	104	-MMRP-GHG-C	-	Vol-1, ROD	Utilize Electrical Landscaping Equipment (for TOJD): TOJDs shall include installation of electrical outlets near all maintained landscaping areas to allow for the use of electrical landscaping equipment. This mitigation measure shall be included as a mandatory performance standard for all agreements with developers of the TOJDs.	D			VTA /C	IC	-
Greenhouse Gas Emissions/ Provide Preferential Parking for Electric Vehicles (for TOJD)	105	-MMRP-GHG-	D-01	Vol-1, ROD	Provide Preferential Parking for Electric Vehicles (for TOJD): TOJDs shall provide preferential parking in all parking lots for electric vehicles and shall also provide charging equipment, as follows (MMRP-GHG-D-02 through D-03). This mitigation measure shall be included as a mandatory performance standard for all agreements with developers of the TOJDs.	D			VTA /C	IC	-
Greenhouse Gas Emissions/ Provide Preferential Parking for Electric Vehicles- TOJD Residential Use	106	-MMRP-GHG-	D-02	Vol-1, ROD	Provide Preferential Parking for Electric Vehicles- TOJD Residential Use: A total of 10 percent of the required parking spaces shall be provided with a listed cabinet, box, or enclosure and connected to a conduit that links the parking spaces to the electrical service in a manner approved by the building and safety official. Of the listed cabinets, boxes, or enclosures provided, 50 percent shall have the necessary electric vehicle supply equipment installed to provide active charging stations that are ready for use by residents. The remainder shall be installed at such time as they are needed for use by residents. Electrical vehicle batteries and charging technology may change substantially over the next 15 years. As such, the local jurisdiction shall have the discretion to modify the specific requirements for this measure over time, provided that 10 percent of the spaces have electrical service and 5 percent have active charging, depending on what the technology at the time requires.	D			VTA /C	IC	-

Env Doc Chapter / Mitigation Topic	MMRP Code		Source Document	Mitigation Measure	Implementation					2021	
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										Status Updates/Notes	
Greenhouse Gas Emissions/ Provide Preferential Parking for Electric Vehicles- TOJD Commercial Use	107	-MMRP-GHG-D	D-03	Vol-1, ROD	Provide Preferential Parking for Electric Vehicles- TOJD Commercial Use: New commercial uses shall provide the electrical service capacity necessary as well as all conduits and related equipment necessary to serve 2 percent of the parking spaces with charging stations. Of these parking spaces, 50 percent shall initially be provided with the equipment necessary to function as online charging stations upon completion of development. The remainder shall be installed at such time as they are needed for use by customers, employees, or other users. Electrical vehicle batteries and charging technology may change substantially over the next 15 years. As such, the local jurisdiction shall have the discretion to modify the specific requirements for this measure over time, provided that 2 percent of the spaces have electrical service and 1 percent have active charging, depending on what the technology at the time requires.	D			VTA /C	IC	-

Env Doc Chapter / Mitigation Topic	MMRP Code		Source Document	Mitigation Measure	Implementation					2021
	Chrono #	Measure #			Timeframe: Design (D)	Timeframe: Construction (C)	Timeframe: Post-construction (P)	Responsible Party	Compliance Status	Q1,Q2
										Status Updates/Notes
Hazardous Materials/ Prepare Remedial Action Plans	108	-MMRP-HAZ-CNST-A	-	Vol-1, ROD	D				IC	<p>In Q1 2021 (Feb), the "Issued for Review" version of CMP and RAP were uploaded in GeoTracker. Plans were also uploaded into GeoTracker.</p> <p>In Q2 2021 (Apr), the fact sheet for both CMP & RAP were issued as part of 30-day public review period. Deadline for public comment was 5/26/2021.</p> <p>VTA received RWQCB approval to proceed with the Amendment for both Projectwide CMP and RAP. The amendment will revise previous soil reuse criteria for unrestricted off and on site reuse, ROW and for encapsulation within VTA ROW, to better align with Project goals. Changes in the amendment will be captured in the "Issued for Use" version of the documents and uploaded into GeoTracker. The "Issued for Use" CMP and RAP will be included as part of Division 1 Volume 1 Specification Section 01 74 25 Contaminant Management.</p>

