



**BSV Phase II - Environmental Commitments Record
Mitigation Monitoring & Reporting Program**

Env Doc Chapter / Mitigation Topic	Environmental Document Chapter	Mitigation Topic	MMRP Code		Source Document	Summary	Mitigation Measure	Location	Implementation					Quarter Mitigation Completed		
			Chrono #	Measure #					Timeframe: Design (D)	Timeframe: Construction (C)	Timeframe: Post-construction (P)	Responsible Party	Compliance Status		2024	
															Q1	
Transportation/ Develop and Implement a Construction Transportation Management Plan	Transportation	Develop Construction Transportation Management Plan (CTMP)	19	MMRP-TRA-CNST-02	Vol-1, ROD	Develop Individual Traffic Control Plans (TCPs)	Program-wide	D	C		VTA	IC	No TCPs were required for the construction work occurring at the West Portal Site as part of the CP2 CTMP1 in Q1 2024. Additional TCPs will be developed following the finalization of the contract specific CTMPs.			
Transportation/ Develop and Implement a Construction Transportation Management Plan	Transportation	Develop Construction Transportation Management Plan (CTMP)	20	MMRP-TRA-CNST-03	Vol-1, ROD	Include Site-Specific Requirements in Traffic Control Plans (TCPs) <ul style="list-style-type: none"> • 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. 	Program-wide	D	C		VTA	IC	No TCPs were required for the construction work occurring at the West Portal Site as part of the CP2 CTMP1 in Q1 2024. Additional TCPs will be developed following the finalization of the contract specific CTMPs.			



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Transportation / Implement an Emergency Services Coordination Plan (ESCP)	Transportation	Implement an Emergency Services Coordination Plan (ESCP)	21	- MMRP-TRA-CNST-C	-	Vol-1, ROD	Implement an Emergency Services Coordination Plan (ESCP) 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. Critical components of coordination are as follows. <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. 	Program-wide	D	C		VTA	IC	A cooperative agreement has been created between VTA and the Cities of San Jose and Santa Clara, and an ESCP will be created prior to construction. Adjustments to the ESCP will be implemented should they arise throughout the duration of construction. Outreach notices are kept in the VTA Salesforce program and can be provided if requested.	
Transportation / Provide Temporary Replacement Parking at Diridon Station NEPA ONLY MITIGATION MEASURE	Transportation	Provide Temporary Replacement Parking at Diridon Station NEPA ONLY MITIGATION MEASURE	22	- MMRP-TRA-CNST-D	-	Vol-1, ROD	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.	Diridon Station		C		VTA	IC	Construction of the parking garage continues to progress and expected to be completed in Q3 2024 . Operational date will be determined based on when the Diridon Construction Staging Area (CSA) will be activated.	



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Mitigation Monitoring & Reporting Program**

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																Q1
Transportation/ Implement Intersection Improvements at Coleman Avenue and Brokaw Road (for TOJD)	Transportation	Implement Intersection Improvements at Coleman Avenue and Brokaw Road (for TOJD)	23	- MMRP-TRA-A	-	Vol-1, ROD	Improve Intersection at Coleman Ave. & Brokaw Rd.	TOJD; Santa Clara		C		VTA	IC	TOD is not included in CP1 through CP4. Once TOD contracts are underway these measures will be addressed.		
Transportation/ Implement Intersection Improvements at Lafayette Street and Lewis Street (for TOJD)	Transportation	Implement Intersection Improvements at Lafayette Street and Lewis Street (for TOJD)	24	- MMRP-TRA-B	-	Vol-1, ROD	Improve Intersection at Lafayette St. & Lewis St.	TOJD; Santa Clara		C	P	VTA	IC	TOD is not included in CP1 through CP4. Once TOD contracts are underway these measures will be addressed.		
Transportation/ Implement Intersection Improvements at the Intersection of Coleman Avenue and I880 Southbound Ramps (for TOJD)	Transportation	Implement Intersection Improvements at the Intersection of Coleman Avenue and I880 Southbound Ramps (for TOJD)	25	- MMRP-TRA-C	-	Vol-1, ROD	Improve Intersection at Coleman Ave. & I880 Southbound Ramps	TOJD; Santa Clara		C	P	VTA	IC	TOD is not included in CP1 through CP4. Once TOD contracts are underway these measures will be addressed.		
Air Quality/ Implement Dust Control Measures	Air Quality	Implement Dust Control Measures	26	- MMRP-AQ-CNST-	A-01	Vol-1, ROD	Implement Dust Control Measures per Bay Area Air Quality Management District (BAAQMD)	Program-wide		C		VTA/C	IC	This is a summary measure, and has been applied as shown in the mitigation measures MMRP-AQ-CNST-A-02 through A-15 below.		
Air Quality/ Implement Dust Control Measures	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.	Program-wide		C		VTA/C	IC	The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (P&E) packages. For CP-2 Tunnel and Trackwork: No construction activities took place in Q1 2024. This measure will be applied in future quarters as necessary.		



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Air Quality/ Implement Dust Control Measures	Air Quality	Implement Dust Control Measures	28	MMRP-AQ-CNST-03	Vol-1, ROD	Maintain Soil Moisture Content	Program-wide	C	VTA/C	IC	<p>The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (PS&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: No construction activities took place in Q1 2024. This measure will be applied in future quarters as necessary.</p>				
Air Quality/ Implement Dust Control Measures	Air Quality	Implement Dust Control Measures	29	MMRP-AQ-CNST-04	Vol-1, ROD	Cover or Moisten Haul Trucks	Program-wide	C	VTA/C	IC	<p>The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (PS&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: No construction activities took place in Q1 2024. This measure will be applied in future quarters as necessary.</p>				
Air Quality/ Implement Dust Control Measures	Air Quality	Implement Dust Control Measures	30	MMRP-AQ-CNST-05	Vol-1, ROD	Use Wet Power Vacuum Street Sweepers	Program-wide	C	VTA/C	IC	<p>The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (PS&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: No construction activities took place in Q1 2024. This measure will be applied in future quarters as necessary.</p>				
Air Quality/ Implement Dust Control Measures	Air Quality	Implement Dust Control Measures	31	MMRP-AQ-CNST-06	Vol-1, ROD	Limit Vehicle Speed	Program-wide	C	VTA/C	IC	<p>The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (PS&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: No unpaved roads were utilized in Q1 2024. Therefore, this measure will be implemented in future quarters.</p>				
Air Quality/ Implement Dust Control Measures	Air Quality	Implement Dust Control Measures	32	MMRP-AQ-CNST-07	Vol-1, ROD	Complete Paving ASAP	Program-wide	C	VTA/C	IC	<p>The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (PS&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: There were no paving operations in Q1 2024. Therefore this measure will be implemented in future quarters.</p>				
Air Quality/ Implement Dust Control Measures	Air Quality	Implement Dust Control Measures	33	MMRP-AQ-CNST-08	Vol-1, ROD	Post Signage Regarding Dust Complaints	Program-wide	C	VTA/C	IC	<p>The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (PS&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: No publicity visible signs have been posted as no construction activities took place in Q1 2024. This measure will be applied in future quarters as necessary.</p>				



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Air Quality/ Implement Dust Control Measures	Air Quality	Implement Dust Control Measures	34	- MMRP-AQ- CNST-09	Vol-1, ROD	Suspend Earth Moving Activities When Windy	Implement Dust Control Measures: The contractor will suspend all excavation, grading, and/or demolition activities when average wind speeds exceed 20 mph.	Program-wide	C		VTA/C	IC	<p>The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (P&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: No construction activities took place in Q1 2024. This measure will be applied in future quarters as necessary.</p>		
Air Quality/ Implement Dust Control Measures	Air Quality	Implement Dust Control Measures	35	- MMRP-AQ- CNST-10	Vol-1, ROD	Install Windbreaks	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.	Program-wide	C		VTA/C	IC	<p>The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (P&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: No construction activities took place in Q1 2024. This measure will be applied in future quarters as necessary.</p>		
Air Quality/ Implement Dust Control Measures	Air Quality	Implement Dust Control Measures	36	- MMRP-AQ- CNST-11	Vol-1, ROD	Plant Vegetation ASAP	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.	Program-wide	C		VTA/C	IC	<p>The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (P&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: No construction activities took place in Q1 2024. This measure will be applied in future quarters as necessary.</p>		



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Air Quality/ Implement Dust Control Measures	Air Quality	Implement Dust Control Measures	37	- MMRP-AQ- CNST- A-12	Vol-1, ROD	Phase Ground-Disturbing Activities	Program-wide	C	VTA/C	IC	<p>The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (P&S&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: No construction activities took place in Q1 2024. This measure will be applied in future quarters as necessary.</p>				
Air Quality/ Implement Dust Control Measures	Air Quality	Implement Dust Control Measures	38	- MMRP-AQ- CNST- A-13	Vol-1, ROD	Use Construction Entrances/Exits	Program-wide	C	VTA/C	IC	<p>The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (P&S&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: No construction activities took place in Q1 2024. This measure will be applied in future quarters as necessary.</p>				
Air Quality/ Implement Dust Control Measures	Air Quality	Implement Dust Control Measures	39	- MMRP-AQ- CNST- A-14	Vol-1, ROD	Install Sediment and Erosion Control Devices	Program-wide	C	VTA/C	IC	<p>The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (P&S&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: Sediment and erosion controls are included in the Programmatic SWPPP and site-specific West Tunnel Portal SWPPP that were submitted in Q1 2024. No construction activities took place in Q1 2024, therefore no erosion or sediment controls were installed. This measure will be applied in future quarters as necessary.</p>				



BSV Phase II - Environmental Commitments Record
Mitigation Monitoring & Reporting Program

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															Q1
Air Quality/ Implement Dust Control Measures	Air Quality	Implement Dust Control Measures	40	- MMRP-AQ- CNST-15	Vol-1, ROD	Control Dust During Operation of Concrete Batch Plants	<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. 	Program-wide		C		VTA/C	IC	<p>The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (P&S&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: For Q1 2024, construction or operation of concrete batch plants has not commenced, therefore this measure will be implemented in future quarters.</p>	
Air Quality/ Use U.S. Environmental Protection Agency (EPA) Tier 4 or cleaner engines	Air Quality	Use U.S. Environmental Protection Agency (EPA) Tier 4 or cleaner engines	41	- MMRP-AQ- CNST-B	Vol-1, ROD	Use U.S. Environmental Protection Agency (EPA) Tier 4 or Cleaner Engines	<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>	Program-wide		C		VTA/C	IC	<p>The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (P&S&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: This mitigation measure was included in the CP2 Conformed set under Vol 1 General Requirements, Section 01 57 00 Temporary Controls. No construction activities took place in Q1 2024. This measure will be enforced during heavy construction activities.</p>	
Air Quality/ Maintain Construction Equipment	Air Quality	Maintain Construction Equipment	42	- MMRP-AQ- CNST-C	Vol-1, ROD	Maintain Construction Equipment	<p>Maintain Construction Equipment: The contractor will maintain and properly tune all construction equipment in accordance with the manufacturer's specifications. A certified mechanic will check all equipment to determine proper running condition prior to operation.</p>	Program-wide		C		VTA/C	IC	<p>The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (P&S&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: No construction activities took place in Q1 2024. This measure will be applied in future quarters as necessary.</p>	



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Air Quality/ Minimize Idling Times	Air Quality	Minimize Idling Times	43	- MMRP- AQ- CNST- D	-	Vol-1, ROD	Minimize Idling Times	Program-wide	C		VTA/C	IC	<p>The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (P&S&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: No construction activities took place in Q1 2024. This measure will be applied in future quarters as necessary.</p>		
Air Quality/ Use Equipment Meeting ARB Certification Standards	Air Quality	Use Equipment Meeting ARB Certification Standards	44	- MMRP- AQ- CNST-E	-	Vol-1, ROD	Use Equipment Meeting Air Resources Board (ARB) Certification Standards	Program-wide	C		VTA/C	IC	<p>The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (P&S&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: No construction activities took place in Q1 2024. This measure will be applied in future quarters as necessary.</p>		
Air Quality/ Ensure Heavy-Duty Diesel Trucks Will Comply with EPA Emissions Standards	Air Quality	Ensure Heavy-Duty Diesel Trucks Will Comply with EPA Emissions Standards	45	- MMRP- AQ- CNST-F	-	Vol-1, ROD	Ensure Diesel Trucks Comply with U.S. Environmental Protection Agency (EPA) Emissions Standards	Program-wide	C		VTA/C	IC	<p>The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (P&S&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: No construction activities took place in Q1 2024. This measure will be applied in future quarters as necessary.</p>		



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Mitigation Monitoring & Reporting Program**

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Air Quality/ Use Low-Sulfur Fuel	Air Quality	Use Low-Sulfur Fuel	46	- MMRP- AQ- CNST- G	- Vol-1, ROD	Use Low-Sulfur Fuel	Program-wide	C		VTA/C	IC	<p>The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (PS&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: No construction activities took place in Q1 2024. This measure will be applied in future quarters as necessary.</p>			
Air Quality/ Locate Construction Areas Away from Sensitive Receptors	Air Quality	Locate Construction Areas Away from Sensitive Receptors	47	- MMRP- AQ- CNST- H	- Vol-1, ROD	Locate Construction Away from Sensitive Receptors	Program-wide	C		VTA/C	IC	<p>The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (PS&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: No construction activities took place in Q1 2024. This measure will be applied in future quarters as necessary.</p>			
Air Quality/ Use Low-Volatile Organic Compound (VOC) Coatings	Air Quality	Use Low-Volatile Organic Compound (VOC) Coatings	48	- MMRP- AQ- CNST-I	- Vol-1, ROD	Use Low-Volatile Organic Compound (VOC) Coatings	Program-wide	C		VTA/C	IC	<p>Use Low-Volatile Organic Compound (VOC) Coatings: All contractors will use low-VOC (i.e., ROG) coatings that are beyond BAAQMD requirements (i.e., Regulation 8, Rule 3: Architectural Coatings [VOC content is limited to 100 grams per liter for flat coating and 150 grams per liter for non-flat coating]).</p> <p>The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (PS&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: This mitigation measure was included in the CP2 Conformed set under Vol 1 General Requirements, Section 01 35 74 Sustainability Requirements and Section 01 57 00 Temporary Controls.</p> <p>No construction activities took place in Q1 2024. This measure will be applied in future quarters as necessary.</p>			



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Mitigation Monitoring & Reporting Program**

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Biological Resources and Wetlands/ Avoid Nesting Bird Season	Biological Resources and Wetlands	Avoid Nesting Bird Season	49	- MMRP-BIO-CNST-A	-	Vol-1, ROD	Avoid Nesting Bird Season	Program-wide		C		VTA/C	IC	<p>The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (PS&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: No construction activities took place in Q1 2024. This measure will be applied in future quarters as necessary.</p>	
Biological Resources and Wetlands/ Conduct Preconstruction/Predisturbance Surveys for Nesting Birds	Biological Resources and Wetlands	Conduct Preconstruction/Predisturbance Surveys for Nesting Birds	50	- MMRP-BIO-CNST-B	-	Vol-1, ROD	Conduct Preconstruction/Predisturbance Surveys for Nesting Birds	Program-wide	D	C		VTA/C	IC	<p>The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (PS&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: No construction activities took place in Q1 2024. This measure will be applied in future quarters as necessary.</p>	
Biological Resources and Wetlands/ Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Trees	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 Bats	Program-wide	D	C		VTA/C	IC	<p>The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (PS&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: No construction activities took place in Q1 2024, therefore no roosting bat surveys were required. This measure will be applied in future quarters as necessary.</p>	



BSV Phase II - Environmental Commitments Record
Mitigation Monitoring & Reporting Program

Env Doc Chapter / Mitigation Topic	Environmental Document Chapter	Mitigation Topic	MMRP Code		Source Document	Summary	Mitigation Measure	Location	Implementation					Quarter Mitigation Completed	
			Chrono #	Measure #					Timeframe: Design (D)	Timeframe: Construction (C)	Timeframe: Post-construction (P)	Responsible Party	Compliance Status		2024
															Q1
Biological Resources and Wetlands/ Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Trees	Biological Resources and Wetlands	Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Trees	52	- MMRP-BIO-CNST	C-02	Vol-1, ROD	No Disturbance to Bat Roosting Trees Between April 1 and September 15	Program-wide	D	C		VTA/C	IC	<p>The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (P&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: No construction activities took place in Q1 2024, therefore no roosting bat surveys were required. This measure will be applied in future quarters as necessary.</p>	
Biological Resources and Wetlands/ Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Trees	Biological Resources and Wetlands	Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Trees	53	- MMRP-BIO-CNST	C-03	Vol-1, ROD	Remove Bat Roosting Trees between September 15 and October 30	Program-wide	D	C		VTA/C	IC	<p>The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (P&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: No construction activities took place in Q1 2024, therefore no roosting bat surveys were required. This measure will be applied in future quarters as necessary.</p>	
Biological Resources and Wetlands/ Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Trees	Biological Resources and Wetlands	Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Trees	54	- MMRP-BIO-CNST	C-04	Vol-1, ROD	Remove Trees in Pieces	Program-wide	D	C		VTA/C	IC	<p>The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (P&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: No construction activities took place in Q1 2024, therefore no roosting bat surveys were required. This measure will be applied in future quarters as necessary.</p>	



BSV Phase II - Environmental Commitments Record
Mitigation Monitoring & Reporting Program