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										Status Updates/Notes	
Noise and Vibration/ Incorporate FTA Criteria Compliant Construction Noise and Vibration Specifications	109	-MMRP-NV-CNST-A	-	Vol-1, ROD	Incorporate FTA Criteria Compliant Construction Noise and Vibration Specifications: VTA will incorporate a comprehensive construction noise and vibration specification into all construction bid documents requiring compliance with FTA criteria. VTA will emphasize the existence and importance of noise and vibration control specifications at pre-bid and preconstruction conferences.	D	C			IC	This mitigation measure has been incorporated into the Volume 01 Division 01 Specifications.
Noise and Vibration/ Locate Equipment as Far as Feasible from Sensitive Sites	110	-MMRP-NV-CNST-B	-	Vol-1, ROD	Locate Equipment as Far as Feasible from Sensitive Sites: The contractor will locate stationary equipment, such as generators and compressors as far as feasible from noise and vibration sensitive sites, and will acoustically treat such equipment. The contractor will also locate grout batch plants, grout silos, mixers, pumps, diesel pumping equipment, and similar noise and vibration generating equipment as far as feasible from noise sensitive sites, and acoustically treat the same if necessary.		C			IC	This mitigation measure has been incorporated into the Volume 01 Division 01 Specifications.

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										Status Updates/Notes	
Noise and Vibration /Construct Temporary Noise Barriers	111	-MMRP-NV-CNST-C	-	Vol-1, ROD	Construct Temporary Noise Barriers: The contractor will install temporary noise barriers or noise control blankets 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 contractor will place the barrier 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, the contractor may consider retrofitting existing windows and doors with new acoustically rated units for the residential structures.	D	C			IC	This mitigation measure has been incorporated into the Volume 01 Division 01 Specifications.
Noise and Vibration/ Operate Equipment to Minimize Annoying Noise and Vibration	112	-MMRP-NV-CNST-D	-	Vol-1, ROD	Operate Equipment to Minimize Annoying Noise and Vibration: Contractors will implement the following measures: <ul style="list-style-type: none"> • Use electric instead of diesel-powered equipment, hydraulic tools instead of pneumatic impact tools, and electric instead of air- or gasoline-driven saws, where feasible. • Use an augering drill-rig for setting piles in lieu of impact pile drivers, where feasible. • Operate equipment so as to minimize banging, clattering, buzzing, and other annoying types of noises, especially near residential areas during nighttime hours. • Turn off idling equipment, whenever possible. • Line haul truck beds with rubber or sand to reduce noise, if needed and requested by VTA. Line or cover hoppers, conveyor transfer points, storage bins, and chutes with sound-deadening material. • During nighttime and weekends, use strobe warning lights and/or back-up observers during any back-up operations, where permitted by the local jurisdiction. 		C		VTA /C	IC	This mitigation measure has been incorporated into the Volume 01 Division 01 Specifications.

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										Status Updates/Notes
Noise and Vibration/ Route Construction Trucks along Truck Routes Least Disturbing to Residents	113	-MMRP-NV-CNST-E	-	Vol-1, ROD		C		VTA /C	IC	This mitigation measure has been incorporated into the Volume 01 Division 01 Specifications.
Noise and Vibration/ Secure Steel and Concrete Plates over Excavated Holes and Trenches	114	-MMRP-NV-CNST-F	-	Vol-1, ROD		C		VTA /C	IC	This mitigation measure has been incorporated into the Volume 01 Division 01 Specifications.

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Noise and Vibration/ Use Best Available Practices to Reduce Noise and Vibration	115	-MMRP-NV-CNST-G	-	Vol-1, ROD		C		VTA /C	IC	This mitigation measure has been incorporated into the Volume 01 Division 01 Specifications.
Noise and Vibration/ Adhere to Local Jurisdiction Construction Time Periods, to the Extent Feasible	116	-MMRP-NV-CNST-H	-	Vol-1, ROD		C		VTA /C	IC	This mitigation measure has been incorporated into the Volume 01 Division 01 Specifications.