Env Doc Chapter / Mitigation Topic	Environmental Document Chapter	Mitigation Topic	MMRP Code		Source Document	Summary	Mitigation Measure	Location	Implementation					Quarter Mitigation Completed	
			Chrono #	Measure #					Timeframe: Design (D)	Timeframe: Construction (C)	Timeframe: Post-construction (P)	Responsible Party	Compliance Status		2024
															Q1
Biological Resources and Wetlands/ Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Trees	Biological Resources and Wetlands	Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Trees	55	- MMRP-BIO-CNST	C-05	Vol-1, ROD	Ensure Maternity Roost is Undisturbed until September 15	Program-wide	D	C		VTA/C	IC	<p>The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (P&S&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: No construction activities took place in Q1 2024, therefore no roostin bat surveys were required. This measure will be applied in future quarters as necessary.</p>	
Biological Resources and Wetlands/ Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Trees	Biological Resources and Wetlands	Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Trees	56	- MMRP-BIO-CNST	C-06	Vol-1, ROD	Biologists to Monitor Tree Removal	Program-wide	D	C		VTA/C	IC	<p>The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (P&S&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: No construction activities took place in Q1 2024, therefore no roosting bat surveys were required. This measure will be applied in future quarters as necessary.</p>	
Biological Resources and Wetlands/ Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Buildings	Biological Resources and Wetlands	Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Buildings	57	- MMRP-BIO-CNST	C-07	Vol-1, ROD	Conduct Roosting Bat Surveys at Buildings	Program-wide	D	C		VTA/C	IC	<p>CP2 will be performing the demolition in advance of the other contract packages. Future surveys will be performed as needed by the other contract packages.</p> <p>For CP-2 Tunnel and Trackwork: This mitigation measure was included in the CP2 Conformed set under Vol 1 General Requirements, Section 01 35 71 Biological Resources Requirements.</p> <p>No buildings were removed or demolished in Q1 2024, therefore this measure will be implemented in future quarters.</p>	



**BSV Phase II - Environmental Commitments Record
Mitigation Monitoring & Reporting Program**

Env Doc Chapter / Mitigation Topic	Environmental Document Chapter	Mitigation Topic	MMRP Code		Source Document	Summary	Mitigation Measure	Location	Implementation					Quarter Mitigation Completed	
			Chrono #	Measure #					Timeframe: Design (D)	Timeframe: Construction (C)	Timeframe: Post-construction (P)	Responsible Party	Compliance Status		2024
															Q1
Biological Resources and Wetlands/ Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Buildings	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 Roosting Bat Surveys Within 24 Hours of Building Demolition	Program-wide	D	C		VTA/C	IC	No buildings were removed or demolished in Q1 2024, therefore this measure will be implemented in future quarters.	
Biological Resources and Wetlands/ Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Buildings	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 Roosting Bat Surveys Within 24 Hours of Building Demolition	Program-wide	D	C		VTA/C	IC	No buildings were removed or demolished in Q1 2024, therefore this measure will be implemented in future quarters.	
Biological Resources and Wetlands/ Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Buildings	Biological Resources and Wetlands	Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Buildings	60	- MMRP- BIO- CNST	C-10	Vol-1, ROD	Implement Roosting Bat Protective Measures	Program-wide	D	C		VTA/C	IC	No buildings were removed or demolished in Q1 2024, therefore this measure will be implemented in future quarters.	



**BSV Phase II - Environmental Commitments Record
Mitigation Monitoring & Reporting Program**

Env Doc Chapter / Mitigation Topic	Environmental Document Chapter	Mitigation Topic	MMRP Code		Source Document	Summary	Mitigation Measure	Location	Implementation				Compliance Status	Quarter Mitigation Completed		
			Chrono #	Measure #					Timeframe: Design (D)	Timeframe: Construction (C)	Timeframe: Post-construction (P)	Responsible Party			2024	
															Q1	Q2
Biological Resources and Wetlands/ Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Buildings	Biological Resources and Wetlands	Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Buildings	61	- MMRP-BIO-CNST	Vol-1, ROD	Conduct Follow-Up Roosting Bat Surveys at Buildings	Program-wide	D	C		VTA/C	IC	No buildings were removed or demolished in Q1 2024, therefore this measure will be implemented in future quarters.			
Biological Resources and Wetlands/ Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Buildings	Biological Resources and Wetlands	Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Buildings	62	- MMRP-BIO-CNST	Vol-1, ROD	Install Bat Roosting Exclusion Measures	Program-wide	D	C		VTA/C	IC	No buildings were removed or demolished in Q1 2024, therefore this measure will be implemented in future quarters.			
Biological Resources and Wetlands/ Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Buildings	Biological Resources and Wetlands	Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Buildings	63	- MMRP-BIO-CNST	Vol-1, ROD	Conduct Roosting Bat Surveys Within 24 Hours of Building Demolition	Program-wide	D	C		VTA/C	IC	No buildings were removed or demolished in Q1 2024, therefore this measure will be implemented in future quarters.			



BSV Phase II - Environmental Commitments Record
Mitigation Monitoring & Reporting Program

Env Doc Chapter / Mitigation Topic	Environmental Document Chapter	Mitigation Topic	MMRP Code		Source Document	Summary	Mitigation Measure	Location	Implementation				Compliance Status	Quarter Mitigation Completed		
			Chrono #	Measure #					Timeframe: Design (D)	Timeframe: Construction (C)	Timeframe: Post-construction (P)	Responsible Party			2024	
															Q1	
Biological Resources and Wetlands/ Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Buildings	Biological Resources and Wetlands	Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Buildings	64	- MMRP-BIO-CNST-14	Vol-1, ROD	Implement Roosting Bat Protective Measures	Program-wide	D	C		VTA/C	IC	No buildings were removed or demolished in Q1 2024, therefore this measure will be implemented in future quarters.			
Biological Resources and Wetlands/ Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Buildings	Biological Resources and Wetlands	Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Buildings	65	- MMRP-BIO-CNST-15	Vol-1, ROD	No Building Demolition While Bats Are Present	Program-wide	D	C		VTA/C	IC	No buildings were removed or demolished in Q1 2024, therefore this measure will be implemented in future quarters.			
Biological Resources and Wetlands/ Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Buildings	Biological Resources and Wetlands	Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Buildings	66	- MMRP-BIO-CNST-16	Vol-1, ROD	Only Remove Roosting Building Habitat Prior to Hibernation	Program-wide	D	C		VTA/C	IC	No buildings were removed or demolished in Q1 2024, therefore this measure will be implemented in future quarters.			



**BSV Phase II - Environmental Commitments Record
Mitigation Monitoring & Reporting Program**

Env Doc Chapter / Mitigation Topic	Environmental Document Chapter	Mitigation Topic	MMRP Code		Source Document	Summary	Mitigation Measure	Location	Implementation				Compliance Status	Quarter Mitigation Completed		
			Chrono #	Measure #					Timeframe: Design (D)	Timeframe: Construction (C)	Timeframe: Post-construction (P)	Responsible Party			2024	
															Q1	Q2
Biological Resources and Wetlands/ Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Buildings	Biological Resources and Wetlands	Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Buildings	67	- MMRP- BIO- CNST	Vol-1, ROD	Install Roosting Bat Exclusion Devices	Program-wide	D	C		VTA/C	IC	No buildings were removed or demolished in Q1 2024, therefore this measure will be implemented in future quarters.			
Biological Resources and Wetlands/ Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Buildings	Biological Resources and Wetlands	Conduct Preconstruction Surveys for Roosting Bat and Implement Protective Measures- Buildings	68	- MMRP- BIO- CNST	Vol-1, ROD	Provide Compensatory Mitigation for Roosting Bat Habitat	Program-wide	D	C		VTA/C	IC	No buildings were removed or demolished in Q1 2024, therefore this measure will be implemented in future quarters.			
Biological Resources and Wetlands/ Protect Riparian Habitat	Biological Resources and Wetlands	Protect Riparian Habitat	69	- MMRP- BIO- CNST- D	Vol-1, ROD	Protect Riparian Habitat 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.	Guadalupe River ; Los Gatos creek		C		VTA/C	IC	The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (P&E) packages. For CP-2 Tunnel and Trackwork: No construction occurred near Guadalupe River and Los Gatos Creek in Q1 2024, therefore this measure will be implemented in future quarters.			
Biological Resources and Wetlands/ Conduct Preconstruction Tricolored Blackbird Nesting Surveys and Determine Appropriate Action	Biological Resources and Wetlands	Conduct Preconstruction Tricolored Blackbird Nesting Surveys and Determine Appropriate Action	70	- MMRP- BIO- CNST-E	Vol-1, ROD	Conduct Preconstruction Tricolored Blackbird Nesting Surveys A qualified biologist will conduct a field investigation to identify and map potential nesting substrate. Nesting substrate generally includes flooded, thorny, or spiny vegetation (e.g., cattails, bulrushes, willows, blackberries, thistles, or nettles). If potential nesting substrate is found, VTA may revise the construction staging areas to avoid all areas within a 250-foot buffer around the potential nesting habitat, and biologists will conduct appropriate surveys. If VTA chooses not to avoid the potential nesting habitat and the 250-foot buffer, biologists will conduct additional nesting surveys.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A - See 2018 for Documentation	N/A	