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										Status Updates/Notes	
Noise and Vibration/ Perform Preconstruction Ambient Noise Measurements at All CSAs	117	-MMRP-NV-CNST-I	-	Vol-1, ROD	Perform Preconstruction Ambient Noise Measurements at All CSAs: The contractor will perform preconstruction ambient noise measurements at all construction staging areas, which include the tunnel portals, stations, and mid-tunnel ventilation sites. These measurements will 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 (240 hours).	D			VTA /C	IC	This mitigation measure has been incorporated into the Volume 01 Division 01 Specifications.
Noise and Vibration/ Implement a Construction Noise Control and Monitoring Plan	118	-MMRP-NV-CNST-J	-	Vol-1, ROD	Implement a Construction Noise Control and Monitoring Plan: The contractor will submit a Noise Control and Monitoring Plan to VTA for approval. The plan will be prepared by a qualified acoustical engineer whose qualifications and proposed noise control and monitoring activities will be subject to approval of VTA prior to construction activities. The contractor will update the Noise Control and Monitoring Plan every 3 months and will include all the pertinent information about construction equipment and 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 Control and Monitoring Plan will also outline the monitoring equipment and procedures the contractor will use to perform noise measurements and to identify noise-sensitive receptors in the immediate vicinity of construction operations, including details regarding the noise measurement locations, frequency, and duration of measurements. The contractor will document the results of noise monitoring and submit the documentation to VTA weekly. In the event that levels exceed allowable noise limits, VTA will ensure that contractually required corrective measures consistent with the Noise Control and Monitoring Plan are implemented.	D	C		VTA /C	IC	This mitigation measure has been incorporated into the Volume 01 Division 01 Specifications.

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										Status Updates/Notes	
Noise and Vibration/ Require Minimum Qualifications for the Acoustical Engineer	119	-MMRP-NV-CNST-K	-	Vol-1, ROD	Require Minimum Qualifications for the Acoustical Engineer : The minimum qualifications for the Acoustical Engineer will be a Bachelor of Science or Engineering degree, from a qualified program in engineering or physics offered by an accredited university or college, and 5 years in noise control engineering and construction noise analysis.	D	C		VTA /C	IC	This mitigation measure has been incorporated into the Volume 01 Division 01 Specifications.
Noise and Vibration/ Prohibit Operation of Noise-Generating Equipment Prior to Acceptance of Noise Control and Monitoring Plan	120	-MMRP-NV-CNST-L	-	Vol-1, ROD	Prohibit Operation of Noise-Generating Equipment Prior to Acceptance of Noise Control and Monitoring Plan : The contractor will not operate noise-generating equipment at the construction site prior to acceptance of the Noise Control and Monitoring Plan.		C		VTA /C	IC	This mitigation measure has been incorporated into the Volume 01 Division 01 Specifications.

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										Status Updates/Notes
Noise and Vibration/ Install Long-Term Noise Monitors at CSAs during all Construction Phases	121	-MMRP-NV-CNST-M-01	Vol-1, ROD	<p>Install Long-Term Noise Monitors at CSAs during all Construction Phases: The contractor will install stationary noise monitors at all construction staging areas, which include the tunnel portals, stations, and mid-tunnel ventilation sites, during all the construction phases. Noise sampling will be performed continuously at representative monitoring locations nearest the most sensitive receptor at each location. A minimum of two stationary monitors will be required at the Downtown San Jose Station and Diridon Station locations. The monitoring locations may be moved as the construction work progresses. If required, additional noise monitoring site(s) may be added by the VTA to address any specific situation or concern. At the Alum Rock/28th Street Station and the West Portal staging area, stationary noise monitors will also be initially installed and may be removed if the noise levels are in compliance with the noise limits when the full-production construction activities are closest to the sensitive receptors. All data gathered by the contractor will be continuously available to VTA and submitted weekly to VTA for approval.</p>	D	C		VTA /C	IC	This mitigation measure has been incorporated into the Volume 01 Division 01 Specifications.
Noise and Vibration/ Install Long-Term Noise Monitors at CSAs during all Construction Phases	122	-MMRP-NV-CNST-M-02	Vol-1, ROD	<p>Install Long-Term Noise Monitors at CSAs during all Construction Phases: In addition to these stationary noise monitors, the contractor will conduct 30-minute noise sampling with hand-held monitors weekly at the station sites and at other construction sites, including the ventilation shafts and gap breaker stations, to ensure compliance with the noise criteria.</p> <p>If required, additional noise monitoring site(s) may be added by VTA to address any specific situation or concern. The contractor will submit noise data to VTA for approval on a weekly basis, and will include details on location and type of construction activity and details, photographs, and sketches of noise monitoring locations. A qualified acoustical engineer will determine whether work was within thresholds or not, and indicate any steps taken during monitoring to lower noise levels to within limits.</p>	D	C		VTA /C	IC	This mitigation measure has been incorporated into the Volume 01 Division 01 Specifications.