**BSV Phase II - Environmental Commitments Record
Mitigation Monitoring & Reporting Program**

Env Doc Chapter / Mitigation Topic	Environmental Document Chapter	Mitigation Topic	MMRP Code		Source Document	Summary	Mitigation Measure	Location	Implementation					Quarter Mitigation Completed			
			Chrono #	Measure #					Vol-	ROD	Timeframe: Design (D)	Timeframe: Construction (C)	Timeframe: Post-construction (P)		Responsible Party	Compliance Status	2024
																	Q1
Biological Resources and Wetlands/ Conduct Preconstruction Burrowing Owl Surveys and Determine Appropriate Action (for Newhall Maintenance Facility)	Biological Resources and Wetlands	Conduct Preconstruction Burrowing Owl Surveys and Determine Appropriate Action (for Newhall Maintenance Facility)	71	MMRP-BIO-CNST-01	Vol-1, ROD	Implement Burrowing Owl Measures	Conduct Preconstruction Burrowing Owl Surveys and Determine Appropriate Action (for Newhall Maintenance Facility): To avoid or minimize direct effects of construction activities on burrowing owls, VTA will implement the procedures described below (MMRP-BIO-CNST-F-02 to F-15). This mitigation measure incorporates survey, avoidance, and minimization guidelines taken directly from Condition 15 of the SCVHP (SCVHA 2012).	Newhall Maintenance Facility	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 the breeding and non-breeding season, respectively. Note that these measures only apply at the Newhall Maintenance Facility, which is the only area on the project with burrowing owl habitat.			
Biological Resources and Wetlands/ Conduct Preconstruction Burrowing Owl Surveys and Determine Appropriate Action (for Newhall Maintenance Facility)	Biological Resources and Wetlands	Conduct Preconstruction Burrowing Owl Surveys and Determine Appropriate Action (for Newhall Maintenance Facility)	72	MMRP-BIO-CNST-02	Vol-1, ROD	Conduct Preconstruction Burrowing Owl Surveys	Conduct Preconstruction Burrowing Owl Surveys and Determine Appropriate Action (for Newhall Maintenance Facility): Prior to any ground disturbance related to BART Extension Alternative activities, a qualified biologist will conduct preconstruction surveys in all suitable habitat areas as identified by SCVHA. The purpose of the preconstruction surveys is to document the presence or absence of burrowing owls on the construction site, particularly in areas within 250 feet of construction activity. To maximize the likelihood of detecting owls, the preconstruction survey will last a minimum of 3 hours. The survey will begin 1 hour before sunrise and continue until 2 hours after sunrise (3 hours total) or begin 2 hours before sunset and continue until 1 hour after sunset. Additional time may be required at large construction sites. The biologist will conduct a minimum of two surveys (if owls are detected on the first survey, a second survey is not needed). The biologist will count all owls observed and map their location. Surveys will conclude no more than 2 calendar days prior to construction. Therefore, the project proponent must begin surveys no more than 4 days prior to construction (2 days of surveying plus up to 2 days between surveys and construction). To avoid last minute changes in schedule or contracting that may occur if burrowing owls are found, VTA may also conduct a preliminary survey up to 14 days before construction. This preliminary survey may count as the first of the two required surveys as long as the second survey concludes no more than 2 calendar days in advance of construction.	Newhall Maintenance Facility	D	C		VTA/C	IC	No work occurred at the Newhall Maintenance facility in Q1 2024, therefore no burrowing owl surveys were required.			
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)	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-03	Vol-1, ROD	Avoid Burrowing Owls During Breeding Season	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. 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.	Newhall Maintenance Facility	D	C		VTA/C	IC	No work occurred at the Newhall Maintenance facility in Q1 2024, therefore no burrowing owl surveys were required.			
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)	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-04	Vol-1, ROD	Construction Inside 250-foot Owl Buffer	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: • 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):	Newhall Maintenance Facility	D	C		VTA/C	IC	No work occurred at the Newhall Maintenance facility in Q1 2024, therefore no burrowing owl surveys were required.			
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)	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-05	Vol-1, ROD	Owl Avoidance and Minimization Plan Approval	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.	Newhall Maintenance Facility	D	C		VTA/C	IC	No work occurred at the Newhall Maintenance facility in Q1 2024, therefore no burrowing owl surveys were required.			
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)	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-06	Vol-1, ROD	Determine Baseline Owl Behavior	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).	Newhall Maintenance Facility	D	C		VTA/C	IC	No work occurred at the Newhall Maintenance facility in Q1 2024, therefore no burrowing owl surveys were required.			
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)	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-07	Vol-1, ROD	Survey Owl Behavior During Construction	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.	Newhall Maintenance Facility	D	C		VTA/C	IC	No work occurred at the Newhall Maintenance facility in Q1 2024, therefore no burrowing owl surveys were required.			
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)	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-08	Vol-1, ROD	Cease Construction if Owl Behavior Changes	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.	Newhall Maintenance Facility	D	C		VTA/C	IC	No work occurred at the Newhall Maintenance facility in Q1 2024, therefore no burrowing owl surveys were required.			



BSV Phase II - Environmental Commitments Record
Mitigation Monitoring & Reporting Program

Env Doc Chapter / Mitigation Topic	Environmental Document Chapter	Mitigation Topic	MMRP Code		Source Document	Summary	Mitigation Measure	Location	Implementation					Quarter Mitigation Completed		
			Chron o #	Measure #					Vol-1, ROD	Timeframe: Design (D)	Timeframe: Construction (C)	Timeframe: Post-construction (P)	Responsible Party		Compliance Status	2024
																Q1
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)	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	Excavate Owl Burrow to Prevent Reoccupation	Newhall Maintenance Facility	D	C		VTA/C	IC	No work occurred at the Newhall Maintenance facility in Q1 2024, therefore no burrowing owl surveys were required.		
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)	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	Establish Buffers Around Occupied Burrows	Newhall Maintenance Facility	D	C		VTA/C	IC	No work occurred at the Newhall Maintenance facility in Q1 2024, therefore no burrowing owl surveys were required.		
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)	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	Determine Baseline Owl Behavior	Newhall Maintenance Facility	D	C		VTA/C	IC	No work occurred at the Newhall Maintenance facility in Q1 2024, therefore no burrowing owl surveys were required.		
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)	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	Survey Owl Behavior During Construction	Newhall Maintenance Facility	D	C		VTA/C	IC	No work occurred at the Newhall Maintenance facility in Q1 2024, therefore no burrowing owl surveys were required.		
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)	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	Cease Construction if Owl Behavior Changes	Newhall Maintenance Facility	D	C		VTA/C	IC	No work occurred at the Newhall Maintenance facility in Q1 2024, therefore no burrowing owl surveys were required.		
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)	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	Excavate Owl Burrow to Prevent Reoccupation	Newhall Maintenance Facility	D	C		VTA/C	IC	No work occurred at the Newhall Maintenance facility in Q1 2024, therefore no burrowing owl surveys were required.		
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	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)	85	- MMRP-BIO-CNST-	F-15	Vol-1, ROD	Maintain Non-Disturbance Owl Buffer Zones	Newhall Maintenance Facility	D	C		VTA/C	IC	No work occurred at the Newhall Maintenance facility in Q1 2024, therefore no burrowing owl surveys were required.		
Cultural Resources/ Implement Programmatic Agreement and Archaeological Resources Treatment Plan	Cultural Resources	Implement Programmatic Agreement and Archaeological Resources Treatment Plan	86	- MMRP-CUL-CNST-A	-	Vol-1, ROD	Implement Programmatic Agreement (PA) and Archaeological Resources Treatment Plan (ARTP)	Program-wide	D	C		VTA	IC	VTA is implementing the Archaeological Resources Treatment Plan (ARTP). Results will be reported to all Consulting Parties (CPs) to the Programmatic Agreement (PA) Annual Report. In Q1 2024, archaeological planning and investigations are ongoing.		



BSV Phase II - Environmental Commitments Record
Mitigation Monitoring & Reporting Program

Env Doc Chapter / Mitigation Topic	Environmental Document Chapter	Mitigation Topic	MMRP Code		Source Document	Summary	Mitigation Measure	Location	Implementation					2024 Q1	Quarter Mitigation Completed
			Chrono #	Measure #					Timeframe: Design (D)	Timeframe: Construction (C)	Timeframe: Post-construction (P)	Responsible Party	Compliance Status		
Geology, Soils, and Seismicity/ Incorporate Design Specifications to Minimize Effects from Liquefaction Hazards	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	Program-wide	D	C	P	VTA/C	IC	This is a summary measure, and has been applied as seen in the mitigation measures MMRP-GEO-CNST-A-01 through A-06 below.		
Geology, Soils, and Seismicity/ Incorporate Design Specifications to Minimize Effects from Liquefaction Hazards	Geology, Soils, and Seismicity	Incorporate Design Specifications to Minimize Effects from Liquefaction Hazards	88	- MMRP-GEO-CNST-A-02	Vol-1, ROD	Use Pile Foundations as a Means of Ground Densification	Program-wide	D	C	P	VTA/C	IC	The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (P&S&E) packages. For CP-2 Tunnel and Trackwork: In Q1 2024, design for liquefaction hazards is underway.		
Geology, Soils, and Seismicity/ Incorporate Design Specifications to Minimize Effects from Liquefaction Hazards	Geology, Soils, and Seismicity	Incorporate Design Specifications to Minimize Effects from Liquefaction Hazards	89	- MMRP-GEO-CNST-A-03	Vol-1, ROD	Support Parking Garages on Piles	Program-wide	D	C	P	VTA/C	IC	The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (P&S&E) packages. For CP-2 Tunnel and Trackwork: In Q1 2024, design for liquefaction hazards is underway.		