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Noise and Vibration/ Ensure Equipment is Pre-certified to Meet Noise Limits	123	-MMRP-NV-CNST-N	-	Vol-1, ROD	Ensure Equipment is Pre-certified to Meet Noise Limits: For major equipment to be used at the surface of the construction site for a total duration greater than 5 days, the contractor will ensure that the equipment is pre-certified by the acoustical engineer during field measurements at a test site or guaranteed by the equipment vendor to meet the noise limits developed for construction equipment as shown in Table 5-8. VTA will re-examine and develop the final limits to be applied during the engineering phase, and the contractor will verify these limits during initial and active performance of the work when the equipment arrives on site. The contractor will retest construction equipment at 6-month intervals while in use onsite. Any equipment used during construction may be subject to confirmatory noise level testing while performing the work at the request of VTA.	D	C		VTA /C	IC	This mitigation measure has been incorporated into the Volume 01 Division 01 Specifications.
Noise and Vibration/ Implement a Complaint Resolution Procedure	124	-MMRP-NV-CNST-O	-	Vol-1, ROD	Implement a Complaint Resolution Procedure: The contractor will implement a complaint resolution procedure to rapidly address any noise and vibration problems that may develop during construction. After a complaint is received, the contractor will assign the complaint a case number and will contact the person making the complaint to receive further clarification on the concern. The contractor will then discuss the issue with the construction team to determine the appropriate action to resolve the issue. The contractor will then again contact the person making the complaint to describe how the issue has been resolved.	D	C		VTA /C	IC	This mitigation measure has been incorporated into the Volume 01 Division 01 Specifications.

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Noise and Vibration/ Implement a Construction Vibration Control and Monitoring Plan	125	-MMRP-NV-CNST-P-01	Vol-1, ROD	<p>Implement a Construction Vibration Control and Monitoring Plan: The contractor will be required to submit a Construction Vibration Control and Monitoring Plan to VTA for approval. The plan will be prepared by a qualified Vibration specialist whose qualifications and proposed vibration control and monitoring activities will be subject to approval of VTA prior to construction activities. The Construction Vibration Control and Monitoring Plan will be updated every 3 months and include all the pertinent information about construction equipment and site layout, the projected vibration levels, and the vibration control measures that may be required to comply with the vibration limits as outlined in this measure for each building type.</p> <p>The Construction Vibration Control and Monitoring Plan will also outline the monitoring equipment and procedures the contractor will use to perform vibration measurements for vibration-sensitive receptors in the vicinity of construction operations, including details regarding the vibration measurement locations, frequency, and duration of measurements at each location. The plan will outline the protocol for monitoring existing cracks in buildings over time, to determine any construction-related impacts. At a minimum, crack gauges will be installed on existing cracks prior to construction, and monitoring of the gauges will be performed continuously over the course of construction to assess whether new construction-related damage has occurred. The contractor must obtain approval from VTA and the QP to install any crack gauges on or in historic buildings that require alteration of the building.</p>	D	C		VTA /C	IC	This mitigation measure has been incorporated into the Volume 01 Division 01 Specifications.

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Noise and Vibration/ Implement a Construction Vibration Control and Monitoring Plan	126	-MMRP-NV-CNST-P-02	Vol-1, ROD	<p>Implement a Construction Vibration Control and Monitoring Plan: The results of vibration monitoring will be documented and submitted to VTA weekly. In the event that levels exceed allowable vibration limits, the work will be halted immediately to ensure that no structural damage occurs, and additional required corrective measures consistent with the Construction Vibration Control and Monitoring Plan will be implemented.</p> <p>The contractor will initially conduct vibration monitoring daily at the nearest affected buildings during any construction activities that could induce vibration impacts, typically within 100 feet of any building. Vibration will also be monitored where vibration is expected to approach the applicable limit based on the building type and condition, as determined by VTA in coordination with the structural engineer for non-historic buildings, and VTA and the historic QP for historic buildings. Monitoring of utilities that are sensitive to vibration will be coordinated with the utility companies and performed for the nearest affected vibration-sensitive utilities during any construction activities that could induce vibration impacts.</p>	D	C		VTA /C	IC	This mitigation measure has been incorporated into the Volume 01 Division 01 Specifications.

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Noise and Vibration/ Implement a Construction Vibration Control and Monitoring Plan	127	-MMRP-NV-CNST-P-03	Vol-1, ROD	<p>Implement a Construction Vibration Control and Monitoring Plan: The contractor will perform monitoring continuously at the closest receptor during all demolition and construction activities to ensure vibration levels will not exceed the FTA construction vibration damage criteria for applicable building type, as follows: 0.12 peak particle velocity (PPV) (inches/second) for buildings that are extremely susceptible to vibration damage, 0.2 PPV (inches/second) for non-engineered timber and masonry buildings, 0.3 PPV (inches/second) for engineered concrete and masonry (no plaster) buildings and 0.5 PPV (inches/second) for reinforced-concrete, steel or timber (no plaster) buildings.</p> <p>For historic buildings, the vibration threshold will likely be between 0.12 to 0.2 PPV (inches/second) depending on the buildings' condition. The results of the preconstruction surveys and building Conditions Assessment Report as outlined in Mitigation Measure NV-CNST-R will be utilized to confirm the structure types and determine which vibration thresholds apply in consultation with a qualified structural engineer and the historic QP.</p> <p>For utilities, vibration thresholds will follow industry standards in coordination with utility companies, and typically adhere to a 0.5 PPV (inches/second) threshold.</p>	D	C		VTA /C	IC	This mitigation measure has been incorporated into the Volume 01 Division 01 Specifications.

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Noise and Vibration/ Implement a Construction Vibration Control and Monitoring Plan	128	-MMRP-NV-CNST-P-04	Vol-1, ROD	<p>Implement a Construction Vibration Control and Monitoring Plan: The contractor will measure vibration in buildings in the vertical direction on the ground surface or building floor and for utilities in accordance with meter instructions and industry best practices. Vibration levels will be measured continuously during daily construction operations to ensure that peak vibration-generating work is captured. Daily monitoring will be performed during a continuous work shift (typically 8 hours) that includes the closest and most vibration-inducing work. The contractor will compare vibration in buildings against both structural damage and nuisance thresholds in terms of velocity levels in dB or PPV. Vibration for utilities will be compared against structural damage thresholds in terms of PPV. If the measured vibration data are in compliance with the vibration limits after work has completed start-up and entered full-production mode (typically within 2 weeks to 30 days), vibration monitoring may be performed once a week instead of continuously each day if approved by VTA.</p> <p>For non-historic structures, if construction vibration exceeds the structural or nuisance threshold, the contractor must stop construction and adjust construction methods to meet appropriate vibration limits so that the threshold is not exceeded again.</p>	D	C		VTA /C	IC	This mitigation measure has been incorporated into the Volume 01 Division 01 Specifications.
Noise and Vibration/ Implement a Construction Vibration Control and Monitoring Plan- Historic structures	129	-MMRP-NV-CNST-P-05	Vol-1, ROD	<p>Implement a Construction Vibration Control and Monitoring Plan- Historic structures: For historic structures, if construction vibration approaches the structural damage threshold, the historic QP will be notified immediately, in real time. If construction vibration exceeds the structural damage threshold, Contractor must notify the historic QP and VTA immediately, in real time, and stop all vibration-inducing construction work immediately to adjust methods. The contractor will adjust work methods and techniques to meet appropriate vibration limits so that the threshold is not exceeded again before work is restarted.</p> <p>In the event of inadvertent, construction-related damage to historic buildings, repairs will be conducted in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties and consistent with 36 CFR 800.13(b). VTA and the historic QP will implement these repairs in consultation with FTA and SHPO.</p>	D	C		VTA /C	IC	This mitigation measure has been incorporated into the Volume 01 Division 01 Specifications.