**BSV Phase II - Environmental Commitments Record
Mitigation Monitoring & Reporting Program**

Env Doc Chapter / Mitigation Topic	Environmental Document Chapter	Mitigation Topic	MMRP Code		Source Document	Summary	Mitigation Measure	Location	Implementation					Quarter Mitigation Completed	
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															Q1
Geology, Soils, and Seismicity/ Incorporate Design Specifications to Minimize Effects from Liquefaction Hazards	Geology, Soils, and Seismicity	Incorporate Design Specifications to Minimize Effects from Liquefaction Hazards	90	MMRP-GEO-CNST-A-04	Vol-1, ROD	Integrate Subgrade Improvements for Shallow Foundations	<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>	Program-wide	D	C	P	VTA/C	IC	<p>The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (P&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: In Q1 2024, design for liquefaction hazards is underway.</p>	
Geology, Soils, and Seismicity/ Incorporate Design Specifications to Minimize Effects from Liquefaction Hazards	Geology, Soils, and Seismicity	Incorporate Design Specifications to Minimize Effects from Liquefaction Hazards	91	MMRP-GEO-CNST-A-05	Vol-1, ROD	Mitigate Liquefaction-Related Uplift of Underground Facilities	<p>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></p>	Program-wide	D	C	P	VTA/C	IC	<p>The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (P&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: In Q1 2024, design for liquefaction hazards is underway.</p>	
Geology, Soils, and Seismicity/ Incorporate Design Specifications to Minimize Effects from Liquefaction Hazards	Geology, Soils, and Seismicity	Incorporate Design Specifications to Minimize Effects from Liquefaction Hazards	92	MMRP-GEO-CNST-A-06	Vol-1, ROD	Consider Other Liquefaction Hazard Mitigation Measures	<p>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.</p> <ul style="list-style-type: none"> In-situ treatment/densification with vibro-replacement stone columns. Load transfer to underlying bearing layers, which are non-liquefiable with soil/cement columns. Over-excavation and replacement of liquefaction prone soils with compacted engineered fill. 	Program-wide	D	C	P	VTA/C	IC	<p>The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (P&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: In Q1 2024, design for liquefaction hazards is underway.</p>	



BSV Phase II - Environmental Commitments Record
Mitigation Monitoring & Reporting Program

Env Doc Chapter / Mitigation Topic	Environmental Document Chapter	Mitigation Topic	MMRP Code		Source Document	Summary	Mitigation Measure	Location	Implementation					Quarter Mitigation Completed	
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															Q1
Geology, Soils, and Seismicity/ Implement Preconstruction and Post-construction Building Condition Surveys for Settlement	Geology, Soils, and Seismicity	Implement Preconstruction and Post-construction Building Condition Surveys for Settlement	93	- MMRP-GEO-CNST-	B-01	Vol-1, ROD	Conduct Preconstruction Building Condition Surveys	Program-wide	D	C	P	VTA/C	IC	<p>The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (PS&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: VTA performed exterior and interior surveys at 3 historic properties in Q1 2024. Report Preparation is underway.</p>	
Geology, Soils, and Seismicity/ Implement Preconstruction and Post-construction Building Condition Surveys for Settlement- Historic Buildings	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>	Program-wide	D	C	P	VTA/C	IC	<p>The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (PS&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: VTA performed exterior and interior surveys at 3 historic properties in Q1 2024. Report Preparation is underway.</p>	
Geology, Soils, and Seismicity/ Monitor Ground Surface during Tunneling Activities	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>	Program-wide	D	C		VTA/C	IC	<p>The relevant contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (PS&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: This measure did not apply in Q1 2024 because underground tunnels and stations construction has not commenced.</p>	
Geology, Soils, and Seismicity/ Monitor Settlement Effects around Cut-and-Cover Excavations	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>	Program-wide	D	C		VTA/C	IC	<p>The relevant contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (PS&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: This measure did not apply in Q1 2024 because underground tunnels and stations construction has not commenced.</p>	



BSV Phase II - Environmental Commitments Record
Mitigation Monitoring & Reporting Program

Env Doc Chapter / Mitigation Topic	Environmental Document Chapter	Mitigation Topic	MMRP Code		Source Document	Summary	Mitigation Measure	Location	Implementation					Quarter Mitigation Completed	
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															Q1
Geology, Soils, and Seismicity/ Implement Preconstruction Condition Surveys for Utilities	Geology, Soils, and Seismicity	Implement Preconstruction Condition Surveys for Utilities	97	- MMRP- GEO- CNST-E	-	Vol-1, ROD	Implement Preconstruction Condition Surveys for Utilities	Program-wide	D	C		VTA/C	IC	<p>The relevant contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (P&S&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: This measure did not apply in Q1 2024 because underground tunnels and stations construction has not commenced.</p>	
Geology, Soils, and Seismicity/ Minimize Excavation Bottom Failure Impacts	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. 	Program-wide	D	C	P	VTA/C	IC	<p>The relevant contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (P&S&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: This measure did not apply in Q1 2024 because underground tunnels and stations construction has not commenced.</p>	
Geology, Soils, and Seismicity/ Minimize Disturbance of Sensitive Deposits at the Excavation Subgrade	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. 	Program-wide	D	C		VTA/C	IC	<p>The relevant contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (P&S&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: In Q1 2024, design for minimization for disturbance of sensitive deposits is underway.</p>	
Geology, Soils, and Seismicity/ Incorporate Design Specifications to Minimize Effects from Expansive Soils	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. 	Program-wide	D	C		VTA/C	IC	<p>The relevant contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (P&S&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: In Q1 2024, design to minimize effects from expansive soils is underway.</p>	



BSV Phase II - Environmental Commitments Record
Mitigation Monitoring & Reporting Program

Env Doc Chapter / Mitigation Topic	Environmental Document Chapter	Mitigation Topic	MMRP Code		Source Document	Summary	Mitigation Measure	Location	Implementation					Quarter Mitigation Completed	
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Geology, Soils, and Seismicity/ Stop Construction if Paleontological Resources are Discovered and Determine Appropriate Action	Geology, Soils, and Seismicity	Stop Construction if Paleontological Resources are Discovered and Determine Appropriate Action	101	- MMRP- GEO- CNST-1	-	Vol-1, ROD	Stop Construction if Paleontological Resources are Discovered	Program-wide	D	C			VTA/C	IC	<p>The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (P&S&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: No construction activities took place in Q1 2024. This measure will be applied in future quarters as necessary.</p>
Greenhouse Gas Emissions/ Implement Energy Efficiency Measures (for TOD)	Greenhouse Gas Emissions	Implement Energy Efficiency Measures (TOD)	102	- MMRP- GHG-A	-	Vol-1, ROD	Implement Energy Efficiency Measures (TOD)	TOD		C			VTA/C	IC	TOD is not included in CP1 through CP4. Once TOD contracts are underway these measures will be addressed.
Greenhouse Gas Emissions/ Participate in Food Waste Programs (for TOD)	Greenhouse Gas Emissions	Participate in Food Waste Programs (TOD)	103	- MMRP- GHG-B	-	Vol-1, ROD	Participate in Food Waste Programs (TOD)	TOD			P		VTA/C	IC	TOD is not included in CP1 through CP4. Once TOD contracts are underway these measures will be addressed.
Greenhouse Gas Emissions/ Utilize Electrical Landscaping Equipment (for TOD)	Greenhouse Gas Emissions	Utilize Electrical Landscaping Equipment (TOD)	104	- MMRP- GHG-C	-	Vol-1, ROD	Utilize Electrical Landscaping Equipment (TOD)	TOD	D				VTA/C	IC	TOD is not included in CP1 through CP4. Once TOD contracts are underway these measures will be addressed.
Greenhouse Gas Emissions/ Provide Preferential Parking for Electric Vehicles (for TOD)	Greenhouse Gas Emissions	Provide Preferential Parking for Electric Vehicles (TOD)	105	- MMRP- GHG-	D-01	Vol-1, ROD	Provide Preferential Parking for Electric Vehicles (TOD)	TOD	D				VTA/C	IC	TOD is not included in CP1 through CP4. Once TOD contracts are underway these measures will be addressed.
Greenhouse Gas Emissions/ Provide Preferential Parking for Electric Vehicles- TOD Residential Use	Greenhouse Gas Emissions	Provide Preferential Parking for Electric Vehicles (TOD Residential)	106	- MMRP- GHG-	D-02	Vol-1, ROD	Provide Preferential Parking for Electric Vehicles (TOD Residential)	TOD	D				VTA/C	IC	TOD is not included in CP1 through CP4. Once TOD contracts are underway these measures will be addressed.
Greenhouse Gas Emissions/ Provide Preferential Parking for Electric Vehicles- TOD Commercial Use	Greenhouse Gas Emissions	Provide Preferential Parking for Electric Vehicles (TOD Commercial)	107	- MMRP- GHG-D	D-03	Vol-1, ROD	Provide Preferential Parking for Electric Vehicles (TOD Commercial)	TOD	D				VTA/C	IC	TOD is not included in CP1 through CP4. Once TOD contracts are underway these measures will be addressed.
Hazardous Materials/ Prepare Remedial Action Plans	Hazardous Materials	Prepare Remedial Action Plans	108	- MMRP- HAZ- CNST-A	-	Vol-1, ROD	Prepare Remedial Action Plans	Project wide	D					IC	<p>The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (P&S&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: No construction activities took place in Q1 2024. This measure will be applied in future quarters as necessary.</p>