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										Status Updates/Notes
Noise and Vibration/ Perform Vertical Direction Vibration Monitoring	130	-MMRP-NV-CNST-Q	-	Vol-1, ROD		C		VTA /C	IC	This mitigation measure has been incorporated into the Volume 01 Division 01 Specifications.
Noise and Vibration/ Implement Preconstruction and Post-Construction Building Condition Surveys for Vibration	131	-MMRP-NV-CNST-	R-01	Vol-1, ROD	D	C	P	VTA /C	IC	This mitigation measure has been incorporated into the Volume 01 Division 01 Specifications.

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	Chrono #	Measure #			Timeframe: Design (D)	Timeframe: Construction (C)	Timeframe: Post-construction (P)	Responsible Party	Compliance Status	Q1,Q2	
										Status Updates/Notes	
Noise and Vibration/ Implement Preconstruction and Post-Construction Building Condition Surveys for Vibration- Historic Buildings	132	-MMRP-NV-CNST-	R-02	Vol-1, ROD	<p>Implement Preconstruction and Post-Construction Building Condition Surveys for Vibration- Historic Buildings: For historic structures, the Condition Assessment Report in accordance with Section 106 will be prepared along with the preconstruction building condition surveys. The surveys will be performed prior to any vibration-inducing construction to establish baseline building conditions. The results of the preconstruction surveys will be utilized to establish the structure types and determine which vibration thresholds apply in consultation with a qualified structural engineer and a qualified architectural historian or a historic architect, as outlined in Mitigation Measure NV-CNST-P.</p> <p>Surveys will be conducted in all historic buildings or structures where vibration is expected to approach the applicable limit, and in non-historic buildings based on the building type and condition. VTA will determine the list of historic structures that may be affected by the project in consultation with a qualified structural engineer and the historic QP.</p> <p>Vibration will be monitored as required in Mitigation Measure NV-CNST-P to avoid adverse effects on properties during construction activities. The post-construction survey results will be compared with preconstruction condition surveys so that any construction vibration effects on structures can be assessed. For historic structures, a Condition Assessment Report in accordance with Section 106, will be conducted after construction is complete. In the event of inadvertent, construction-related damage to historic buildings, repairs will be conducted in accordance with the Secretary of the Interior’s Standards for the Treatment of Historic Properties and consistent with 36 CFR 800.13(b). VTA and the historic QP will implement these repairs in consultation with FTA and SHPO.</p>	D	C	P	VTA /C	IC	This mitigation measure has been incorporated into the Volume 01 Division 01 Specifications.

Env Doc Chapter / Mitigation Topic	MMRP Code		Source Document	Mitigation Measure	Implementation					2021
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										Status Updates/Notes
Noise and Vibration/ Implement Measures to Reduce Vibration from Muck Extraction and Supply Trains	133	-MMRP-NV-CNSTS	-	Vol-1, ROD		C			IC	This mitigation measure has been incorporated into the Volume 01 Division 01 Specifications.
Noise and Vibration/ Implement Noise Reduction Treatments at Ancillary Facilities	134	-MMRP-NV-A	-	Vol-1, ROD		C		VTA /C	IC	This mitigation measure has been incorporated into the BSVII Project Design Criteria Manual in preparation for RFP issuance.
Noise and Vibration/ Reduce Groundborne Noise Levels	135	-MMRP-NV-B	-	Vol-1, ROD		C		VTA /C	IC	This mitigation measure has been incorporated into the BSVII Project Design Criteria Manual in preparation for RFP issuance.