**BSV Phase II - Environmental Commitments Record
Mitigation Monitoring & Reporting Program**

Env Doc Chapter / Mitigation Topic	Environmental Document Chapter	Mitigation Topic	MMRP Code		Source Document	Summary	Mitigation Measure	Location	Implementation					Quarter Mitigation Completed	
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															Q1
Noise and Vibration/ Incorporate FTA Criteria Compliant Construction Noise and Vibration Specifications	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	Project wide	D	C			IC	<p>The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (P&S&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: Section 01 81 20 Noise and Vibration Control has been included in the project specifications and is provided in all bid documents.</p>		
Noise and Vibration/ Locate Equipment as Far as Feasible from Sensitive Sites	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	Project wide		C			IC	<p>The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (P&S&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: No construction activities took place in Q1 2024. This measure will be applied in future quarters as necessary.</p>		
Noise and Vibration/Construct Temporary Noise Barriers	Noise and Vibration	Construct Temporary Noise Barriers	111	MMRP-NV-CNST-C	Vol-1, ROD	Construct Temporary Noise Barriers	Project wide; 28TH Street/Little Portugal (Alum Rock)	D	C			IC	<p>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.</p> <p>The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (P&S&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: No construction activities took place in Q1 2024. This measure will be applied in future quarters as necessary.</p>		
Noise and Vibration/ Operate Equipment to Minimize Annoying Noise and Vibration	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	Program-wide		C		VTA/C	IC	<p>Operate Equipment to Minimize Annoying Noise and Vibration: Contractors will implement the following measures:</p> <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. <p>The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (P&S&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: No construction activities took place in Q1 2024. This measure will be applied in future quarters as necessary.</p>		



**BSV Phase II - Environmental Commitments Record
Mitigation Monitoring & Reporting Program**

Env Doc Chapter / Mitigation Topic	Environmental Document Chapter	Mitigation Topic	MMRP Code		Source Document	Summary	Mitigation Measure	Location	Implementation					Quarter Mitigation Completed	
			Chrono #	Measure #					Timeframe: Design (D)	Timeframe: Construction (C)	Timeframe: Post-construction (P)	Responsible Party	Compliance Status		2024
															Q1
Noise and Vibration/ Route Construction Trucks along Truck Routes Least Disturbing to Residents	Noise and Vibration	Route Construction Trucks along Truck Routes Least Disturbing to Residents	113	- MMRP-NV-CNST-E	-	Vol-1, ROD	Route Construction Trucks along Truck Routes Least Disturbing to Residents	Program-wide	C		VTA/C	IC	<p>The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (PS&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: The Contractor has begun drafting a Construction Transportation Management Plan (CTMP) and is coordinating with City and County officials to reduce construction-related traffic and minimize disturbance to residents.</p> <p>No construction activities took place in Q1 2024. This measure will be applied in future quarters as necessary.</p>		
Noise and Vibration/ Secure Steel and Concrete Plates over Excavated Holes and Trenches	Noise and Vibration	Secure Steel and Concrete Plates over Excavated Holes and Trenches	114	- MMRP-NV-CNST-F	-	Vol-1, ROD	Secure Steel and Concrete Plates over Excavated Holes and Trenches	Program-wide	C		VTA/C	IC	<p>The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (PS&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: No construction activities took place in Q1 2024. This measure will be applied in future quarters as necessary.</p>		
Noise and Vibration/ Use Best Available Practices to Reduce Noise and Vibration	Noise and Vibration	Use Best Available Practices to Reduce Noise and Vibration	115	- MMRP-NV-CNST-G	-	Vol-1, ROD	Use Best Available Practices to Reduce Noise and Vibration	Program-wide	C		VTA/C	IC	<p>The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (PS&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: No construction activities took place in Q1 2024. This measure will be applied in future quarters as necessary.</p>		



**BSV Phase II - Environmental Commitments Record
Mitigation Monitoring & Reporting Program**

Env Doc Chapter / Mitigation Topic	Environmental Document Chapter	Mitigation Topic	MMRP Code		Source Document	Summary	Mitigation Measure	Location	Implementation					Quarter Mitigation Completed	
			Chrono #	Measure #					Timeframe: Design (D)	Timeframe: Construction (C)	Timeframe: Post-construction (P)	Responsible Party	Compliance Status		2024
															Q1
Noise and Vibration/ Adhere to Local Jurisdiction Construction Time Periods, to the Extent Feasible	Noise and Vibration	Adhere to Local Jurisdiction Construction Time Periods, to the Extent Feasible	116	- MMRP-NV-CNST-H	-	Vol-1, ROD	Adhere to Local Jurisdiction Construction Time Periods	Program-wide		C		VTA/C	IC	<p>The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (PS&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: No construction activities took place in Q1 2024. This measure will be applied in future quarters as necessary.</p>	
Noise and Vibration/ Perform Preconstruction Ambient Noise Measurements at All CSAs	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 Construction Staging Areas (CSA)	Program-wide	D			VTA/C	IC	<p>The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (PS&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: This measure did not apply in Q1 2024 because construction on tunnel portals, stations, and ventilation sites has not commenced.</p>	
Noise and Vibration/ Implement a Construction Noise Control and Monitoring Plan	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	Program-wide	D	C		VTA/C	IC	<p>The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (PS&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: The contractor has begun drafting a Construction Noise and Vibration Monitoring Plan (CNVMP) and Construction Noise and Vibration Control Plan (CNVCP). The plans will outline monitoring equipment, procedures, measurement locations, frequencies, and durations, and will be updated quarterly, once construction begins, in accordance with Section 1.07.B.5 in O1 81 20 Noise and Vibration Control. Results will be documented and submitted to VTA as required in O1 81 20 Noise and Vibration Control.</p> <p>The measure did not apply in Q1 2024 because construction has not commenced, and will be applied in future quarters as necessary.</p>	



BSV Phase II - Environmental Commitments Record
Mitigation Monitoring & Reporting Program

Env Doc Chapter / Mitigation Topic	Environmental Document Chapter	Mitigation Topic	MMRP Code		Source Document	Summary	Mitigation Measure	Location	Implementation					Quarter Mitigation Completed	
			Chrono #	Measure #					Timeframe: Design (D)	Timeframe: Construction (C)	Timeframe: Post-construction (P)	Responsible Party	Compliance Status		2024
															Q1
Noise and Vibration/ Require Minimum Qualifications for the Acoustical Engineer	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	Program-wide	D	C		VTA/C	IC	The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (P&S&E) packages. For CP-2 Tunnel and Trackwork: In Q4 2022, the CP-2 contractor submitted and approved the qualifications of an Acoustical Engineer in accordance with this measure.	
Noise and Vibration/ Prohibit Operation of Noise-Generating Equipment Prior to Acceptance of Noise Control and Monitoring Plan	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 Plan	Program-wide		C		VTA/C	IC	The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (P&S&E) packages. For CP-2 Tunnel and Trackwork: No noise generating equipment was operated in Q1 2024 as construction has not commenced.	
Noise and Vibration/ Install Long-Term Noise Monitors at CSAs during all Construction Phases	Noise and Vibration	Install Long-Term Noise Monitors at CSAs during all Construction Phases	121	- MMRP-NV-CNST-M-01	M-01	Vol-1, ROD	Install Stationary Long-Term Noise Monitors at Construction Staging Areas (CSA)	Program-wide	D	C		VTA/C	IC	The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (P&S&E) packages. For CP-2 Tunnel and Trackwork: No long-term noise monitors were required in Q1 2024 as construction has not commenced.	
Noise and Vibration/ Install Long-Term Noise Monitors at CSAs during all Construction Phases	Noise and Vibration	Install Long-Term Noise Monitors at CSAs during all Construction Phases	122	- MMRP-NV-CNST-M-02	M-02	Vol-1, ROD	Conduct Weekly Noise Sampling with Hand-Held Monitors	Program-wide	D	C		VTA/C	IC	The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (P&S&E) packages. For CP-2 Tunnel and Trackwork: No long-term noise monitors were required in Q1 2024 as construction has not commenced.	