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										Status Updates/Notes	
Utilities/ Prepare a San Jose Water Supply Infrastructure Capacity Assessment and Participate in the Improvements	136	-MMRP-UTIL-A	-	Vol-1, ROD	<p>Prepare a San Jose Water Supply Infrastructure Capacity Assessment and Participate in the Improvements: VTA will coordinate with San Jose Water Company (SJWC) and prepare a Cooperative Agreement to establish the BART Extension Alternative’s participation in improvements to offsite water supply infrastructure. The SJWC may conduct a detailed engineering study and flow analysis to determine the extent of these impacts.</p> <p>The contractor will implement capacity-relief upgrades during the utility relocation phase of construction in accordance with SJWC requirements. The contractor will ensure that all construction activities follow the provisions outlined in this environmental document, including implementation of Mitigation Measure TRA-CNST-A to reduce potential impacts and increase participation.</p>	D		P	VTA	IC	-
Utilities/ Prepare a Santa Clara Water Supply Infrastructure Capacity Assessment and Participate in the Improvements	137	-MMRP-UTIL-B	-	Vol-1, ROD	<p>Prepare a Santa Clara Water Supply Infrastructure Capacity Assessment and Participate in the Improvements: VTA will coordinate with the City of Santa Clara Water and Sewer Utility (SCWSU) and prepare a Cooperative Agreement to establish the BART Extension Alternative’s participation in improvements to offsite water supply infrastructure. The SCWSU may conduct a detailed engineering study and flow analysis to determine the extent of these impacts and participation.</p> <p>The contractor will implement capacity-relief upgrades during the utility relocation phase of construction in accordance with Chapter 17.15.210 of the Santa Clara City Code. The contractor will ensure that all construction activities follow the provisions outlined in this environmental document, including implementation of the construction education and outreach plan, to reduce potential impacts.</p>	D		P	VTA	IC	-

Env Doc Chapter / Mitigation Topic	MMRP Code		Source Document	Mitigation Measure	Implementation					2021
	Chrono #	Measure #			Timeframe: Design (D)	Timeframe: Construction (C)	Timeframe: Post-construction (P)	Responsible Party	Compliance Status	Q1,Q2
										Status Updates/Notes
Utilities/ Prepare a San Jose Sewer Capacity Assessment and Participate in the Improvements	138	-MMRP-UTIL-C	-	Vol-1, ROD	<p>Prepare a San Jose Sewer Capacity Assessment and Participate in the Improvements: VTA will coordinate with the San Jose Department of Public Works (SJPW) to prepare a Cooperative Agreement to establish the BART Extension Alternative’s participation in improvements to offsite sanitary sewer capacity deficiencies. SJPW may conduct a detailed engineering study and hydraulic analysis to determine the extent of these impacts. VTA will mitigate impacts on downstream sewer systems in San Jose through payment of the Sanitary Sewer Connection Fee, as required, which is used to rehabilitate and enhance sewer capacity through San Jose’s Sanitary Sewer Capital Improvement Program. If payment to the Sanitary Sewer Connection Fee does not adequately mitigate potential offsite sewer capacity impacts related to the BART Extension, VTA will be responsible for direct upgrades to the sewer system. If sewer system overcapacity is a result of projected cumulative development, San Jose and VTA will develop a Cooperative Agreement to determine the BART Extension Alternative’s participation in upgrades to the current system. The contractor will implement capacity-relief upgrades during the BART Extension’s construction phase in accordance with applicable San Jose standards regarding sewer infrastructure improvements. Generally, the contractor will locate sewer infrastructure improvements within the existing public right-of-way, with minimal potential to impact sensitive environmental resources. The contractor will ensure that construction activities follow the provisions outlined in this environmental document, including implementation of the construction education and outreach plan, to reduce potential impacts.</p>	D	P	VTA	IC	-