BSV Phase II - Environmental Commitments Record
Mitigation Monitoring & Reporting Program

Env Doc Chapter / Mitigation Topic	Environmental Document Chapter	Mitigation Topic	MMRP Code		Source Document	Summary	Mitigation Measure	Location	Implementation					Quarter Mitigation Completed	
			Chrono #	Measure #					Timeframe: Design (D)	Timeframe: Construction (C)	Timeframe: Post-construction (P)	Responsible Party	Compliance Status		2024
															Q1
Noise and Vibration/ Ensure Equipment is Pre-certified to Meet Noise Limits	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	Program-wide	D	C		VTA/C	IC	<p>The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (P&S&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: No major equipment was used in Q1 2024 because construction utilizing major equipment has not commenced.</p>	
Noise and Vibration/ Implement a Complaint Resolution Procedure	Noise and Vibration	Implement a Complaint Resolution Procedure	124	- MMRP-NV-CNST-O	-	Vol-1, ROD	Implement a Noise and Vibration Complaint Resolution Procedure	Program-wide	D	C		VTA/C	IC	<p>The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (P&S&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: This measure did not apply in Q1 2024 because the contractor has not commenced construction.</p>	
Noise and Vibration/ Implement a Construction Vibration Control and Monitoring Plan	Noise and Vibration	Implement a Construction Vibration Control and Monitoring Plan	125	- MMRP-NV-CNST-P-01	-	Vol-1, ROD	<p>Prepare a Construction Vibration Control and Monitoring Plan</p> <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>	Program-wide	D	C		VTA/C	IC	<p>The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (P&S&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: The contractor has begun drafting a Construction Noise and Vibration Monitoring Plan (CNVMP) and Construction Noise and Vibration Control Plan (CNVCP). The plans will outline monitoring equipment, procedures, measurement locations, frequencies, and durations, and will be updated quarterly, once construction begins, in accordance with Section 1.07.B.5 in 01 81 20 Noise and Vibration Control. Results will be documented and submitted to VTA as required in 01 81 20 Noise and Vibration Control.</p> <p>The contractor has not installed construction monitoring equipment in Q1 2024 as construction has not commenced.</p>	



BSV Phase II - Environmental Commitments Record
Mitigation Monitoring & Reporting Program

Env Doc Chapter / Mitigation Topic	Environmental Document Chapter	Mitigation Topic	MMRP Code		Source Document	Summary	Mitigation Measure	Location	Implementation					Quarter Mitigation Completed	
			Chrono #	Measure #					Timeframe: Design (D)	Timeframe: Construction (C)	Timeframe: Post-construction (P)	Responsible Party	Compliance Status		2024
															Q1
Noise and Vibration/ Implement a Construction Vibration Control and Monitoring Plan	Noise and Vibration	Implement a Construction Vibration Control and Monitoring Plan	126	- MMRP-NV-CNST-	P-02	Vol-1, ROD	Halt Construction if Levels Exceed Allowable Vibration Limits	Program-wide	D	C		VTA/C	IC	<p>The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (P&S&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: This mitigation measure was included in the CP2 Conformed set under Vol 1 General Requirements, Section 01 81 20 Noise and Vibration Control. The contractor has begun drafting a Construction Noise and Vibration Monitoring Plan (CNVMP) and Construction Noise and Vibration Control Plan (CNVCP). The plans will outline monitoring equipment, procedures, measurement locations, frequencies, and durations, and will be updated quarterly, once construction begins, in accordance with Section 1.07.B.5 in 01 81 20 Noise and Vibration Control. Results will be documented and submitted to VTA as required in 01 81 20 Noise and Vibration Control.</p> <p>The contractor has not conducted vibration monitoring in Q1 2024 as construction has not commenced.</p>	
Noise and Vibration/ Implement a Construction Vibration Control and Monitoring Plan	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>	Program-wide	D	C		VTA/C	IC	<p>The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (P&S&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: This mitigation measure was included in the CP2 Conformed set under Vol 1 General Requirements, Section 01 81 20 Noise and Vibration Control. The contractor has begun drafting a Construction Noise and Vibration Monitoring Plan (CNVMP) and Construction Noise and Vibration Control Plan (CNVCP). The plans will outline monitoring equipment, procedures, measurement locations, frequencies, and durations, and will be updated quarterly, once construction begins, in accordance with Section 1.07.B.5 in 01 81 20 Noise and Vibration Control. Results will be documented and submitted to VTA as required in 01 81 20 Noise and Vibration Control.</p> <p>The contractor has not conducted vibration monitoring in Q1 2024 as construction has not commenced.</p>	
Noise and Vibration/ Implement a Construction Vibration Control and Monitoring Plan	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>	Program-wide	D	C		VTA/C	IC	<p>The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (P&S&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: This mitigation measure was included in the CP2 Conformed set under Vol 1 General Requirements, Section 01 81 20 Noise and Vibration Control. The contractor has begun drafting a Construction Noise and Vibration Monitoring Plan (CNVMP) and Construction Noise and Vibration Control Plan (CNVCP). The plans will outline monitoring equipment, procedures, measurement locations, frequencies, and durations, and will be updated quarterly, once construction begins, in accordance with Section 1.07.B.5 in 01 81 20 Noise and Vibration Control. Results will be documented and submitted to VTA as required in 01 81 20 Noise and Vibration Control.</p> <p>The contractor has not conducted vibration monitoring in Q1 2024 as construction has not commenced.</p>	



BSV Phase II - Environmental Commitments Record
Mitigation Monitoring & Reporting Program

Env Doc Chapter / Mitigation Topic	Environmental Document Chapter	Mitigation Topic	MMRP Code		Source Document	Summary	Mitigation Measure	Location	Implementation					Quarter Mitigation Completed	
			Chrono #	Measure #					Timeframe: Design (D)	Timeframe: Construction (C)	Timeframe: Post-construction (P)	Responsible Party	Compliance Status		2024
															Q1
Noise and Vibration/ Implement a Construction Vibration Control and Monitoring Plan- Historic structures	Noise and Vibration	Implement a Construction Vibration Control and Monitoring Plan- Historic structures	129	- MMRP- NV- P-05- CNST-	Vol-1, ROD	Notify Qualified Professional (QP) if Historic Building Construction Vibration Approaches Threshold	Program-wide	D	C		VTA/C	IC	<p>The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (PS&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: This mitigation measure was included in the CP2 Conformed set under Vol 1 General Requirements, Section 01 81 20 Noise and Vibration Control. The contractor has begun drafting a Construction Noise and Vibration Monitoring Plan (CNVMP) and Construction Noise and Vibration Control Plan (CNVCP). The plans will outline monitoring equipment, procedures, measurement locations, frequencies, and durations, and will be updated quarterly, once construction begins, in accordance with Section 1.07.B.5 in 01 81 20 Noise and Vibration Control. Results will be documented and submitted to VTA as required in 01 81 20 Noise and Vibration Control.</p> <p>The contractor has not conducted vibration monitoring at historic structures in Q1 2024 as construction has not commenced.</p>		
Noise and Vibration/ Perform Vertical Direction Vibration Monitoring	Noise and Vibration	Perform Vertical Direction Vibration Monitoring	130	- MMRP- NV- CNST- Q	Vol-1, ROD	Perform Vertical Direction Vibration Monitoring	Program-wide		C		VTA/C	IC	<p>The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (PS&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: The Construction Noise and Vibration Monitoring Plan was submitted in Q1 2023 and requires continuous vertical direction vibration monitoring during muck extraction. Vertical direction vibration monitoring was not performed in Q1 2024 as construction, including muck extraction, has not yet commenced.</p>		
Noise and Vibration/ Implement Preconstruction and Post-Construction Building Condition Surveys for Vibration	Noise and Vibration	Implement Preconstruction and Post-Construction Building Condition Surveys for Vibration	131	- MMRP- NV- R-01- CNST-	Vol-1, ROD	Implement Preconstruction and Post-Construction Building Condition Surveys for Vibration	Program-wide	D	C	P	VTA/C	IC	<p>The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (PS&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: No preconstruction building condition surveys were performed in Q1 2024. This measure will be implemented in future quarters as necessary.</p>		



BSV Phase II - Environmental Commitments Record
Mitigation Monitoring & Reporting Program

Env Doc Chapter / Mitigation Topic	Environmental Document Chapter	Mitigation Topic	MMRP Code		Source Document	Summary	Mitigation Measure	Location	Implementation				Quarter Mitigation Completed		
			Chrono #	Measure #					Timeframe: Design (D)	Timeframe: Construction (C)	Timeframe: Post-construction (P)	Responsible Party		Compliance Status	2024
															Q1
Noise and Vibration/ Implement Preconstruction and Post-Construction Building Condition Surveys for Vibration- Historic Buildings	Noise and Vibration	Implement Preconstruction and Post-Construction Building Condition Surveys for Vibration- Historic Buildings	132	- MMRP- NV- CNST- R-02	Vol-1, ROD	Prepare Condition Assessment Reports for Historic Buildings	<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 CP.</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 CP will implement these repairs in consultation with FTA and SHPO.</p>	Program-wide	D	C	P	VTA/C	IC	<p>The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (P&S&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: VTA received Condition Assessment Reports (CARs) for 5 locations in Q1 2023. In Q1 2024, VTA conducted surveys at 3 historic properties and preparation of the Condition Assessment Reports (CARs) is underway.</p>	
Noise and Vibration/ Implement Measures to Reduce Vibration from Muck Extraction and Supply Trains	Noise and Vibration	Implement Measures to Reduce Vibration from Muck Extraction and Supply Trains	133	- MMRP- NV- CNST-S	Vol-1, ROD	Implement Measures to Reduce Vibration from Muck Extraction and Supply Trains	<p>Implement Measures to Reduce Vibration from Muck Extraction and Supply Trains: The contractor will ensure that muck extraction and supply train operations do not result in groundborne vibration in excess of 72 VdB at nearby residences. Measures that can be implemented include, but are not limited to, placement of ballast mats underneath tracks on which the muck extraction train rides or the use of a conveyor in place of a train.</p>	Tunnel Alignment		C			IC	<p>The relevant contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (P&S&E) packages.</p> <p>For CP-2 Tunnel and Trackwork - This mitigation measure was included in the CP2 Conformed set under Vol 1 General Requirements, Section 01 81 20 Noise and Vibration Control; limited Notice to Proceed 1 issued 6/09/22.</p> <p>This measure was not implemented in Q1 2024 because construction, including muck extraction, has not yet commenced.</p>	
Noise and Vibration/ Implement Noise Reduction Treatments at Ancillary Facilities	Noise and Vibration	Implement Noise Reduction Treatments at Ancillary Facilities	134	- MMRP- NV-A	Vol-1, ROD	Implement Noise Reduction Treatments at Ancillary Facilities	<p>Implement Noise Reduction Treatments at Ancillary Facilities: The contractor will implement noise reduction treatments at ancillary facilities such as tunnel ventilation shafts, pressure relief shafts, traction power substations, and emergency backup generators such that noise levels comply with applicable Cities of San Jose and Santa Clara noise criteria at nearby developed land uses. Treatments that will be implemented, if necessary, include but are not limited to:</p> <ul style="list-style-type: none"> • Sound attenuators and acoustic absorptive treatments in ventilation shafts and facilities. • Sound attenuators for the tunnel emergency ventilation fans. • Perimeter noise walls (nominally an 8-foot-high wall) placed around emergency generators. 	Systems (Ventilation Structures, Traction Power Substations, Emergency Backup Generators)		C		VTA/C	IC	<p>The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (P&S&E) packages.</p> <p>For CP-2 Tunnel and Trackwork: This measure did not apply in Q1 2024 because construction has not commenced.</p>	
Noise and Vibration/ Reduce Groundborne Noise Levels	Noise and Vibration	Reduce Groundborne Noise Levels	135	- MMRP- NV-B	Vol-1, ROD	Reduce Groundborne Noise Levels	<p>Reduce Groundborne Noise Levels: The contractor will implement an Isolated Slab Track (IST) as the mitigation strategy for groundborne noise. An IST is a form of floating slab track (FST). The IST system is constructed with a continuous elastomeric mat instead of discrete elastomeric pads that are typically used for an FST system. An IST can be designed to provide from 10 to 13 dBA of noise reduction. This strategy can also be used under a crossover. The locations for implementing this measure are shown in Tables 4.12-21 through 4.12-25 (summarized in DRBMP-NV-A). The project's final design will determine the specific mitigation strategy, which could include alternative strategies that similarly achieve the FTA groundborne noise criteria.</p>	Tunnel Alignment		C		VTA/C	IC	<p>The relevant contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (P&S&E) packages.</p> <p>For CP-2 Tunnel and Trackwork - This mitigation measure was included in the CP2 Conformed set under Vol 2 Design Criteria Manual (DCM) Section 7.5 Trackway; limited Notice to Proceed 1 issued 6/09/22.</p> <p>This measure did not apply in Q1 2024 because construction has not commenced.</p>	
Utilities/ Prepare a San Jose Water Supply Infrastructure Capacity Assessment and Participate in the Improvements	Utilities	Prepare a San Jose Water Supply Infrastructure Capacity Assessment	136	- MMRP- UTIL-A	Vol-1, ROD	Prepare a San Jose Water Supply Infrastructure Capacity Assessment	<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>	28th Street/Little Portugal Station (Alum Rock) Downtown San Jose Station; Diridon Station	D		P	VTA	IC	<p>TOD is not included in CP1 through CP4. Once TOD contracts are underway these measures will be addressed.</p>	



**BSV Phase II - Environmental Commitments Record
Mitigation Monitoring & Reporting Program**

Env Doc Chapter / Mitigation Topic	Environmental Document Chapter	Mitigation Topic	MMRP Code		Source Document	Summary	Mitigation Measure	Location	Implementation					Quarter Mitigation Completed	
			Chron o #	Measure #					2024 Q1						
									Timeframe: Design (D)	Timeframe: Construction (C)	Timeframe: Post-construction (P)	Responsible Party	Compliance Status		
Utilities/ Prepare a Santa Clara Water Supply Infrastructure Capacity Assessment and Participate in the Improvements	Utilities	Prepare a Santa Clara Water Supply Infrastructure Capacity Assessment	137	MMRP-UTIL-B	Vol-1, ROD	Prepare a Santa Clara Water Supply Infrastructure Capacity Assessment	<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>	Santa Clara Station	D		P	VTA	IC	TOD is not included in CP1 through CP4. Once TOD contracts are underway these measures will be addressed.	
Utilities/ Prepare a San Jose Sewer Capacity Assessment and Participate in the Improvements	Utilities	Prepare a San Jose Sewer Capacity Assessment	138	MMRP-UTIL-C	Vol-1, ROD	Prepare a San Jose Sewer Capacity Assessment	<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.</p> <p>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.</p> <p>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>	28th Street/Little Portugal Station (Alum Rock); Downtown San Jose Station; Diridon Station	D		P	VTA	IC	TOD is not included in CP1 through CP4. Once TOD contracts are underway these measures will be addressed.	



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Mitigation Monitoring & Reporting Program**

Env Doc Chapter / Mitigation Topic	Environmental Document Chapter	Mitigation Topic	MMRP Code		Source Document	Summary	Mitigation Measure	Location	Implementation					Quarter Mitigation Completed	
			Chrono #	Measure #					Timeframe: Design (D)	Timeframe: Construction (C)	Timeframe: Post-construction (P)	Responsible Party	Compliance Status		2024
															Q1
Utilities/ Prepare a Santa Clara Sewer Capacity Assessment and Participate in the Improvements	Utilities	Prepare a Santa Clara Sewer Capacity Assessment	139	- MMRP-UTIL-D	-	Vol-1, ROD	Prepare a Santa Clara Sewer Capacity Assessment	Santa Clara Station	D		P	VTA	IC	TOD is not included in CP1 through CP4. Once TOD contracts are underway these measures will be addressed.	
Visual Quality and Aesthetics/ Replace Trees	Visual Quality and Aesthetics	Replace Trees	140	- MMRP-AES-CNST-A	-	Vol-1, ROD	<p>Replace Trees: The contractor will inventory trees that will be removed due to construction activities and will note each tree on construction plans before construction begins. VTA will compensate for any trees removed according to the following ratios.</p> <p>VTA will replace all urban trees that are to be removed or lost as a result of the BART Extension to the extent feasible. VTA will replace trees with a diameter of less than 12 inches at a 2:1 ratio, and trees with a diameter of 12 inches or more at a 3:1 ratio. If urban trees (nonnatives and ornamentals) are replaced with native trees, VTA will use a reduced mitigation ratio of 1:1 for all trees smaller than 12 inches in diameter, and 2:1 for all trees with a diameter of 12 inches or more. VTA will irrigate and maintain these trees for a period of no less than 3 years. If VTA cannot replace trees at the stated ratios along the alignment, VTA will pay in-lieu fees.</p> <p>For any landscaping adjacent to the creeks and on VTA right-of-way (ROW), VTA will adhere to the SCVWD's Guidelines and Standards for Land Use Near Streams regarding the use of native species near the creeks.</p>	Program-wide	D	C		VTA/C	IC	<p>The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (PS&E) packages. For CP-2 Tunnel and Trackwork: No trees were removed in Q1 2024.</p>	



**BSV Phase II - Environmental Commitments Record
Mitigation Monitoring & Reporting Program**

Env Doc Chapter / Mitigation Topic	Environmental Document Chapter	Mitigation Topic	MMRP Code		Source Document	Summary	Mitigation Measure	Location	Implementation					Quarter Mitigation Completed	
			Chrono #	Measure #					Timeframe: Design (D)	Timeframe: Construction (C)	Timeframe: Post-construction (P)	Responsible Party	Compliance Status		2024
															Q1
Visual Quality and Aesthetics/ Minimize Light and Glare (for TOD)	Visual Quality and Aesthetics	Minimize Light and Glare (for TOD)	141	- MMRP-AES-A	-	Vol-1, ROD	Minimize Light and Glare (for TOD)	TOJD	D	C			IC	TOD is not included in CP1 through CP4. Once TOD contracts are underway these measures will be addressed.	
Water Resources, Water Quality, and Floodplains/ Design and Implement Stormwater Control Measures	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.	Program-wide	D	C	P	VTA/C	IC	The four contract packages and current design status is as follows: For CP-1 Systems, CP-3-Newhall Yard/Santa Clara Station, and CP-4 Underground Stations, a General Engineering Consultant (GEC) has been selected and is preparing the three Design-Bid-Build plan, specification, and estimate (P&E) packages. For CP-2 Tunnel and Trackwork: A combined programmatic SWPPP as well as a site-specific SWPPP for West Tunnel Portal were submitted in Q1 2024.	