Env Doc Chapter / Mitigation Topic	MMRP Code		Source Document	Mitigation Measure	Implementation					2021
	Chrono #	Measure #			Timeframe: Design (D)	Timeframe: Construction (C)	Timeframe: Post-construction (P)	Responsible Party	Compliance Status	Q1,Q2
										Status Updates/Notes
Utilities/ Prepare a Santa Clara Sewer Capacity Assessment and Participate in the Improvements	139	-MMRP-UTIL-D	-	Vol-1, ROD	<p>Prepare a Santa Clara Sewer Capacity Assessment and Participate in the Improvements: VTA will coordinate with SCWSU to prepare a Cooperative Agreement to establish the BART Extension Alternative’s participation in improvements to offsite sanitary sewer capacity deficiencies. SCWSU may conduct a detailed engineering study and hydraulic analysis to determine the extent of these impacts.</p> <p>VTA will mitigate impacts on downstream sewer systems in Santa Clara through payment of the Sanitary Sewer Connection Charge, as required, which is used to rehabilitate and enhance sewer capacity through Santa Clara’s Capital Improvement Program. If payment to the Sanitary Sewer Connection Charge does not adequately mitigate potential offsite sewer capacity impacts related to the BART Extension, VTA will be responsible for direct upgrades to the sewer system. If sewer system overcapacity is a result of cumulative development, Santa Clara and VTA will develop a Cooperative Agreement to determine the BART Extension Alternative’s proportional participation to the upgrades to current system capacity.</p> <p>The contractor will implement capacity-relief upgrades improvements during the BART Extension’s construction phase in accordance with Chapter 17.15.210-280 of the Santa Clara City Code. Generally, the contractor will locate sewer infrastructure improvements within the existing public right-of-way, with minimal potential to impact sensitive environmental resources. The contractor will ensure that construction activities follow the provisions outlined in this environmental document, including implementation of the construction education and outreach plan, to reduce potential impacts.</p>	D	P	VTA	IC	-

Env Doc Chapter / Mitigation Topic	MMRP Code		Source Document	Mitigation Measure	Implementation					2021
	Chrono #	Measure #			Timeframe: Design (D)	Timeframe: Construction (C)	Timeframe: Post-construction (P)	Responsible Party	Compliance Status	Q1,Q2
										Status Updates/Notes
Visual Quality and Aesthetics/ Replace Trees	140	-MMRP-AES-CNST-A	-	Vol-1, ROD	D	C		VTA /C	IC	<p>In June 2021, VTA performed a tree inventory, for trees to be removed and replaced at the potential sites for the 28th St, Downtown, Diridon, and Santa Clara station and Newhall Yard.</p> <p>This estimate will be confirmed by the Progressive Design-Build and Design-Build Contractors in the four Contract Packages.</p>

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	Chrono #	Measure #			Timeframe: Design (D)	Timeframe: Construction (C)	Timeframe: Post-construction (P)	Party Responsible	Compliance Status	Q1,Q2	
										Status Updates/Notes	
Visual Quality and Aesthetics/ Minimize Light and Glare (for TOJD)	141	-MMRP-AES-A	-	Vol-1, ROD	Minimize Light and Glare (for TOJD): For the TOJDs, the contractor will install low-profile, low-intensity outdoor lighting directed downward to minimize light and glare where feasible. The contractor will also install shielded fixtures for street and pedestrian lighting to minimize glare.	D	C			IC	-
Water Resources, Water Quality, and Floodplains/ Design and Implement Stormwater Control Measures	142	-MMRP-WQ-A	-	Vol-1, ROD	Design and Implement Stormwater Control Measures: The BART Extension will be designed in accordance with the Phase II MS4 Permit, Section F.5.g, for post-construction stormwater management. Post-construction stormwater controls shall be implemented to reduce total runoff rates and associated pollutant discharges. VTA managed facilities will follow the VTA's Stormwater and Landscaping Design Criteria Manual. After designs are finalized, a Stormwater Management Report, including detailed hydrologic and hydraulic calculations, analysis, and conclusions, shall be prepared to document the final design for stormwater management and the storm drain system and for obtaining the requisite approvals, and will outline all required Operation and Maintenance needs recommended by the designer for the post-construction stormwater management facilities.	D	C	P	VTA /C	IC	VTA incorporated this mitigation measure into the Volume 01 Division 01 Specifications.